

# Reflection of the Economic Crisis in the Consumer and Entrepreneurs Subsectors<sup>1</sup>

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## Abstract

National accounts provide data about the economic behaviour of the sector of households as a whole and, to a limited extent, also divided into the consumer and entrepreneur sub-sectors. Time series of the sub-sector data are short, but cover the periods of significant economic changes. It is usual that final consumption expenditure and investments grow in times of economic growth. Recessions and crises are reflected in cautious consumer activity – lower consumption and less interest in investments and consequently in loans. When the signs of a crisis occur, producers immediately reduce costs and investments, and try not to increase their indebtedness. This paper should help identify manifestations of these general observations concerning consumers' and producers' behaviour in the period from 2009 to 2014, namely, behaviour of households in the Czech Republic viewed as consumers and as entrepreneurs. The article focuses in this context also the information value of the data for subsectors.

## Keywords

*Households, consumer sub-sector, entrepreneur sub-sector, economic crisis*

## JEL code

*E21, C82*

## INTRODUCTION

Households are generally defined in the national accounts as a consumer sector, that is, their main economic role is that of consumption and their main financial source is income from labour. However, this characterisation unconditionally applies only to a part of the household sector, namely, to households as consumers. In addition to consumers, the household sector also contains entrepreneurs, meaning small-scale trade owners, whose main economic role is that of producing non-financial goods

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and services and their sources draw on sales of their own products. In other words, their economic behaviour is different from that of consumers', being analogous to the behaviour of non-financial corporations.

However, consumption must be considered within the framework of the scope and relationships of disposable income, as well as savings, because households, on a general level, form a significant contributor to national savings, and economic theory ranks the latter among the fundamental roots of economic growth and prosperity. Consumers enter the income distribution process as a subject that pays less than it gets (households must, first of all, pay taxes on production and imports, income taxes, and social contributions; on the other hand, they receive wages, social benefits and other types of income). They thus create, in the form of disposable income, sufficient resources to cover their immediate needs (in the sense of final consumption expenditure), and simultaneously they create savings. Households thus represent a sector that should generate resources sufficient for creating the national savings while simultaneously representing a subject to produce sufficient available resources in the economy to alleviate the deficit chronically created by the general government, which also means reducing the deficit with respect to foreign countries. Households as consumers play the role of a subject whose economic result (as recorded on the non-financial account) is positive (profit). It means that consumers traditionally play the role of creditors.

Households as entrepreneurs exhibit signs characteristic for the economic behaviour of non-financial corporations (even though there are differences based on the specific role of a small-scale producer).<sup>5</sup> For such producers, the decisive data are recorded on the production account (the value added), generation on income account (the value structure of the value added), and acquisition of non-financial assets account (investments). In this context, the dominant index is the value added they create.

In periods of economic growth, the offer of consumer and mortgage loans gets wider and both expenditure on the final consumption and investments of consumers are growing.

Consequently, their savings and financial savings rates (already low for Czech households)<sup>6</sup> go down. Under such conditions, serious macroeconomic consequences are brought about if consumption by households quickly grows. Those households that do not create sufficient resources have to cover part of their consumption and investments with the aid of loans. This increases households as consumers' indebtedness in the form of loans and, together with the decreasing rates of savings and financial savings can, despite a favourable economic climate, lead to insolvency and inability to meet liabilities.

In the years of recession, and even crisis, coming after years of economic growth, a turn occurs in behaviour of households as consumers, characterised by a cautious approach to consumption and little interest for investments and long-term loans. However, this turn does not come immediately. As a rule, a crisis first hits non-financial and financial corporations, possibly also general government;<sup>7</sup> and households are only hit after a certain time lag.<sup>8</sup> It should also be true that, in the years of crises, households restrict their both non-financial and financial investments, or try to put their free resources into lower-risk assets.<sup>9</sup> Producers (mainly represented by non-financial corporations) respond

<sup>5</sup> A small-scale producer is understood as an economic unit whose legal entity is not different from the individual who carries out the production activity (in the Czech Republic they run their businesses pursuant to the Trade Licence Act, but are not entered in the Commercial Register – merchants, farmers, lawyers, advisors, artists, etc.).

<sup>6</sup> See Hronová and Hindls (2008), Janáček (1999).

<sup>7</sup> Whether or not the non-financial corporation and/or general government will be hit most seriously depends on many circumstances, among which the causes of the particular crisis are most important. A more detailed treatment of these issues can be found, e.g., in Czesany (2002), Hájek (2008).

<sup>8</sup> The fact that this tendency is generally present in the final consumption expenditure values of households and the general government has been verified by a test of significance in a group of 33 developed countries. More details can be found in Hindls and Hronová (2012).

<sup>9</sup> See also Hronová and Hindls (2013).

to a crisis in a different way. When the signs of a crisis occur, they immediately reduce costs (especially both non-financial and financial investments), and try not to increase their indebtedness.

This paper should help identify manifestations of the above-mentioned general observations concerning consumers' and producers' behaviour in the period from 2009 to 2014, namely, behaviour of households in the Czech Republic viewed as consumers and as entrepreneurs. To this end, we will use the data for the household sub-sectors in the Czech Republic according to ESA 2010, complementing our analysis with a look at the evolution of the economic behaviour of the household sector as whole.

## 1 NATIONAL ECONOMY CONTEXT

In the late 1990s, the Czech economy underwent a short crisis, brought about by internal causes, and from 1999 to 2008 there was a period of a high GDP growth rate (with 4.0% as average annual growth). This growth was supported by a constantly growing demand by households (with the average annual growth at 2.9%), investments into fixed capital (with the average annual growth at 5.5%), as well as a high growth rate of turnover with abroad, when the growth rate of exports (12.2% annual average growth) was higher than that of imports (11.6% annual average growth).

This boom period in the Czech Republic was terminated when signs of the worldwide financial crisis came in 2008, followed by the economic and fiscal recession periods 2008–2010 and 2010–2012. Since the industrial and construction sectors declined in 2009, investments into fixed capital were substantially reduced, and both imports and exports went down as well (by 10% year-to-year). Nonetheless, the Czech economy managed to maintain active balance values for trade and services, when the CZK (Czech Crown) was moderately strengthening. Negative consequences in the production were reflected in the slow-down, stagnation and finally decrease of households' final consumption expenditure (see Table 1). The rate of indebtedness slowed down as well. The economic recession and the accompanying increase of the unemployment rate led to an increase of the government debt and deficit, and to focusing the economic policy exclusively on "budget responsibility".<sup>10</sup> Hence the recovery was unstable and the economic crisis came back in 2012 and 2013.

In 2014, economic growth returned with all its positive aspects: growing industrial production (especially, in the secondary industry focused on demand from abroad), growing construction activities (for the first time after five years of decrease), growing retail, investments by both businesses and the state without a significant increase in indebtedness, reduced unemployment rate, growing real wages (after a two-year decrease), and a surplus on the balance of payments on the current account (first since 1993). All of that at a low average annual inflation rate, reduced influx of investments from abroad, and a weakening CZK (due to the intervention by the Czech National Bank).

**Table 1** Year-to-year growth rates for selected indices in the national economy of the Czech Republic (percentages)

Index	2008/07	2009/08	2010/09	2011/10	2012/11	2013/12	2014/13
GDP	2.7	-4.8	2.3	2.0	-0.9	-0.5	2.0
GFCF	2.5	-10.1	1.3	1.1	-3.2	-2.7	2.0
FHCE	2.9	-0.7	1.0	0.3	-1.5	0.7	1.5
Industrial production	-1.8	-13.6	8.6	5.9	-0.8	-0.1	5.0
Construction production	0.0	-0.9	-7.4	-3.6	-7.6	-6.7	4.3
Inflation rate	6.3	1.0	1.5	1.9	3.3	1.4	0.4

**Note:** GDP – Gross Domestic Product, GFCF – Gross Fixed Capital Formation, FHCE – Final Consumption Expenditure by Households.

**Source:** <www.czso.cz>

<sup>10</sup> Meaning to keep the general government's deficit below 3% of GDP.

The periods of prosperity and crisis, expressed by means of the GDP growth, have different effects on the economic behaviour of individual sectors. A succinct measure of their economic activities is given by their net lending/borrowing. Czech non-financial corporations as a whole went through the crisis with positive balances or low deficits, the households as a whole had high surplus values of resources. Hence the consequences of the financial and economic crisis mainly hit the general government (see Table 2).

**Table 2** Net lending/borrowing of the national economy of the Czech Republic and its sectors (bn CZK, current prices)

Institutional sector	2007	2008	2009	2010	2011	2012	2013	2014
Non-financial corporations	-211.0	-135.4	9.7	-57.1	-99.3	-49.5	-17.5	-78.2
Households	57.6	47.4	105.5	75.2	70.9	90.9	75.3	104.2
– as entrepreneurs	–	–	6.8	-7.3	36.9	-12.1	19.2	-72.3
– as consumers	–	–	98.7	82.5	34.0	103.0	56.1	176.5
General government	-26.6	-84.6	-216.2	-174.5	-108.9	-157.9	-47.2	-84.6
Total economy	-155.2	-161.2	-71.5	-127.2	-112.4	-46.0	43.5	-10.5

Source: <www.czso.cz>

The economic behaviour of small-scale entrepreneurs in the household sector measured by the records on the national accounts is different not only from that of households as consumers but also from that of non-financial corporations. Hence we will base our analysis here on the data from the groups of consumers and entrepreneurs in the household sector. Data provided by the Czech Statistical Office are available for the household sector as a whole from the period of 1990–2014. The values of the indices for the consumer and small-scale entrepreneur groups, or the entrepreneur and consumer sub-sectors<sup>11</sup> are only available for the period of 2009–2014. Even that short time series will, however, help us explain the differences in behaviour of small-scale entrepreneurs and consumers in a complex period full of turbulent fluctuations and trace the consequences of the recession and crisis conditions for these two important sub-sectors of the household sector. Last but not least, this very existence of these differences in the economic behaviour in the years of crises is a confirmation for the necessity to monitor and assess, on a long-term basis, the data for the entrepreneur and consumer sub-sectors of the household sector. The analysis of the economic behaviour of these sub-sectors will be complemented with a view on the household sector as a whole.

## 2 GENERATION OF INCOME

The basic economic role of small-scale entrepreneurs is the production of goods and services, and the dominant index is that of value added and its structure; on the other hand, the main economic role of households as consumers is the consumption covered from their disposable income. However, households as consumers significantly contribute to the generation of the gross domestic product, not only by market activities (providing the dwelling services) but also by production for their own use (dwelling services produced by owner-occupiers, agricultural products retained by farmers and household services produced by employing paid staff).

<sup>11</sup> The Czech Statistical Office publishes data for the households according to the basic economic roles (production vs. consumption), speaking about these groups as sub-sectors. It distinguishes between two sub-sectors: households as entrepreneurs (S.141), and households as consumers (S.142). For the sake of understanding, we are going to employ this notation (both verbal and in codes) in the present paper despite the fact that it is not compliant with the official classification (in which S.141 and S.142 denote employer sub-sectors, i.e., entrepreneurs including self-employed).

**Table 3** Proportion of consumer and entrepreneur sub-sectors in the creation of GDP in the Czech Republic (percentages)

Sub-sector	2009	2010	2011	2012	2013	2014
Entrepreneurs (S.141)	13.6	13.2	12.7	12.2	11.8	11.7
Consumers (S.142)	5.8	6.0	5.9	5.8	5.8	5.7
Households – total	19.4	19.2	18.6	18.0	17.6	17.3

Source: <www.czso.cz>, authors' calculations

The data shown in Table 3 indicate a decreasing proportion of the household sector in the creation of the GDP; this fact is a consequence of the decreasing proportion of small-scale entrepreneurs. Their Gross Value Added (GVA) went constantly down every year from 2009 to 2013 (in current prices); the year 2014 brought growth of the GVA; even then it amounted to merely 93.4% of the 2009 GVA (in current prices). The GVA was moderately growing in the consumer sub-sector (except for 2012); the total growth amounted to 6.1% for the entire period under assessment (in current prices).

The value structure of the GVA is for the household sector (and its sub-sectors) fundamentally different from that of other sectors. While the most significant GVA component is given by the compensation to employees in other sectors, for households it mainly consists of mixed income and operating surplus. Generally, households as consumers have only limited numbers of employees (in the provision of household services); and entrepreneurs are predominantly self-employed (so their labour compensations are included in the mixed income).<sup>12</sup> The net taxes on production and imports have a low value (and, consequently, a low proportion); hence the operating surplus and the mixed income are the main components of the net value added, and consequently of the GVA in both sub-sectors. Consumption of fixed capital is the second most important component of the GVA created by the consumers. The consumer sub-sector's proportion of this component in the GVA is substantially larger than that of the entrepreneur one's – the reason is that the apartments and houses owned by consumers have high values.

A high proportion of consumers' operating surplus, mixed income, and consumption of fixed capital also means that the proportion of consumers' gross operating surplus and mixed income in the GVA amounts to about 99%, while in the entrepreneur sub-sector the average proportion was 86.2% in the period under assessment. The average values for the components of the GVA for the consumer and entrepreneur sub-sectors from 2009 to 2014 are shown in Table 4.

**Table 4** Structure of Gross Value Added for the consumer and entrepreneur sub-sectors (as percentages of GVA)

Component	Entrepreneurs (S.141)	Consumers (S.142)
Net operating surplus	–	53.7
Net mixed income	77.3	14.0
Consumption of fixed capital	8.9	31.3
Compensation of employees	15.4	0.2
Net taxes on production and imports	–1.6	0.8
<b>Gross value added</b>	<b>100.0</b>	<b>100.0</b>

Source: <www.czso.cz>, authors' calculations

<sup>12</sup> Let us recall that the mixed income includes income from business activities as well as the labour income of the small-scale producers.

We must note about the above-stated data that the consumers' operating surplus is generated not only by providing dwelling services to other subjects, but also to themselves. This, of course, deforms the view of the actual "profit" from such activities and, in relation to the specific character of the property income (see below), the analysis of the disposable income creation in individual sub-sectors it is hard to interpret.

### 3 DISPOSABLE INCOME AND THE USE THEREOF

The creation of the disposable income and the use thereof for consumption is a focus of our analysis of the households as consumers. Small-scale entrepreneurs have no final consumption; their disposable income hence equals the savings,<sup>13</sup> meant for investments. For households as consumers, the value of savings is calculated as a difference between the disposable income and final consumption expenditure values. When evaluating the economic behaviour of the consumers and small-scale entrepreneurs in the household sector, we will first have a look at the household sector as a whole.

The structure of disposable income in the household sector evolves insignificantly in time; the main component is that of wages, and the most dynamic (regarding the time evolution) component is usually that of the property income. The reduced economic activities in the crisis time and the growing unemployment should cause, on the one hand, a decrease in the proportion of wages, income from business and current taxes (especially the income tax on the income of individuals and legal entities); and, on the other hand, an increase in social benefits and a growing balance of the social income. Table 5 shows the time evolution of the structure of the net disposable income.

To a limited extent, the data shown in Table 5 confirm the general points stated above. After the beginning of the economic crisis in 2009, the proportion of income from labour (wages and salaries) went down because employers very quickly responded to the signs of the coming crisis;<sup>14</sup> on the other hand, the proportion of income from the businesses of small-scale producers (i.e., the mixed income) further grew in that year. The subsequent decrease of the proportion of the mixed income (and of its value expressed in current prices) was caused by decreasing net value added created by entrepreneurs between the years 2009 and 2013; the latter decrease is a clear sign of reduced economic activity. A turning point came as late as in 2014, when the entrepreneurs' net value added went up by 4% (in current prices) compared with the year before; this increase was mainly caused by an increase in the mixed income by 7.4%.

**Table 5** Structure of net disposable income (percentages of NDI)

Index	2007	2008	2009	2010	2011	2012	2013	2014
Wages and salaries	61.2	60.7	58.0	58.3	59.7	60.7	61.5	61.6
Net operating surplus	6.0	6.1	6.1	6.3	6.2	5.9	6.0	5.9
Mixed income	22.4	21.1	21.7	21.2	20.6	19.6	19.0	19.9
Balance of property income	7.2	7.4	6.7	6.3	6.3	6.2	6.4	5.8
Balance of social income values <sup>15</sup>	12.1	12.1	14.3	14.5	14.8	15.0	14.4	14.2
Balance of other income values	-0.2	-0.1	-0.1	-0.1	-0.4	-0.2	0.3	0.4
Current taxes	-8.7	-7.3	-6.7	-6.5	-7.2	-7.2	-7.6	-7.8
<b>Net disposable income (NDI)</b>	<b>100.0</b>							

Source: <www.czso.cz>, authors' calculations

<sup>13</sup> The same as for the non-financial corporations.

<sup>14</sup> In 2009, the wages paid in the Czech economy (in current prices) went down by 2% in comparison with the year before.

<sup>15</sup> Social benefits – social contributions.

Both in 2009 and in 2014, the balance of the property income went down substantially,<sup>16</sup> due to the year-to-year decrease (in current prices) in the received interest amount by 33.8% and paid interest amount by 41.6% in 2009 (the same values were, respectively, 28.3% and 35.9% in 2014). It is also interesting to compare the absolute values of the received and paid interest. The interest amount received by households in 2014 (21.5 bn CZK, current prices) is the smallest in the entire time series since 1993, while the interest amount paid by households in 2014 (11.1 bn CZK, current prices) is the second smallest; the smallest one occurred in 1993. This fact is a consequence of very low interest rates on both deposits and loans, and unwillingness of households to increase their indebtedness (an increase of households' indebtedness in the form of loans in 2014 amounted to mere 36.0% of the same increase in the last year before crisis, 2008).

The balance of social income only concerns the consumer sub-sector, but it is a result of the evolution of social contributions, whose amount depends on the levels of wages and employment, and social benefits, whose amount always increases when the economic activity is in recession. This fact is also indicated by the high values of the said balance in the years 2009 and 2012, when the crisis prevailed. However, the balance values for the property income and current taxes must be analysed with respect to the differences in the economic behaviour in the two sub-sectors.

**Table 6a** Selected indices for the entrepreneur and consumer sub-sectors (bn CZK, current prices)

Index	2009		2010		2011	
	S.141	S.142	S.141	S.142	S.141	S.142
Net operating surplus	–	126.2	–	130.7	–	128.2
Mixed income	418.2	28.2	407.0	32.0	393.1	32.9
Wages and salaries, receivable	–	1 190.9	–	1 206.1	–	1 236.7
Property income – balance	–387.2	525.7	–399.9	529.4	–340.0	470.0
– receivable	5.8	539.7	5.7	545.9	1.8	486.3
– out of it: withdrawals from income of quasi-corporations	–	387.7	–	399.3	–	337.2
– payable	393.0	14.0	405.6	16.5	341.8	16.3
– out of it: withdrawals from income of quasi-corporations	387.7	–	399.3	–	337.2	–
Primary income <sup>17</sup>	31.0	1 871.0	7.1	1 898.3	53.1	1 867.8
Current taxes	12.2	128.3	5.3	131.6	7.8	140.7
Social contributions	14.7	242.5	15.0	241.7	15.8	247.3
Social benefits <sup>18</sup>	0.1	535.4	0.1	541.5	0.1	553.0
Net disposable income (for S.141, also savings)	19.3	2 035.0	2.0	2 065.3	43.0	2 025.1

Note: S.141 – Households as entrepreneurs, S.142 – Households as consumers.

Source: <www.czso.cz>, authors' calculations

<sup>16</sup> The proportion of property income balance in the net disposable income thus got in 2014 to the lowest level seen since 1993.

<sup>17</sup> The shown values correspond to the balance on the account of primary income, after subtracting employers' social contributions, which do not belong to households but are, in line with the concept of the compensations paid to employees, recorded on the resource side of this account for households. More on this topic – see Hronová et al. (2009).

<sup>18</sup> In the case of entrepreneur sub-sector, the social benefits are on the payable side, paid to their employees (the so-called "other social insurance benefits" different from pensions); for the consumer sub-sector, the social benefits are on the receivable side (obtained from the state, financial corporations, and employers, including small-scale entrepreneurs).

**Table 6b** Selected indices for the entrepreneur a consumer sub-sectors (bn CZK, current prices)

Index	2012		2013		2014	
	S.141	S.142	S.141	S.142	S.141	S.142
Net operating surplus	–	123.8	–	125.1	–	126.1
Mixed income	375.1	35.1	362.2	35.2	389.8	35.6
Wages and salaries, receivable	–	1 271.5	–	1 285.4	–	1 317.8
Property income – balance	–379.5	509.6	–339.2	473.2	–456.0	580.0
– receivable	1.6	520.1	2.9	490.1	2.7	590.4
– out of it: withdrawals from income of quasi-corporations	–	376.4	–	337.7	–	454.1
– payable	381.1	10.5	342.1	16.9	458.7	10.4
– out of it: withdrawals from income of quasi-corporations	376.4	–	337.7	–	454.1	–
Primary income <sup>13</sup>	–4.4	1 940.0	23.1	1 918.8	–66.7	2 059.5
Current taxes	7.1	144.0	8.2	150.6	7.9	156.3
Social contributions	15.4	253.1	15.1	262.7	14.1	273.9
Social benefits <sup>14</sup>	0.1	566.3	0.0	563.2	0.0	576.6
Net disposable income (for S.141, also savings)	–13.9	2 104.0	12.7	2 075.1	–78.6	2 214.2

Note: S.141 – Households as entrepreneurs, S.142 – Households as consumers.

Source: <www.czso.cz>, authors' calculations

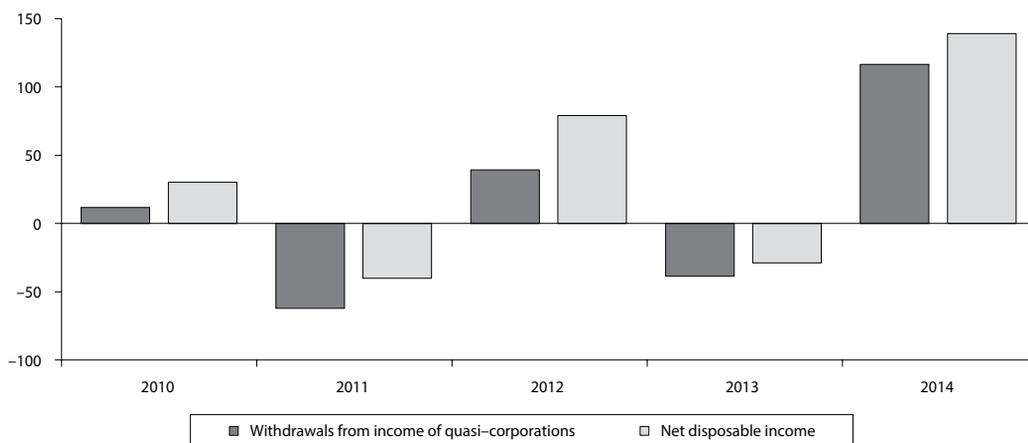
The data in Tables 6a and 6b indicate that there are high values of the property income "paid" by entrepreneurs and received by consumers. Withdrawals from income of quasi-corporations cause these high amounts compensated within the household sector. This index characterises the income drawn by entrepreneurs for their own use from the profit (mixed income) created by the quasi-corporations they own.<sup>19</sup> It means that a difference between the value of the mixed income and that of the withdrawals from income of quasi-corporations is the amount which entrepreneurs are willing to put aside from their profit to invest into their businesses. This amount, together with the balance of other property income types (interest and rents) makes up the entrepreneurs' primary income. The reduction of the amount which the entrepreneurs draw for their own use is a reason for the significant increase of the primary income, and subsequently of their net disposable income, and savings in 2011 and 2013; and finally their net lending (see Table 2). In this context we can say that entrepreneurs limit their consumption in favour of investments (both non-financial and financial). An opposite phenomenon (an increased withdrawals from income of quasi-corporations) in the years 2010, 2012 and, mainly, 2014, brought entrepreneurs' very low or even negative value of the primary income, disposable income, and savings. At the same time the savings is their own resource for financing their investments.

Households' final consumption expenditure was growing in the period under assessment faster than their net disposable income (the former grew in 2014 by 8.2% as compared with 2008, while the latter grew by 7.2%). In the 2010 constant prices<sup>20</sup> the final consumption expenditure grew only by 1.3% in the same period. In the years of the crisis, households were more cautious regarding their consumption – the volume of their demand went down (namely, the final consumption expenditure in constant prices was lower by 0.7% in 2009, and by 1.5% in 2012 – see Table 1). It was a natural response to the economically unstable environment, and the overall negative feelings in society due to the strongly restrictive economic policy. Such a substantial and long-lasting stagnation of the final consumption

<sup>19</sup> Entrepreneurs draw such amounts from their mixed income in their own favour as consumers.

<sup>20</sup> Let us recall that these are not the classical constant prices, but last year's prices chain-linked with the base of 2010.

**Figure 1** Withdrawals from income of quasi-corporations – consumers and net disposable income – consumers (year-to-year growth, bn CZK, current prices)



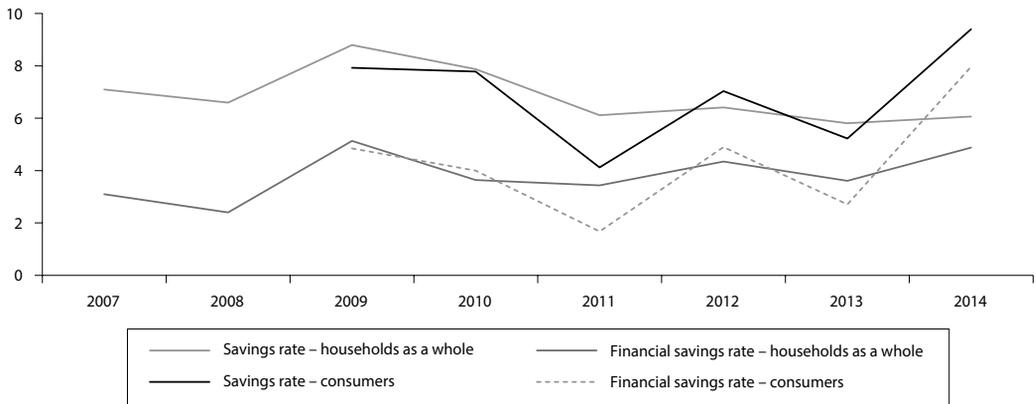
Source: <www.czso.cz>, authors' calculations

expenditure by the households in the Czech Republic has not occurred since 1993. Together with a very low inflation rate, this phenomenon attenuated the economic growth. A change of the economic policy and overall thawing of the economic environment increased the confidence felt by households in 2014.

A high proportion of the final consumption expenditure by households in their net disposable income and a faster growth of the former than of the latter are reflected in a low level of savings – this level is traditionally among the lowest within the EU;<sup>21</sup> and it has a tendency to go down even further (see Figure 2). The savings rate by households as consumers significantly fluctuates from year to year; this phenomenon is implied by the drop in net disposable income (by 2.0% in 2011, and 1.4% in 2013, in current prices) while the final consumption expenditure was growing (by 2.0% in 2011, and 1.6% in 2013, again in current prices). Year-to-year decreases in net disposable income of consumers in the years in question were caused by changes in the structure of its generation, that is, significant year-to-year decreases of withdrawals from income of quasi-corporations (see Tables 6a and 6b, and Figure 1). The same reason there is for the substantial growth of the savings level in 2014; the increased withdrawals from income of quasi-corporations in favour of consumers amounted to 83.6% of the year-to-year increase in the net of disposable income. Withdrawals from income of quasi-corporations is internal transfer between entrepreneurs and consumers within the household sector; hence the evolution of the households' saving rate does not respond to such fluctuations.

The financial savings rate of households as consumers and households as a whole evolved in a similar way. It is therefore clear that the value of a sole index (withdrawals from income of quasi-corporations) influences the results recorded on the sub-sectors' accounts, from the primary income to the net lending/borrowing (see Table 2); and the year-to-year fluctuations (ups and downs) of the primary and disposable income, as well as net borrowing in the consumer and entrepreneur sub-sectors are nearly exclusively caused by the changes in the withdrawals from income of quasi-corporations. This phenomenon affects not only the values of the mentioned absolute indices, but also those of relative indices

<sup>21</sup> Within the framework of international comparisons, a gross savings rate of households is published; its long-term value in the Euro-zone countries is between 12% and 15%, while in the Czech Republic it is between 9% and 13%.

**Figure 2** Savings rate and financial savings rate (as percentages of net disposable income)

Source: <www.czso.cz>, authors' calculations

related to them. Analysing the latter therefore will not bring any significant informational value regarding the description of the economic behaviour of the sub-sectors in question; or rather, we are unable to objectively assess to what extent the recession and recovery are reflected in the data from the consumer and entrepreneur sub-sectors.

These considerations imply that, when analysing the economic behaviour of the consumer and entrepreneur sub-sectors, it is better to focus our attention on non-financial and financial investments and on changes in the assets and liabilities.

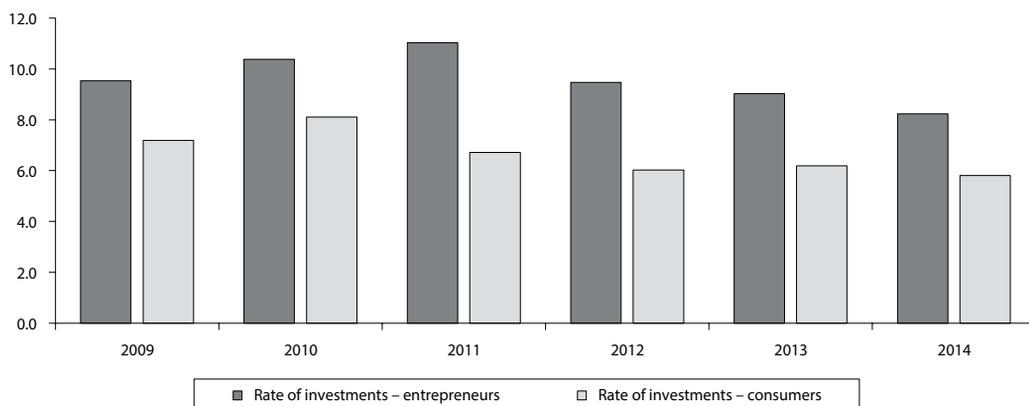
#### 4 NON-FINANCIAL INVESTMENTS

Savings plus the capital transfer balance make up a resource for financing investments. The level of investment activities, similar to consumption, is an index reflecting the evolution of the economic cycle. In other words, a decrease in economic activities in the national economy as a whole is reflected in a decrease in investments in all sectors, including households (for households as consumers, the only investments concerned are those into apartments and houses, or possibly valuables).<sup>22</sup>

In the case of households, the level of investment activities is measured by the rate of investments, viewed as the proportion of fixed capital formation and of disposable income; for both of these indices, we can consider either gross or net value. Even though we speak about net disposable income above, we will now use the gross rate of investments, i.e., the proportion of the gross fixed capital formation and of gross disposable income. We will do so not only because consumption of fixed capital, falling into the gross disposable income, is a resource for financing investments, but also to achieve a better comparability with the index measuring the entrepreneurs' investments. For the entrepreneur sub-sector we have to measure the investments with respect to the fact that the character of the economic behaviour of households as entrepreneurs is similar to that of non-financial corporations, for which the investments are measured via the gross fixed capital formation and the gross value added. Data on the investment rates for both sub-sectors are given in Figure 3.

<sup>22</sup> Households as consumers expend all articles of both short- and long-term use at the time of the purchase, have no stock, and the only investments into fixed capital are those into apartments and houses. The latter fact follows from the definition of the final consumption expenditure by households.

**Figure 3** Rates of investments (percentages of gross disposable income – for consumers, and of gross value added – for entrepreneurs)



Source: <www.czso.cz>, authors' calculations

Figure 3 indicates a decreasing rate of investments by both consumers and entrepreneurs, implied by a decreasing volume of the investment activities. The value of the gross fixed capital formation went up (in current prices) until 2011; this growth was followed by decrease, observed in each year of the period under assessment until its end (the value of the gross creation of fixed capital in 2014 amounted to a mere four-fifths of this value in 2009). Consumer investments evolved in a similar way,<sup>23</sup> but the decrease in the value of investments was observed as early as 2011 for them (with a year-to-year decrease of 18.6%). After that, investments into fixed capital stagnated – their value in 2014 was at a mere 88.0% of that of 2009. Neither very low interest rates on mortgage loans nor the stagnating prices of real estate brought increased interest of households as consumers in investing into their dwellings. The data on the evolution of investments testify (better than the indices studied above) to the differences in the economic behaviour of consumers and entrepreneurs – consumers' response to the coming crisis is very slow in consumption, but quick in limiting non-financial (and also financial – see below) investments.

## 5 FINANCIAL INVESTMENTS AND INDEBTEDNESS OF HOUSEHOLDS

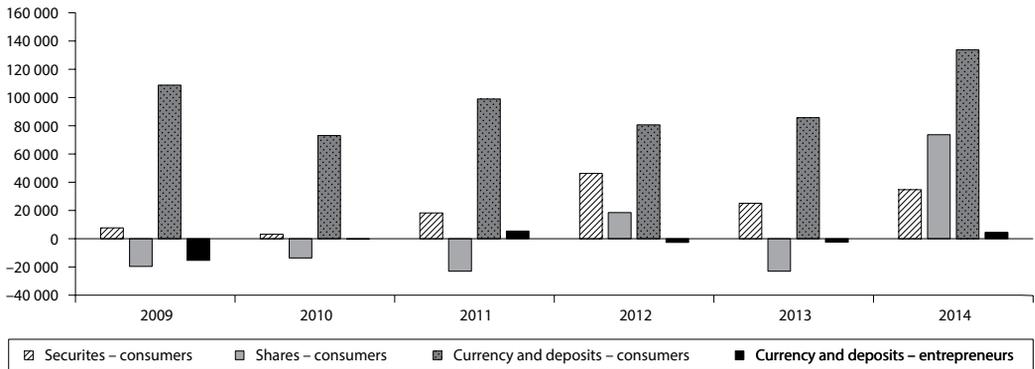
The conclusions based on the analysis of the data recorded on the non-financial account of households as consumers should be adequately reflected in the values of financial transactions and changes in the assets held by households. A quick response of households as consumers to the coming crisis, manifested as limiting their investments into dwellings, was also seen for financial investments.

Figure 4 unambiguously confirms that, in an uncertain economic climate, consumers significantly restrict their financial investments, or focus on depositing their free resources in lower-risk assets (mainly short-term loans and treasury bonds);<sup>24</sup> and they try to get rid of shares and other equity. In connection with the households' tendency to get rid of higher-risk assets in the form of shares and other equity we should note that the dividend value paid to households from their shares and other equity was around 85 bn CZK each year in the period 2009–2013, but went down to 77 bn CZK in 2014. In 2014, which confirmed – from the households' viewpoint – a turn to economic growth, accompanied by growing

<sup>23</sup> Consumers' investments are exclusively incurred on apartments and houses.

<sup>24</sup> For example an extraordinary issuance of Czech treasury bonds in 2012.

**Figure 4** Net change of receivables in the form of currency and deposits, securities and shares and other equity (mil. CZK, current prices)



Source: <www.czso.cz>, authors' calculations

prices of shares and other equity and offers of advantageous opportunities for financial investments, the households put their free sources into higher-risk assets of higher (even though decreasing) return. The consumers' willingness to invest into higher-risk assets was also supported by very low and even falling interest rates on deposits.

The situation is different for households as entrepreneurs. Their investments into securities and shares and other equity are negligible, nearly nil (hence they cannot be depicted in Figure 4). In comparison with the consumer sub-sector, the changes of entrepreneurs' receivables in the form of currency and deposits may also be viewed as insignificant (see Figure 4). The data about the consumers' financial investments can thus be viewed as the data for the entire household sector.

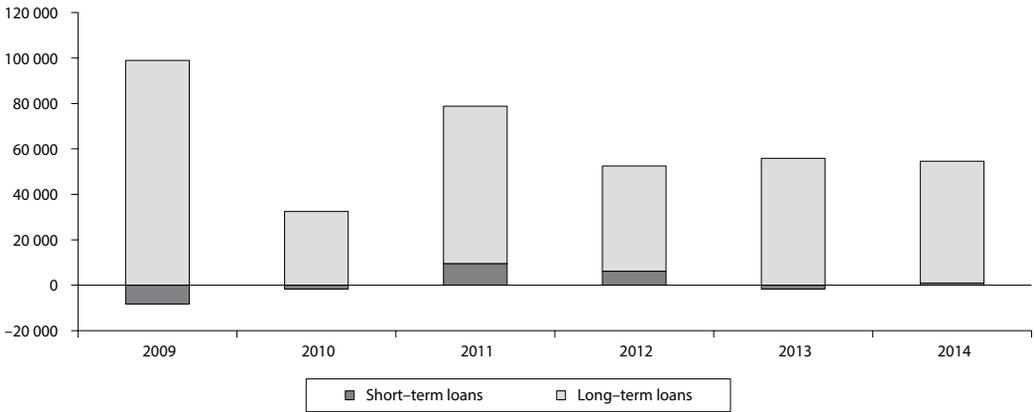
From the viewpoint of the evolution of the changes in liabilities, loans can be considered the most significant component. Figure 5 shows the annual net increments of indebtedness<sup>25</sup> in the form of loans in the consumer sub-sector; it reflects not only the evolution of consumers' demand for long-term (mortgage) loans, as related to the boom of the demand for real estate culminating between years 2007 and 2009, but also the fast response by households to the worsening economic conditions after the beginning of the crisis. An increase in long-term loans in the later years was supported by advantageous interest rates.

The evolution of liabilities is substantially different in the entrepreneur sub-sector, regarding both quantity and quality. While consumers increased their indebtedness (especially in the form of long-term loans) every year, entrepreneurs tried to reduce their debts in the period under assessment, again especially in the area of the long-term loans. This indicates that small-scale producers were not much interested in business loans and their expectations were less optimistic than those of the consumers.

Viewing the sub-sectors' data about the financial operations, we have to observe that consumers represent the dominant subject from the viewpoint of both receivables and liabilities. This fact concerns currency and deposits, net purchase of securities and shares and other equity on the side of receivables and loans on the side of liabilities. Figures 4 and 5 thus more or less reflect the behaviour of the household sector as a whole. However, in the case of loans, a slight difference between the sub-sectors can be pointed out – while entrepreneurs tried to reduce their indebtedness, consumers' new loans amount was higher than the amount paid up; both these observations are in particular true for long-term loans.

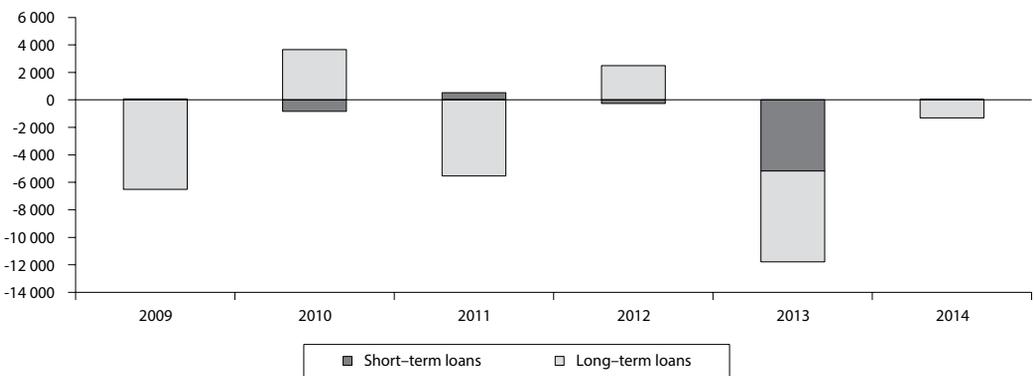
<sup>25</sup> Here the net increase is taken into account, i.e., a difference between the amount of received loans and paid instalments.

**Figure 5** Net change in liabilities in the form of loans – consumers (mil. CZK, current prices)



Source: <www.czso.cz>, authors' calculations

**Figure 6** Net change in liabilities in the form of loans – entrepreneurs (mil. CZK, current prices)



Source: <www.czso.cz>, authors' calculations

**6 ASSETS AND INDEBTEDNESS OF HOUSEHOLDS AND CHANGES THEREOF**

Assets and liabilities of households as entrepreneurs and as consumers have, of course, their differences based on differences in their economic behaviour. Consumers have no stock,<sup>26</sup> their fixed assets are limited to dwellings; an important component of the financial assets consists of shares and other equity and life insurance and pension entitlements; the only components of their liabilities are loans and other liabilities. Entrepreneurs' fixed assets include, in addition to dwellings, other buildings and machinery and equipment; and stock is an important item of their non-financial assets. As for the financial assets, currency and deposits are dominant; and financial liabilities also contain securities and financial derivatives. Nonetheless, similar to the flow account, the asset account of households predominantly belongs to consumers.

<sup>26</sup> This is based on an assumption that households as consumers expend all articles of both short- and long-term use (except for dwellings) at the time of the purchase.

Consumers' proportions in the household sector as a whole are significantly higher for non-financial assets (approx. 80%), financial assets (approx. 90–95%), and financial liabilities (approx. 85–90%) – see Table 7. The above-mentioned observations are mainly based on:

- a) a high volume of the dwellings, which represents three-quarters of the value of non-financial assets of consumers, and three-fifths of that value of the household sector as a whole;
- b) a high volume of currency and deposits – more than one-half of consumers' financial assets, and almost exactly one-half of the assets of households as a whole;
- c) a high volume of long-term (predominantly mortgage) loans, amounting to approx. 95% of consumers' liabilities and approx. 90% of financial liabilities of households as a whole.

**Table 7** Proportions of consumers' assets and liabilities in the values of the household sector in the Czech Republic as a whole (percentages)

	2009	2010	2011	2012	2013	2014
Non-financial assets	80.6	80.2	79.4	79.5	79.5	79.6
Financial assets	92.6	93.7	93.5	94.3	94.8	94.9
Liabilities	88.1	87.6	89.0	89.1	90.6	90.6

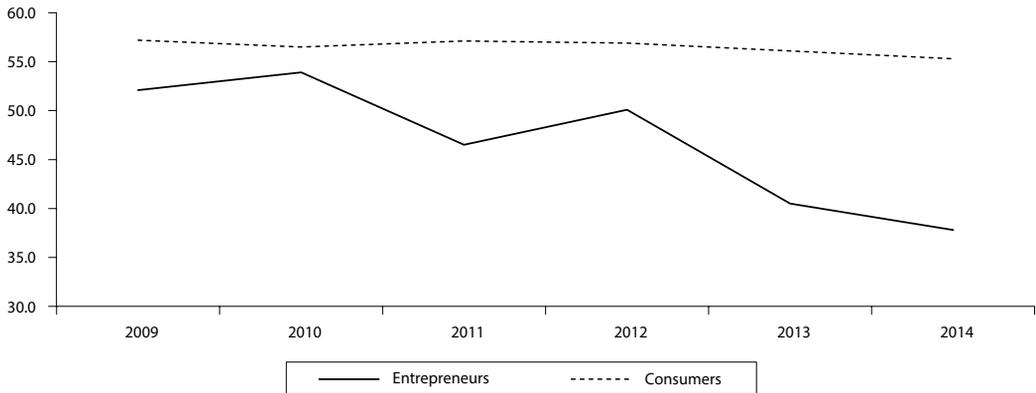
Source: <www.czso.cz>, authors' calculations

Economic growth is connected, on the one hand, with consumers' efforts to deposit their resources into both financial and non-financial assets. On the other hand, it leads to a "greater courage" to incur debts. The crisis and recession times lead consumers to caution in investing, both financial and non-financial.

In 2007, the economic growth culminated in the Czech Republic, accompanied by a high demand for investments into dwellings. This demand was significantly lower after the beginning of the economic crisis, even though the prices of real estate and the interest rates on mortgage loans were going down. This situation led to increasing financial assets held by consumers in the form of (especially short-term) deposits, and of securities and ownership interests; indebtedness was still growing, but at a lower rate. In the period under assessment (2009 to 2014), the overall increase in consumers' non-financial assets was 8.5%, out of which dwellings amounted to 5.3%; and an increase of financial assets was 32.6%, out of which transferable deposits amounted to 68.9%; and an increase in financial liabilities was 21.6%, out of which long-term loans amounted to 23.1%. In other words, the net financial worth of households as consumers grew by 37.9%, which was 19.5 percentage points higher than the change of the total net worth.

In the case of entrepreneurs, the signs of economic and financial crisis were even more pronounced. The highest increase there was in stock (by 54.6%, out of which the in-stock production amounted to 87.8%); the stock represents about one-quarter of entrepreneurs' non-financial assets. The value of dwellings went down by 3.3%, and that of financial assets by 9.9% (out of which short-term deposits amounted to 19.9%). Entrepreneurs' necessity to incur debts also went down – a decrease in financial liabilities was 6.4%, out of which the indebtedness in the form of short-term loans amounted to 18.4%. Consequently, entrepreneurs' net financial worth went down by 14.2%, while the total net worth went up by 12.4%.

The rate of indebtedness measured as the proportions of loans and deposits as of the end of the year also testifies to the differences in the evolution of the main items of the financial assets and liabilities in the consumer and entrepreneur sub-sectors. The value of this index expresses the extent to which households (both consumers and entrepreneurs) are able to cover their liabilities in the form of loans by their deposits. The data depicted in Figure 7 testify to the above-mentioned significant influence of the crisis on entrepreneurs' economic activities. In the case of consumers, the rate of indebtedness

**Figure 7** Rate of indebtedness in the consumer and entrepreneur sub-sectors (percentages)

Source: <www.czso.cz>, authors' calculations

went down in the period under assessment by two percentage points for consumers, while its decrease for entrepreneurs was 14 percentage points.

The long-term evolution in the household sector in the Czech Republic (from 1995) significantly reflected the economic changes that occurred in the given period. The lowest values (around 18%) of the indebtedness rate<sup>27</sup> of Czech households from 1997 to 2001, i.e., the period characterised by uncertainty after the crisis of 1997 and 1998,<sup>28</sup> and the consequent unwillingness to incur debts as well as high interest rates on deposits, which were substantially higher than the average inflation rates in each of the years in question.<sup>29</sup> Another proof is the high proportion of interest amount in the balance of the property income in the said years.<sup>30</sup> In the prosperity years after 2003 the indebtedness rate of Czech households goes up; its highest level occurred in 2009 (57.1 %). After that a decrease followed, analogous to that seen in the consumer sub-sector.<sup>31</sup>

The above-mentioned observations concerning the evolution of the assets and liabilities are based on values of the respective indices in current prices while it is obvious that it is necessary (especially in times of economic turbulence) to distinguish between the influence of the *price* movements (prices going up and down, in particular those of real estate, securities and shares), which is significant in the years of economic changes, on the one hand, and the growing volumes of assets and liabilities related to production activities (the so-called changes implied by *production activity*) and *other* (random or formal) changes on the other hand. The data in Table 8 are related to structural changes in the total values of assets and liabilities.

The data represented above for the consumer sub-sector clearly show the influence of the crisis in the years 2009, 2012, and 2013 (see Table 1) on the price evolution of the non-financial assets;

<sup>27</sup> The rate of indebtedness is expressed as loans as of the end of the year vs. deposits as of the end of the year.

<sup>28</sup> GDP went down by 0.7% in 1997 and by 0.3% in 1998.

<sup>29</sup> The average annual inflation rate was between 8% and 10%, and the interest rates on deposits amounted to values between 20% and 30% p.a. in the years 1997 and 1998.

<sup>30</sup> The balance of interest amounted to more than one-half of the property income balance in 1997 and 1998, and one-third in the period 1999-2011. This proportion currently fluctuates around a value below 10% (since the interest rates on deposits are very low).

<sup>31</sup> The indebtedness rates of consumers and of households as a whole did not differ from each other by more than one percentage point in that period.

**Table 8** The structure of the total annual change in the non-financial and financial assets and financial liabilities in the consumer sub-sector (mil. CZK, current prices)

Change in value of	2009	2010	2011	2012	2013	2014
<b>non-financial assets</b>	<b>-16 374</b>	<b>122 831</b>	<b>133 701</b>	<b>7 939</b>	<b>28 550</b>	<b>87 014</b>
out of which – production activity	87 804	107 436	73 085	65 720	64 728	62 187
– other	-2 449	-1 051	9 019	653	-7 105	-28 589
– prices	-101 729	16 446	51 597	-58 434	-29 073	53 416
<b>financial assets</b>	<b>93 935</b>	<b>261 128</b>	<b>65 264</b>	<b>295 658</b>	<b>168 569</b>	<b>310 085</b>
out of which – production activity	144 811	109 869	119 516	174 367	121 916	266 335
– other	-2 938	151 876	-86 081	71 222	-7 558	-845
– prices	-47 938	-617	31 829	50 069	54 211	44 595
<b>financial liabilities</b>	<b>81 811</b>	<b>29 116</b>	<b>63 188</b>	<b>44 477</b>	<b>47 071</b>	<b>53 455</b>
out of which – production activity	46 067	27 423	85 543	71 328	65 815	89 821
– other	28 433	-1 619	-8 381	-23 972	-19 021	-36 317
– prices	7 311	3 312	-13 974	-2 879	277	-49

Source: <www.czso.cz>, authors' calculations

**Table 9** The structure of the total annual change in the non-financial and financial assets and financial liabilities in the entrepreneur sub-sector (mil. CZK, current prices).

Change in value of	2009	2010	2011	2012	2013	2014
<b>non-financial assets</b>	<b>-40 884</b>	<b>52 518</b>	<b>93 370</b>	<b>-672</b>	<b>6 660</b>	<b>12 729</b>
out of which – production activity	12 125	9 264	7 439	-1 167	-5 578	-4 459
– other	-13 360	-2 038	10 569	-1 259	5 131	9 504
– prices	-39 649	45 292	75 362	1 754	7 107	7 684
<b>financial assets</b>	<b>12 266</b>	<b>-24 867</b>	<b>14 400</b>	<b>-16 951</b>	<b>-11 622</b>	<b>12 687</b>
out of which – production activity	-4 808	5 076	20 545	-7 711	2 287	-52 982
– other	19 567	-28 485	1 215	-9 048	-7 755	31 152
– prices	-2 493	-1 458	-7 360	-192	-6 154	34 517
<b>financial liabilities</b>	<b>-8 614</b>	<b>10 965</b>	<b>-13 256</b>	<b>4 520</b>	<b>-17 866</b>	<b>6 130</b>
out of which – production activity	-11 572	12 344	-16 425	4 404	-16 924	19 347
– other	5 873	-1 905	1 109	70	-1 131	-448
– prices	-2 915	526	2 060	46	189	-12 769

Source: <www.czso.cz>, authors' calculations

for financial assets, a drop in their prices was only significant in 2009; the evolution of financial liability prices was an insignificant factor. The decreasing prices of the real estate property in 2009 led to a short-lived interest in purchasing such property (while the proportion of loans as financing resources was decreasing), but in the following years the already mentioned observation was true, namely, that consumers restrict their investments into non-financial assets and transfer free resources in favour of financial assets, and the volume of liabilities moderately grows.

Regarding the growing value of entrepreneurs' non-financial assets, its dominant factor was the price evolution in 2009, and the growing values of non-financial assets in 2010 and 2011. The years 2012 and 2013 there was the crisis and the overall values of non-financial assets underwent no significant changes; the influence of the price growth was positive. The evolution of financial liabilities was mainly

affected by the level of economic activities – the decreasing liabilities represent a response to the decreasing creation of value added, while its growth in 2014 brought the necessity to look for other sources of financing. Other and price changes in financial liabilities are not significant (except for 2014). The evolution of the components of the financial assets indicates that the influence of the price changes was not substantial; however, the year-to-year changes (both total and based on production) are too variable to explain them purely by the changes of the economic cycle.

## CONCLUSIONS

The household sector consists of two different types of economic subjects – consumers and entrepreneurs. Their economic behaviour in the economic cycle phases is therefore different. The period from 2009 to 2014, for which data of both sub-sectors are available, was a turbulent period in the Czech Republic – there was a recession in 2009, recovery in the years 2010 and 2011, and the crisis returned in 2012 and 2013; and, finally, economic growth came in 2014. This period is also characterised by a low level of investment activities, low inflation rate, and decreasing interest rates on both deposits and loans, and the controlled weakening of CZK.

Households' proportion in the GDP formation was decreasing in that period, and the full amount of that decrease (by two percentage points) can be ascribed to entrepreneurs. Another manifestation was the decreasing proportion of the mixed income (both based on labour and that from the small-scale businesses) in households' net disposable income "in favour" of the growing balance of social income. Households' disposable income was growing slower than the final consumption expenditure in the period 2009–2014; hence the savings rate of households as a whole was decreasing. An analysis of the evolution of the disposable income for the consumer and entrepreneur sub-sectors seems dubious because these values are substantially influenced by year-to-year changes in Withdrawals from income of quasi-corporations. This index, whose value is not recorded in the household sector as a whole, deforms a view on not only the disposable income of consumers and entrepreneurs, but also their savings and net lending/borrowing. Hence the results of analysing data on non-financial accounts of these sub-sectors are hard to interpret; it is impossible to objectively assess the extent to which the crises and recoveries are reflected in the data recorded for the consumer and entrepreneur sub-sectors.

The data on non-financial and financial investments and on the changes in assets and liabilities of these sub-sectors provide more objective information about the effects of crises and recoveries. Entrepreneurs' non-financial investments (and therefore the investment rate too) were growing until 2011; financial investments were insignificant. Consumers responded to the coming symptoms of the economic crisis as early as 2010 by reducing their liabilities, a moderate decrease of the indebtedness rate, selling ownership interests, focus on securities, and also reduced investments into real estate property. After the recovery in 2014, consumers came back to investing into shares and other equity, mainly due to an expected higher return on such investments.

Our analysis of the growing components of assets and liabilities confirms the observation that consumers reduce their investments into real estate and transfer their free resources to financial assets. After the drop of financial assets' nominal value in 2009 and 2010, their growing prices significantly influenced the value of consumers' financial assets. The crises in the years 2009, 2012 and 2013 brought a falling nominal value of the real estate held by consumers – by tens of billions CZK every year.

The data for the sub-sectors of the household sector indicate certain interesting aspects of activities carried out by these two, mutually distinct, subjects; nevertheless, it turns out that the account of the household sector is predominately determined by the consumer sub-sector. Admittedly, entrepreneurs create about two-thirds of the gross value added of the household sector, but their proportion in the sector as a whole for investments into fixed capital amounts to a mere 25%, in the financial liabilities to one-tenth, and in the balance of the financial assets to one-twentieth. If we therefore view

the economic behaviour of consumers via analysing the data on the household sector account from the level of disposable income formation, we will not run into serious errors in interpretation.

## References

- CZESANY, S. Monitorování a analýza hospodářského cyklu (Monitoring and analysis of the economic cycle). *Politická ekonomie*, 2002, Vol. 50, No. 2, pp. 184-207.
- European System of Accounts – ESA 2010*. Luxembourg: Eurostat, 2013.
- HÁJEK, M. Ekonomický růst v ČR a nových členských zemích Evropské unie v období 1995-2006 (Economic growth in the Czech Republic and new EU member countries in period 1995-2006). *Politická ekonomie*, 2008, Vol. 56, No. 4, pp. 435-448.
- HRONOVA, S., HINDLS, R. Ekonomické chování sektoru domácností v České republice – spotřeba a zadluženost (Economic Behaviour of the Household Sector in the Czech Republic – Consumption and Indebtedness). *Statistika*, 2008, Vol. 88, No. 3, pp. 189-204.
- HRONOVÁ, S., FISCHER, J., HINDLS, R., SIXTA, J. *Národní účetnictví – nástroj popisu globální ekonomiky* (National Accounts – a Tool for Describing the Global Economy). 1<sup>st</sup> Ed. Prague: C. H. Beck, 2009.
- HINDLS, R., HRONOVÁ, S. Odraz ekonomického vývoje vybraných zemí ve struktuře výdajů na konečnou spotřebu (Reflection of Economic Development of Selected Countries in the Structure of Final Consumption Expenditure). *Politická ekonomie*, 2012, Vol. 60, No. 4, pp. 425-442.
- HRONOVÁ, S., HINDLS, R. Economic Crises in the Results of the Non-Financial Corporations Sector in the Czech Republic. *Statistika: Statistics and Economy Journal*, 2012, Vol. 92, No. 3, pp. 4-19. ISSN 0322-788X.
- HRONOVÁ, S., HINDLS, R. Czech Households in the Years of Crises. *Statistika: Statistics and Economy Journal*, 2013, Vol. 93, No. 4, pp. 4-23. ISSN 0322-788X.
- JANÁČEK, K. Podivné chování spotřeby v průběhu transformace (Strange behaviour of consumption during the transformation). *Politická ekonomie*, 1999, Vol. 47, No. 5, pp. 579-586.
- MÁREK, L. Analýza vývoje mezd v ČR v letech 1995-2008 (Analysis of Time Evolution of Wages in the Czech Republic in the Period 1995-2008). *Politická ekonomie*, 2010, Vol. 58, No. 2, pp. 186-206.
- SPĚVÁČEK, V. Růst a stabilita české ekonomiky v letech 2001-2011 (Growth and stability of the Czech economy in the years 2001 through 2011). *Politická ekonomie*, 2013, Vol. 61, No. 1, pp. 24-46.
- SINGER, M. A Comparison of the Rates of Growth of Post-Transformation Economies: What Can(Not) Be Expected From GDP? *Prague Economic Papers*, 2013, Vol. 12, No. 1, pp. 3-27. ISSN 1210-0455.