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Sprzedaż książek tel./fax 71 36-80-602

e-mail: econbook@ue.wroc.pl www.ksiegarnia.ue.wroc.pl

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THE ESTIMATION OF FINAL CONSUMPTION EXPENDITURES

KRISTÝNA VLTAVSKÁ, JAROSLAV SIXTA

University of Economics in Prague, Faculty of Informatics and Statistics, Department of Economic Statistics,
nám. W. Churchilla 4, Praha, Czech Republic
email: kristyna.vltavska@vse.cz, sixta@vse.cz

Abstract

Final consumption expenditures represent a significant part of gross domestic product. Since 1990, estimation of final consumption expenditures has been based on European System of Accounts 1995 (ESA 1995). For long-term analyses, it is important to have consistent time series. The aim of this paper is the estimation of consumption expenditures of all sectors with the accent on final household consumption expenditures in line with ESA 1995 broken down by COICOP classification (12 digits) from the year 1970. This is achieved with the estimation of historical time series of GDP constructed by the Department of Economic Statistics (University of Economics in Prague) in 2012. Our results show that more issues notably changed in the households' behavior between the years 1970 and 2012. This paper introduces the results and the methodology as well.

Key words: consumption of households, expenditures, ESA 1995.

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1. Introduction

Using expenditure approach to the estimation of gross domestic product proved that final expenditures represent a significant part of GDP. Final consumption expenditures are divided into expenditures by household, general government and non-profit institutions serving households. The behavior of households influences economic development of the country. This is the reason why we regard household consumption expenditures as one of the most important parts of economy. It covers approximately two thirds of GDP. The Czech Statistical Office has been publishing time series of the expenditures from 1990 onwards. There are several analyses of the development of gross domestic product (Singer 2013, Spěváček 2013) and especially the consumption behavior (Hindls, Hronová 2012, Hronová, Hindls 2008, Kramulová, Musil 2013) using official published figures. Since the consumption behavior varied during the time, it is necessary to create long time series to learn how the preferences changed. This is the reason why the Department of Economic Statistics rebuilt historical time series of gross domestic product by production and expenditure approaches. Recently, one can find the results of the indicators in the time series from 1970 according to the European System of Accounts ESA 1995.

The methodology of the estimation of historical time series of GDP in line with ESA 1995 was broadly described in Fischer et al (2013) and the comparison between the Czech Republic and Slovakia was discussed in Sixta et al (2013). These two papers represent methodical background for the reconstruction of the historical time series of the main indicators of economy. As expenditures represent important part of the economy this paper focuses only on

the expenditure side of the estimation. The contribution describes the methodology and brings some results of the estimation of historical time series of the total consumption expenditures with the emphasis on household expenditures.

2. Methodology

Household consumption covers paid and unpaid products and services. In the national accounts, household consumption is divided into final consumption expenditures and actual final consumption. The only differences between final consumption expenditures and actual final consumption represent the transmission of goods and services from general government and nonprofit institutions towards the households.

According to ESA 1995 household final consumption expenditures comprise the value of goods and services (short run and long run) which are bought or produced by households. Besides this it covers goods and services which are not paid for by households immediately. They will pay for them eventually in the future. Imputed rents represent one of the examples.

In the first place, household consumption expenditures are published in a national concept. It means that the expenditures cover consumption of residents in the Czech Republic and purchase of Czech residents abroad. The compilation of the household consumption expenditures combines many data sources and model estimations into one aggregate which is finally balanced in the supply and use tables. We could not use the same procedure in the reconstruction of historical time series. One of the key reasons is the lack of data.

The compilation based on the CZ-COICOP classification (Classification of Individual Consumption by Purpose) depends on the decomposition of the known total amount by categories: personal consumption of inhabitants published in the Balances of National Economy, imputed rents, financial services, market services of non-productive sphere, transport and communication, other adjustments.

Firstly, we had to divide the purchase of known and unknown goods to recalculate personal consumption. Input-output tables for years 1973, 1987 and 1990 gained from the Czech Statistical Office represented the baseline for the calculation. These tables showed us rough view on the consumption based on product classification. Other data was taken over from the statistical yearbooks. We had to adjust the estimation according to the inflation and so on. When we prepared the table of personal consumption by product classification CZ-CPA (Table 1) we were able to convert the product classification into COICOP classification (Table 2). We demonstrate this calculation on the example of the year 1985.

Table 1. Personal consumption, CZ-CPA, 1985, mil CZK

CZ-CPA	Personal consumption
A Agriculture, forestry and fishing	15 937
B Mining and quarrying	2 223
C10_C12 Food, beverages and tobacco	94 404
C13_C14 Textiles and wearing apparel	21 592
C15 Leather and related products	5 810
C16 Wood and products of wood	6 235
C17_C18 Paper and paper products, printing and recording services	2 828
C19_C22 Coke and refined petroleum products, chemicals, pharmaceutical products	14 865
C23 Other non-metallic mineral products	669
C24_C25 basic metals and fabricated metal products	1 267
C26_C27 Computers and electrical equipment	7 295
C28_C30 Machinery and other equipment	9 014
C_Ost Other machinery	9 043
D_E Electricity, gas, steam, water and sewerage	7 363
F Constructions	699
G Wholesale and retail trade	5 012
TOTAL	204 256

Source: Authors' calculations.

Table 2. Personal consumption, CZ-COICOP, 1985, mil CZK

	Personal consumption	Imputed rents	Financial services	Transport and Communication	
1000 Food and non-alcoholic beverages	81 059	0	0	0	
2000 Alcoholic beverages, tobacco	27 121	0	0	0	
3000 Clothing and footwear	22 899	0	0	0	
4000 Rents, housing, water, electricity, gas	13 140	18 175	0	0	
5000 Furnishings, household equipment	17 559	0	0	0	
6000 Health	60	0	0	0	
7000 Transport	18 703	0	0	7 837	
8000 Communication	1 842	0	0	0	
9000 Recreational, cultural and sport services	13 428	0	0	0	
10000 Education	0	0	0	0	
11000 Restaurants, cafes and hotels	4 281	0	0	0	
12000 Miscellaneous goods and services	4 165	0	2 090	0	
TOTAL	204 256	18 175	2 090	7 837	
	Non-productive market services	Other adjustments	First convert	Transfer's revision	Final household expenditures
1000 Food and non-alcoholic beverages	0	0	81 059	0	81 059
2000 Alcoholic beverages, tobacco	0	0	27 121	0	27 121
3000 Clothing and footwear	419	0	22 899	-2 186	20 713
4000 Rents, housing, water, electricity, gas	10 954	0	31 315	1 776	33 091
5000 Furnishings, household equipment	671	0	17 559	-893	16 667
6000 Health	1 291	0	60	-647	-587
7000 Transport	31	0	26 539	2 759	29 298
8000 Communication	55	0	1 842	1 445	3 286
9000 Recreational, cultural and sport services	4 001	0	13 428	3 155	16 583
10000 Education	4 145	0	0	-3 298	-3 298
11000 Restaurants, cafes and hotels	0	0	4 281	7 549	11 830
12000 Miscellaneous goods and services	4 559	13 341	6 254	-10 303	-4 048
TOTAL	26 125	13 341	232 357	-643	231 714

Source: Authors' calculations.

3. The development of the consumption expenditures

Consumption expenditures take approximately two thirds of GDP. As Figure 1 shows, household final consumption expenditures represent the most significant part of consumption expenditures. From the longtime perspective, the portion of household expenditures clearly varies in the period between the years 1970 and 2012. It is caused by the different orientation of economy in the socialist period. The system was focused on the total employment with respect to a low rate of average wage. This fact implied that people had enough money for their individual consumption of domestic goods and services with relation to the minimal import.

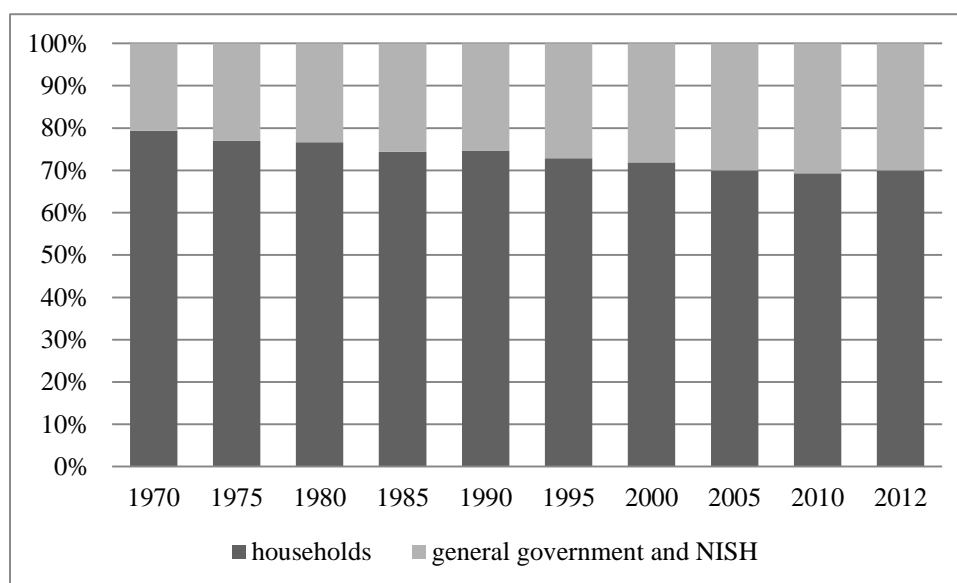


Figure 1. Structure of consumption expenditures, %

Source: Authors' calculations.

Note: NISH represents Nonprofit Institutions Serving Households

Household consumption expenditures differ during the time. For the evaluation of consumer behavior we can use only 12 digit CZ-COICOP classification. This basic allocation allows us to describe the main socio-economic trends between the years 1970 and 2012. Figure 2 shows the significant decrease of the food and non-alcoholic beverages consumption in the period. While they represented 33% from the total household consumption expenditures during the 1970s and 1980s, in the 90s it was only 20% and these days the food and non-alcoholic beverages expenditures represent only 15%. This decrease can relate to overall changes in household behavior. Households transferred their expenditures from food towards services. The development of rent expenditures presents an opposite trend. In 1970 the rent expenditures represented 14% of total household expenditures and at the beginning of 21st century it reached approximately 28%. The service expenditures significantly increased during the period in question. We consider COICOP 7 to 12 as services, namely Transport, Communication, Recreational, cultural and sport services, Education, Restaurants, cafes and hotels, Miscellaneous goods and services. While in 1970 the service expenditures achieved 26% of total household expenditures, in 1990 it was 32%. In 2012 these expenditures

represent 36% of household expenditures. The main share is created by transport expenditures that comprised 33% of service expenditures in 1970 and 26% in the year 2012. A significant part of service expenditures is created by expenditures on recreation (28% in 1970, 26% in 2012).

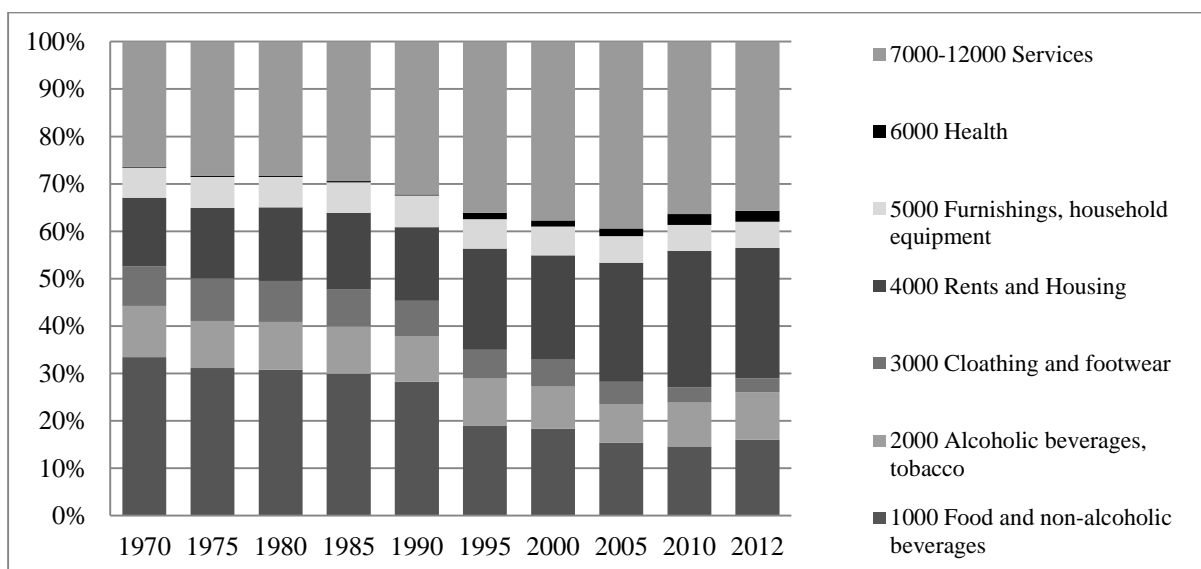


Figure 2. Structure of household consumption expenditures, %
 Source: Authors' calculations.

4. Conclusion

Final consumption expenditures represent one of the most important parts of economy. Households comprise the main portion of all expenditures. This is the reason why reconstruction of historical time series of (not only) household consumption expenditures based on ESA 1995 constitutes a demanded issue. This paper briefly described the methodology of the reconstruction of historical time series and demonstrated results of the calculation. Results showed that the household consumption behavior changed significantly during last decades. The proportion of food and non-alcoholic beverages on total household expenditures decreased significantly (from 33% in 1970 to 15% in 2012). On the other hand the proportion of services increased rapidly in the period in question (from 26% in 1970s to 36% in 2012).

As long time series of indicators are demanded a lot by economic experts as well as by academic researchers, the team from the University of Economics in Prague will continue their activities in this field of study for example by constructing historical time series of income approach to GDP. The ESA 2010 will be implemented by the Czech Statistical Office. Therefore the Czech national accounts for the period between the years 1990 to 2013 based on ESA 2010 will be officially published by the end of September 2014. We will recalculate the historical time series according to ESA 2010 during 2015.

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