

COUNTRY REPORT: FINLAND (FI)

1. DESCRIPTION OF THE INDIRECT TAX SYSTEM

This section describes the indirect tax system for Finland. First we explain the value added tax rates, which goods and services they apply on, and which exemptions there are to the standard rates. We then summarize excises for each product category. Finally we list the other notable indirect taxes besides VAT and excises.

1.1 Value Added Tax

Finland has a total of three VAT rates: a standard rate and two reduced rates. The most recent adjustment to the rates was done in the beginning of 2013. The progression of Finnish VAT rates is presented in Table 1.

Table 1: Overview of changes in VAT rates (1998-2016)

	1998	2009	2010	2013
	Jan	Oct	Jul	Jan
Standard rate	22	22	23	24
First reduced rate	17	12	13	14
Second reduced rate	8	8	9	10

Source: Legislation on VAT (30.12.1993/1501)

The VAT rates apply to specific product categories, which are listed in Table 2. The only major change in the product categories during the period 2011-2016 was in January 2012 when the subscription of newspapers and periodicals went from being exempt from VAT to being taxed at the second reduced rate.

Table 2: Overview of reduced VAT product categories (2011)

Standard rate	Alcohol is taxed at the standard rate.
First reduced rate	Foodstuff (food and non-alcoholic beverages) and animal feed; restaurant and catering services.
Second reduced rate	Books; pharmaceutical products (medicines); use of sporting facilities; passenger transportation; accommodation and the right to use a harbour; TV licence fees; admission to cultural services (shows, cinema, theatre) and amusement parks; supply and import of works of art in certain situations; remuneration relating to a copyright where received by an organization representing the copyright owners.
Exempted	Subscriptions of newspapers and periodicals; health care and dental care; services relating to social security; education (including primary education, high school, university education and vocational education); finance and insurance services; lotteries and gambling; compensation for performing artists; sale of real estate and building land; public funeral services.

Source: Finnish Tax Administration

Note: The VAT concerning Package holidays is calculated from the VAT free profit share that the travel agency gets from buying the services from another party. For example: The agency buys the flights, hotels etc. (the package holiday) for 700 euros and sells it with 1000 euros. The VAT in this case is calculated by:

$1000 - 700 = 300$ euros (the profit)

The taxable share is calculated by $300 - (300 \times 24 : 124) = 300 - 58,0645 = 241,9355$ euros.

The final VAT is $241,9355 \text{ euros} \times 24\% = 58,06$ euros making the VAT 19,4 %.

The importance of VAT as a revenue source is illustrated in Table 3. VAT makes up over a third of the total revenue of the central government (the State). Examining VAT revenue on the general government level we can see that it accounts for roughly a sixth of total revenue. The Finnish general government sector includes the State, municipalities and intermunicipal authorities, the regional government of the Åland Islands, and social security funds.

Table 3: VAT revenue 2010-2015

	2010	2011	2012	2013	2014	2015
% of Central government total revenue	36.1	36.2	36.8	37.4	37.2	36.4
% of General government total revenue	15.9	16.5	16.7	16.9	16.8	16.5
% of GDP	8.3	8.8	9.0	9.3	9.2	9.2

Source: Statistics Finland / National accounts

1.2 Excise duties and prices

In addition to VAT, separate excises are levied on alcoholic beverages, tobacco products and energy products.

1.2.1 Alcoholic beverages

The excises on alcoholic beverages in Finland are based on the type of drink and the percentage of alcohol. For beers and spirits the excises are based on the volume of pure alcohol contained, while for intermediaries, wine and other beverages made by fermentation they are based on the volume of the finished product. The excises are given in Table 4. The most recent adjustment was made in January 2014.

Table 4: Excises on alcoholic beverages (euro per unit, 2011-2016)

	2011	2012	2014	unit
	Jan	Jan	Jan	
<u>Beers</u>				
> 0.5% alc. and ≤ 2.8% alc.	270	400	800	hl of pa
> 2.8% alc.	2600	2990	3205	hl of pa
<u>Wine and other beverages made by fermentation</u>				
> 1.2% alc. and ≤ 2.8% alc.	7.5	11	22	hl
> 2.8% alc. and ≤ 5.5% alc.	138	159	169	hl
> 5.5% alc. and ≤ 8.0% alc.	203	224	241	hl
> 8.0% alc. and ≤ 15.0% alc.	283	312	339	hl
<u>Wine</u>				
> 15.0% alc. and ≤ 18.0% alc.	283	312	339	hl
<u>Intermediaries</u>				
> 1.2% alc. and ≤ 15.0% alc.	344	379	411	hl
> 15.0% alc. and ≤ 22.0% alc.	568	625	670	hl
<u>Ethyl alcohol (incl. spirits)</u>				
> 1.2% alc. and ≤ 2.8% alc.	270	400	800	hl of pa
> 2.8% alc.	3940	4340	4555	hl of pa
<u>Others</u>	3940	4340	4555	hl of pa

Notes: pa=pure alcohol.

Source: Legislation on alcohol excises (29.12.1994/1471)

1.2.2 Tobacco

The tobacco excises in Finland consist of two parts. Firstly, there are specific excises that are levied on cigarettes (per 1000 units) as well as smoking tobacco and fine-cut smoking tobacco (per kg). In addition to this there are ad valorem excises that are levied as a certain percentage of the retail price of cigarettes, cigars and cigarillos, smoking tobacco, fine-cut smoking tobacco, cigarette paper and other tobacco products. Lastly, it is mandated that for cigarettes and fine-cut smoking tobacco the total excise levied has to be at least a certain minimum sum determined per 1000 units or per kg, respectively. The relevant information pertaining to the Finnish tobacco excises is presented in Table 5.

Table 5: Excises on tobacco products (2011-2016)

	2011	2012	2014	2015	2016	2016
	Jan	Jan	Jan	Jan	Jan	July
<u>Specific excises</u> (€ per 1000 units, or per kg)						
<i>Cigarettes</i>	17.50	22.50	28.00	33.50	37.50	41.50
<i>Cigars and cigarillos</i>	-	-	-	-	-	-
<i>Smoking tobacco</i>	8.50	13.50	19.00	24.50	28.75	33.00
<i>Fine-cut smoking tobacco</i>	10.00	16.50	20.00	23.50	26.00	28.50
<i>Cigarette paper</i>	-	-	-	-	-	-
<i>Other tobacco products</i>	-	-	-	-	-	-
<u>Ad valorem excises</u> (% of retail price)						
<i>Cigarettes</i>	52	52	52	52	52	52
<i>Cigars and cigarillos</i>	25	27	29	30	31	32
<i>Smoking tobacco</i>	48	48	48	48	48	48
<i>Fine-cut smoking tobacco</i>	52	52	52	52	52	52
<i>Cigarette paper</i>	60	60	60	60	60	60
<i>Other tobacco products</i>	60	60	60	60	60	60
<u>Minimum excises</u> (€ per 1000 units, or per kg)						
<i>Cigarettes</i>	131.50	146.00	161.50	177.00	188.50	200.00
<i>Fine-cut smoking tobacco</i>	68.50	87.50	97.50	107.50	114.50	121.50

Source: Legislation on tobacco excises (29.12.1994/1470)

1.2.3 Energy products

Energy excises are levied on liquid fuels, electricity, coal and coke, natural gas, tall oil and fuel peat. Liquefied petroleum gas was excise-free until the beginning of the year 2016. The excise taxation of electricity has been graded into two categories. Electricity used in industry or server rooms is subject to the lower (II) tax category. Excise duty of the higher (I) tax category must be paid on all other use of electricity. Therefore, excise duty of the higher (I) tax category is collected on electricity used by private households as well as agriculture, forestry, construction, public administration and service functions.

The excises levied on liquid fuels, coal and coke and natural gas are the sums of three components: an energy content tax, a carbon dioxide tax and a strategic stockpile fee. Similarly, the excises levied on electricity, tall oil and fuel peat are the sums of an excise duty on energy and a strategic stockpile fee. The excises presented in Table 6 are the total excises levied on the respective products.

The complete list of different liquid fuels that are subject to excises is quite long. For Table 6 we have picked the products that are relevant as consumer products.

Table 6: Excises on energy products (euro per unit, 2011-2016)

	2011	2012	2013	2014	2015	2016	unit
	Jan	Jan	Jan	Jan	Jan	Jan	
<u>Petrol</u>	62.70	65.04	65.04	67.29	68.13	68.13	100 liter
<u>Diesel</u>	36.40	46.95	46.95	49.66	50.61	50.61	100 liter
<u>Light fuel oil, Sulphur-free</u>	16.05	16.05	16.34	16.34	18.74	21.40	100 liter
<u>Liquefied Petroleum Gas</u>	0	0	0	0	0	24.30	100 kg
<u>Natural Gas</u>	9.024	9.024	11.464	11.464	15.444	17.424	MWh
<u>Coal and coke</u>	128.10	128.10	132.71	132.71	154.42	178.54	1000 kg
<u>Electricity</u>							
- tax category I	17.03	17.03	17.03	19.03	22.53	22.53	MWh
- tax category II	7.03	7.03	7.03	7.03	7.03	7.03	MWh
<u>Electricity district heat</u>	5.79	5.79	5.79	5.79	5.79	5.79	MWh
<u>Tall oil</u>	18.79	18.79	19.21	19.21	22.12	25.36	100 kg
<u>Fuel peat</u>	1.90	1.90	4.90	4.90	3.40	1.90	MWh

Source: Legislation on energy excises (29.12.1994/1472 and 30.12.1996/1260)

1.2.4 Product and sector specific charges

In addition to the excises described above, there is also an excise levied on sweets, ice cream, soft drinks, juice and water. This excise is levied on all such products whether they contain sugar or not, although for drinks the excise for sugar-free products is smaller starting from the year 2014. The Finnish HBS

There is also an excise duty on certain beverage containers that is levied on those beverage containers that are not a part of the deposit-based return system for beverage container recycling. In most cases joining the recycling system is cheaper for the beverage company than having their products subjected to the excise, so the vast majority of beverage containers are exempt from the excise and its fiscal significance is very low. We therefore suggest not taking it into account when simulating Finnish excises.

Table 7: Other excises (euro per unit, 2011-2016)

	2011	2012	2014	2016	unit
	Jan	Jan	Jan	Jan	
<u>Excise duty on sweets, ice cream and soft drinks</u>					
<i>Sweets and ice cream</i>	750	950	950	950	1000 kg
<i>Soft drinks, juice and water (with sugar)</i>	7.50	11.00	22.00	22.00	hl
<i>Soft drinks, juice and water (without sugar)</i>	7.50	11.00	11.00	11.00	hl
<u>Excise duty on certain beverage containers</u>	51	51	51	51	hl of packaged product

Source: Legislation on the various excises (17.12.2010/1127 and 3.12.2004/1037)

1.2.5 Tax revenue from excise duties

Table 8 shows the importance of the different excises as revenue sources. For the distinction between central and general government revenue see the description for Table 3 on page 2. The strategic stockpile fee is not included in the values for the excises on energy and can be found as a separate item from Table 10.

Table 8: Proceeds from excise duties (2010 -2015)

		2010	2011	2012	2013	2014	2015
% of central gov. revenue	Alcohol excise	2.97	2.70	2.81	2.68	2.71	2.59
	Tobacco excise	1.52	1.50	1.53	1.69	1.55	1.69
	Excises on energy	7.36	8.11	8.10	7.78	7.56	7.81
	Excise on sweets, ice cream and soft drinks	0.09	0.28	0.40	0.40	0.50	0.48
	Excise duty on certain beverage containers	0.03	0.03	0.03	0.03	0.03	0.03
% of general gov. revenue	Alcohol excise	1.31	1.23	1.27	1.21	1.23	1.18
	Tobacco excise	0.67	0.68	0.69	0.76	0.70	0.77
	Excises on energy	3.25	3.69	3.67	3.52	3.41	3.55
	Excise on sweets, ice cream and soft drinks	0.04	0.13	0.18	0.18	0.23	0.22
	Excise duty on certain beverage containers	0.01	0.01	0.01	0.01	0.01	0.01
% of GDP	Alcohol excise	0.68	0.66	0.69	0.67	0.67	0.65
	Tobacco excise	0.35	0.36	0.37	0.42	0.38	0.43
	Excises on energy	1.69	1.97	1.98	1.93	1.87	1.97
	Excise on sweets, ice cream and soft drinks	0.02	0.07	0.10	0.10	0.13	0.12
	Excise duty on certain beverage containers	0.01	0.01	0.01	0.01	0.01	0.01

Source: Statistics Finland / National Accounts

1.2.6 Prices

Table 9 lists consumer prices for certain items subject to excises. The price information for foodstuffs, electricity, diesel, gasoline, light fuel oil and tobacco products comes from Statistics Finland's Consumer price index. For foodstuffs the price information is available only for certain products, but the prices should give some indication of the average prices in the HBS categories subject to the excise on sweets, ice cream and soft drinks.

Table 9: Average consumer prices of items subject to excises (euro per unit, 2011-2015)

	2011	2012	2013	2014	2015	2016*	unit
Block of chocolate ¹	1.99	2.12	2.18	2.22	2.31	2.35	200 g
Chocolate bar ¹	0.57	0.61	0.65	0.66	0.69	0.70	44 g
Sweets in bulk ¹	8.20	8.75	9.14	9.24	9.06	8.77	1 kg
Bag of sweets ¹	2.12	2.32	2.42	2.43	2.39	2.39	220 g
Xylitol chewing gum ¹	2.71	2.88	2.91	2.85	2.84	2.85	110 g
Packet of ice cream ¹	2.11	2.38	2.44	2.51	2.50	2.46	1 l (500 g)
Ice cream cone ¹	0.73	0.79	0.82	0.83	0.84	0.86	70 g
Mineral water ¹	1.69	1.84	1.89	1.94	1.87	1.82	1.5 l
Soft drink ¹	2.02	2.11	2.15	2.36	2.32	2.29	1.5 l
Soft drink, sugar free ¹				2.09	2.02	2.00	1.5 l
Orange juice ¹	1.06	1.19	1.23	1.40	1.40	1.32	1 l
Juice drink ¹	0.98	1.08	1.08	1.25	1.22	1.20	1 l
Mixed fruit squash ¹	2.90	3.33					1 l
Spirits ²	26.14	27.81	28.19	29.11	29.27		liter
Ciders ²	5.15	5.54	5.56	5.68	5.55		liter
Wines ²	10.54	10.97	11.25	11.68	11.87		liter
Long drinks and other light drink mixes ²	5.80	6.22	6.35	6.44	6.47		liter
Light beer ^{**}	3.75	4.07	4.07	4.18	4.10		liter
Medium-strength beer ²	3.75	4.07	4.07	4.18	4.10		liter
Strong beer ²	5.79	6.25	6.56	6.91	7.13		liter
Beer in a restaurant ²	11.55	12.66	13.27	13.64	13.96		liter
Other alcoholic beverages in a restaurant ²	32.23	34.96	34.73	34.61	36.14		liter
Cigarettes ¹	4.58	4.86	5.09	5.35	5.71	5.80	20 pcs
Cigars ¹	5.10	5.48	5.64	6.02	6.25	6.53	10 pcs
Fine-cut smoking tobacco ¹	3.70	4.14	4.44	4.70	5.06	5.32	30 g
Electricity ¹	0.15	0.14	0.15	0.15	0.15	0.15	kWh
Diesel ¹	1.37	1.55	1.52	1.48	1.30	1.18	liter
Gasoline, 95E10 ¹	1.56	1.67	1.64	1.61	1.46	1.40	liter
Light fuel oil ¹	1.07	1.13	1.11	1.02	0.86	0.80	liter
District heat ^{3***}	71,73	74,34	80,23	82,98	84,35	84,09	MWh

Note: * = the numbers for 2016 are for May 2016, numbers for other years are yearly averages.

** = assume same price as for Medium-strength beer.

***=the numbers are for January for one-family house

Source: 1 = Statistics Finland / Consumer Price Index, 2 = National Institute for Health and Welfare Finland, Energy prices, 3 = Statistics Finland

1.3 Other indirect taxes

Besides VAT and excises, the government raises important revenues through different indirect tax instruments presented in Table 10. Out of these, the biggest revenue source is the motor vehicle tax, for which the Finnish HBS has a separate consumption category: A1291106.

The tax on insurance premiums is a separate tax, but its percentage has historically been equal to the Finnish VAT percentage (eg. 23% during 2011).

When acquiring real estate, a transfer tax proportional to the value of the property has to be paid. If the buyer is between 18 and 39 years old and is buying their first dwelling, they are exempted from the tax. This tax corresponds to the HBS category A1291101.

In Finland there are government sanctioned monopolies on gambling. The gambling companies (mainly Veikkaus and RAY) are obligated to give a share of their profits to certain causes funded through the government. From the standpoint of a consumer this sharing of profits can be equated to an indirect tax. There is also a tax on lottery prizes.

Pharmacies are subject to a progressive pharmacy levy paid from the pharmacy's yearly revenue.

While the strategic stockpile fee on energy is not technically an excise according to national accounts, it is included in the total energy excises presented in Table 6. In the national accounts revenue tables it is listed as an indirect tax, so it is not included in the energy excises presented in Table 8. It can be found as a separate item in Table 10.

The registration of a vehicle is also subject to a tax that is included in the HBS category A0724109.

The oil damage duty is levied on all oil which is imported into or transported through Finland.

The fiscal significance of the smallest indirect taxes is minimal so they won't be separately covered.

Table 10: Revenue from other indirect taxes (2011)

Tax	million €	% of central gov. revenue	% of general gov. revenue
Motor vehicle tax	1068	2.23	1.02
Tax on insurance premiums	626	1.31	0.60
Transfer tax	544	1.14	0.52
Central governments share of Oy Veikkaus Ab's and money-lotteries' profit	516	1.08	0.49
Revenue from RAY (The Finnish Slot Machine Assosiation)	367	0.77	0.35
Tax on lottery prizes	172	0.36	0.16
Pharmacy levy	144	0.30	0.14
Strategic stockpile fee on energy	46	0.10	0.04
Vehicle registration tax	41	0.09	0.04
Oil damage duty	24	0.05	0.02
Rail tax	18	0.04	0.02
Tax on fire insurance	9	0.02	0.01
Oil waste duty	4	0.01	0.00
Penalties for late payment of taxes	3	0.01	0.00
Other taxes	2	0.00	0.00

Source: Statistics Finland / National accounts

2. DATA

2.1 Description of HBS

The 2012 Finnish Household Budget Survey used the population information system of the Population Register Centre as a sampling frame. The sampling frame was divided in 10 strata according to 5 major regions (Helsinki-Uusimaa, Southern Finland, Western Finland, Northern and Eastern Finland, Åland) and statistical grouping of municipalities. The capital region formed its own stratum. A sample of 8024 target persons, aged at least 15, was then drawn by stratified systematic sampling. The sample was allocated proportionally into strata. Dwelling units were constructed by adding to the sample all persons sharing the same domicile code as the target persons. A supplementary sample of 400 target persons was drawn from Åland.

The target population consists of members of private households permanently resident in Finland. Persons living permanently abroad, as well as persons without a permanent place of residence and persons living in institutions such as old-age homes or hospitals do not belong to the target population.

2.2 Sample descriptives

The data were collected by telephone interviews, purchase receipts and diaries kept by households, and from administrative registers. Information was collected with interviews about the household's background data, its ownership and purchasing of durable goods, residential costs etc. After the interview, the households kept a diary about their consumption expenditure and retained receipts on their purchases for a fortnight. The data on education and income were derived from registers.

During the fieldwork, 186 households were found to belong to overcoverage. The net sample thus consists of 8238 households. In household budget survey, nonresponse may occur in two phases:

first, in the interview phase and second, in the diary keeping phase. Table 11 shows the structure of nonresponse in the net sample.

Table 11 Structure of non-response in the net sample.

	N	%
Net sample	8238	100
Interviewed	3551	43
Nonresponse	4687	57
-Interview nonresponse	4283	52
-Diary nonresponse	404	5

Various checks were conducted to the data collected by interviews, diaries and receipts. These checks included logical and extreme value checks. Item nonresponse in consumption expenditure was adjusted for by donor imputation using Banff software. Less than two percent of consumption expenditure figures were imputed. Administrative register data was used to adjust for item nonresponse in certain variables related to housing and health care services.

Final survey weights were constructed by a procedure involving three phases. First, the design weights were calculated as inverses of households' inclusion probabilities. The inclusion probability of a household depends on the household's stratum and on the number of household members aged 15 or over. Second, a preliminary adjustment for unit nonresponse was conducted. This involved multiplying the design weights by inverses of response probabilities in each stratum. These adjusted design weights were used as starting weights in the third phase, which involved calibration of weights. In calibration, the starting weights were modified so that the sample of successfully interviewed households was to have the same structure as the population for the following variables:

- region (NUTS3, capital region separately)
- size of dwelling unit
- reference person's socio-economic status
- reference person's level of education
- distribution of persons by age and sex
- capital income
- earned income.

SAS macro Calmar2 was used to calibrate the weights.

The data set includes successfully interviewed households (n=3551) and their members (n=8436). The data includes one row per person. Expenditure items are assigned to the reference person. The variable names and definitions correspond to Eurostat Doc. HBS/153E/2012/EN.

The expenditure items follow the COICOP-HBS classification (4 levels with 5-digit codes).

Table 12 presents the HBS sample descriptives for the year 2012 that is used in the current project. In total the survey contains information from 3,551 households consisting of 8,436 individuals. The median household has 2 members and less than one child under the age of 18. Mean household income is 50,024 euros per year with the median being 45,050.

Table 12 HBS 2012 sample descriptives

Individuals	8,436
Mean age	41.8
Share of men	49.8%
Primary or Secondary education or less	72.51%
Higher education	27.49%
Employed	41.9%
Unemployed	3.44%
Retired	24.54%
HH heads⁽¹⁾	
Mean age	53.0
Share of men	62.7%
Primary or secondary education or less	61.2%
Higher education	38.8%
Employed	59.8%
Unemployed	3.13%
Retired	32.5%
Households	3,551
Household size, mean	2.4
Household size, median	2
Number of children, mean	0.49
Share of households living in the city	62.7%
Household net income yearly, mean	50,024.33
Household net income yearly, median	45,050.24

Note: variables presented in the table are self-reported.

(1) Head of household is defined as the household member with highest personal income (MB05=1,)

Source: Authors' calculations from FI HBS 2012

Table 13 reports HBS unequivalised mean household disposable income, total expenditure and details on expenditures on durables and non-durables (for each of the 15 expenditure category) by income decile as observed from HBS. In Finland, on average monthly spending on food and non-alcoholic beverages almost equals monthly spending on durables. This is followed by spending on housing and rents, public transports and other goods and services. However, when looking at how spending patterns change by income distribution, it is clear that share of expenditure on food and non-alcoholic beverages declines with income, as well as the share of expenditure on home fuels, electricity and water and housing and rents (Table 14). On the other hand, the share of expenditure on private transport and restaurant, hotels and holidays in the first decile is almost half that of the top decile groups.

Table 13 Mean (unequalised) household expenditure by income decile and expenditure category, HBS (2012)

Category	Label	Income decile group										All
		1	2	3	4	5	6	7	8	9	10	
	Household disposable income	1074.8	1550.24	2017.06	2560.20	2991.27	3535.45	4009.43	4238.84	5335.27	7707.06	3500.76
	Total household expenditures	1239.9	1399.1	1663.5	2073.4	2192.1	2525.3	2832.7	2819.9	3525.7	4221.5	2448.8
1	Food and non-alcoholic beverages	208.05	240.68	303.64	359.98	377.95	403.86	444.18	423.38	508.84	510.60	378.06
2	Alcoholic beverages	25.36	30.48	30.69	32.06	46.42	40.76	62.18	53.21	77.91	80.97	47.99
3	Tobacco	18.17	16.15	14.24	17.48	23.20	25.33	23.20	15.90	17.07	10.82	18.16
4	Clothing and footwear	42.82	43.15	61.20	89.07	76.47	98.74	95.25	107.05	163.01	203.32	97.99
5	Home fuels, electricity and water	51.01	68.77	90.84	115.90	126.04	131.35	144.53	133.58	175.90	215.05	125.27
6	Housing and rents	325.30	345.90	280.23	254.96	239.11	223.06	233.88	199.90	235.14	215.67	255.32
7	Household goods and services	9.42	13.50	15.94	20.68	24.75	25.48	28.36	26.78	37.05	44.50	24.64
8	Health	46.22	64.93	78.89	110.13	90.74	94.66	90.51	91.17	129.67	144.63	94.14
9	Private transport	81.54	95.17	134.36	208.52	202.66	276.11	337.30	332.51	421.50	430.17	251.92
10	Public Transport	31.55	24.17	28.19	25.95	35.62	42.09	50.83	44.23	92.16	139.04	51.37
11	Communication	48.26	53.96	60.67	71.13	80.90	84.40	90.31	78.48	91.14	93.40	75.26
12	Recreation and culture	87.65	97.83	136.54	177.62	216.92	234.04	257.93	277.14	342.10	380.34	220.76
13	Education	5.74	5.05	4.90	6.45	5.57	6.27	5.37	6.91	6.62	7.66	6.05
14	Restaurants and hotels	52.65	66.69	75.73	115.57	119.06	160.24	212.98	214.17	256.84	357.10	163.05
15	Other goods and services	103.46	105.94	131.44	221.35	219.24	256.03	309.97	328.68	375.73	457.51	250.88
98	Durable goods	102.64	126.76	216.04	246.57	307.44	422.85	445.90	486.79	595.04	930.71	387.94

Source: Authors' calculations from FI HBS 2012

Table 14 Structure of (unequalised) household expenditure by income decile and expenditure category, %, HBS (2012)

	Income decile group										All
	1	2	3	4	5	6	7	8	9	10	
Food and non-alcoholic beverages	18.29	18.92	20.98	19.71	20.05	19.21	18.61	18.15	17.36	15.52	18.34
Alcoholic beverages	2.23	2.40	2.12	1.75	2.46	1.94	2.61	2.28	2.66	2.46	2.33
Tobacco	1.60	1.27	0.98	0.96	1.23	1.20	0.97	0.68	0.58	0.33	0.88
Clothing and footwear	3.77	3.39	4.23	4.88	4.06	4.70	3.99	4.59	5.56	6.18	4.75
Home fuels, electricity and water	4.49	5.41	6.28	6.34	6.69	6.25	6.06	5.73	6.00	6.54	6.08
Housing and rents	28.61	27.19	19.36	13.96	12.69	10.61	9.80	8.57	8.02	6.55	12.39
Household goods and services	0.83	1.06	1.10	1.13	1.31	1.21	1.19	1.15	1.26	1.35	1.20
Health	4.06	5.10	5.45	6.03	4.81	4.50	3.79	3.91	4.42	4.39	4.57
Private transport	7.17	7.48	9.28	11.41	10.75	13.13	14.13	14.25	14.38	13.07	12.22
Public Transport	2.77	1.90	1.95	1.42	1.89	2.00	2.13	1.90	3.14	4.23	2.49
Communication	4.24	4.24	4.19	3.89	4.29	4.01	3.78	3.36	3.11	2.84	3.65
Recreation and culture	7.71	7.69	9.43	9.72	11.51	11.13	10.81	11.88	11.67	11.56	10.71
Education	0.50	0.40	0.34	0.35	0.30	0.30	0.22	0.30	0.23	0.23	0.29
Restaurants and hotels	4.63	5.24	5.23	6.33	6.32	7.62	8.92	9.18	8.76	10.85	7.91
Other goods and services	9.10	8.33	9.08	12.12	11.63	12.18	12.99	14.09	12.82	13.90	12.17
Durable goods	8.28	9.06	12.99	11.89	14.03	16.74	15.74	17.26	16.88	22.05	15.84

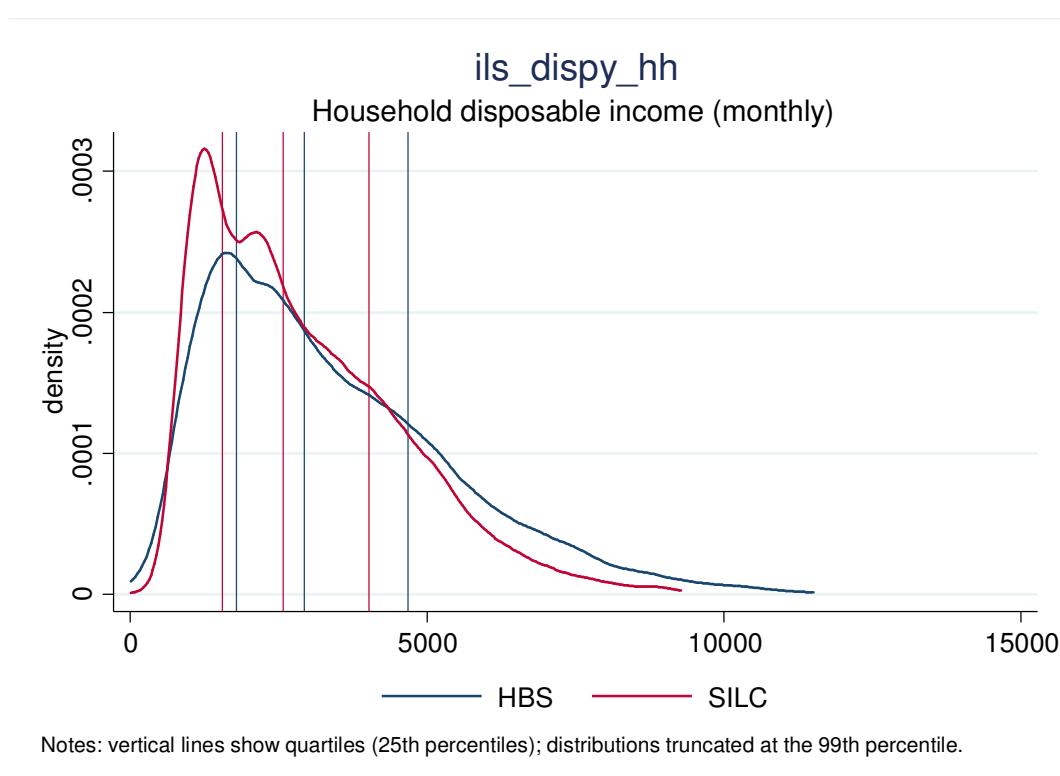
Source: Authors' calculations from FI HBS 2012

2.3 Comparison of variable distributions in HBS and EUROMOD input data

To get unbiased imputations of household expenditure in SILC data, it is crucial that control variables that are used in regressions that are run on HBS data, have similar distributions in EM-SILC. This subsection gives an overview of the comparability of FI HBS and the EUROMOD input data for Finland.

Figure 1 shows that household disposable income follows a very similar pattern in HBS and EUROMOD/SILC data. While SILC data¹ has slightly higher density of incomes around the 25th percentile, the overall differences are quite small and the match between the two datasets can be considered to be good.

Figure 1 Household disposable income, HBS vs SILC



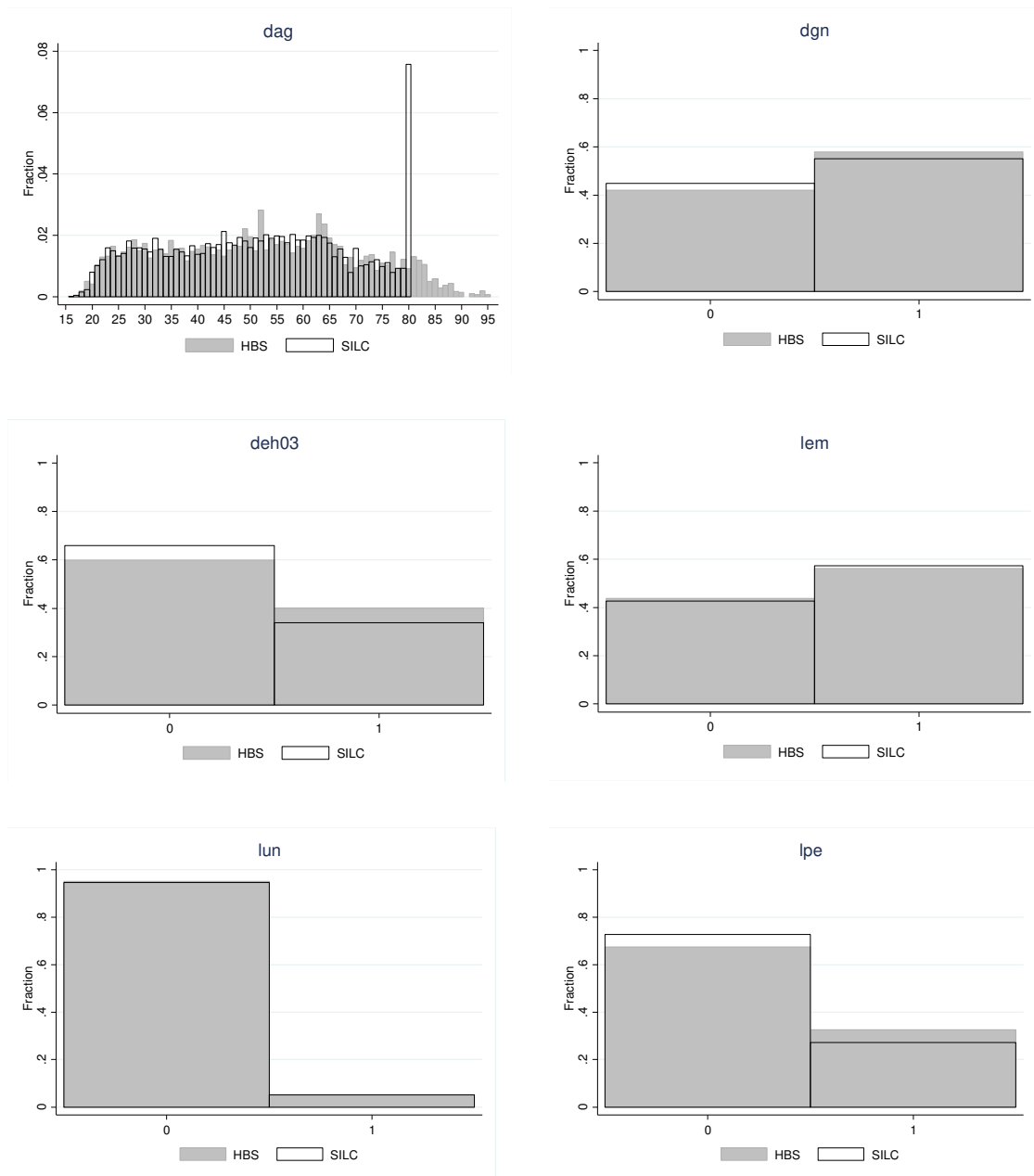
In general, other variables used for imputing expenditures between HBS and EUROMOD/SILC match well (see Figure 2). Some differences can be noticed in coding of variable age (*dag*) which in SILC is top coded at 80 years old. One variable that requires some attention is education (*deh01-deh03*). In HB Finland it is not possible to distinguish properly primary or less (*deh01*) from secondary (*deh02*) education. Therefore, we distinguish only between higher education (*deh03*) and anything else. As shown by Figure 2 the differences are not substantial and should not mislead imputation of expenditures.

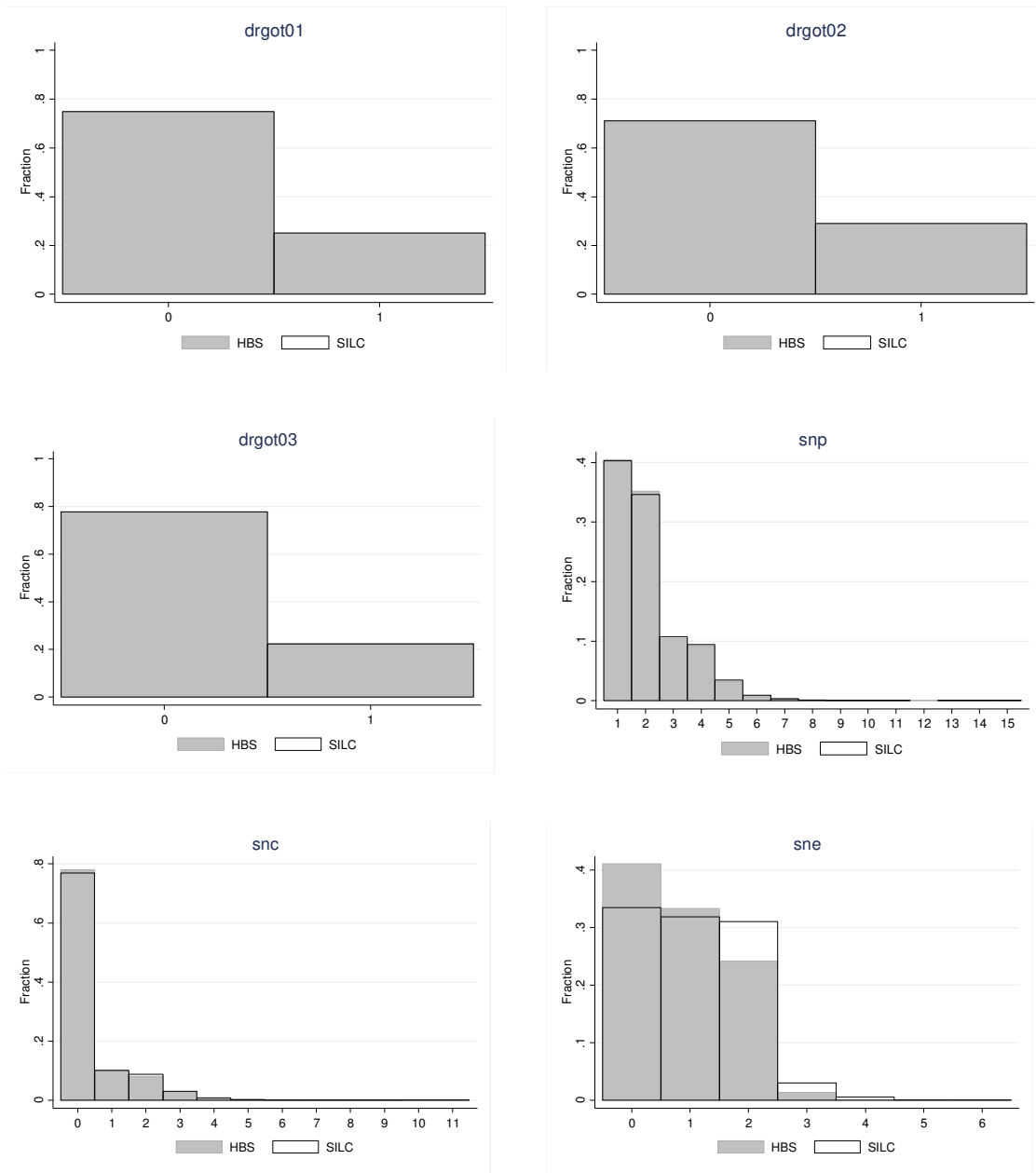
A second variable where there are noticeable differences across datasets is the number of earners in the household (*sne*), which from HBS is defined from variable HB0761 “number of persons age 16-64 in household who are in work” and in EUROMOD-SILC is define as “number of persons age 16-64 in household who report positive earnings from work (*ils_earns*)”.

¹ From hereafter the term SILC data is used to indicate the EUROMOD input data that is based on the SILC data.

In other cases there are almost no differences between datasets and overall one can conclude that there is a very good match between HBS and SILC data.

Figure 2 Distribution of selected covariates in HBS (2012) and EUROMOD (2012 simulation)





Source: Authors' calculations from FI HBS 2012 and SILC 2012.

3. VALIDATION OF ESTIMATED DEMAND SYSTEM AND EXPENDITURES IMPUTED INTO EUROMOD

Next we look at how actual and imputed expenditure data compares across sources.

Table 15 shows mean levels of total expenditure categories observed and predicted in HBS (2012), expenditures imputed in EUROMOD and national accounts aggregates. Figure 3 and Table 16 compares observed and predicted HBS aggregated expenditures with expenditures imputed into EUROMOD-SILC and figures provided by the OECD (national accounts). Total expenditure captured by the HBS makes up to 88% of what we see from the OECD data. The lowest coverage is achieved by expenditure on alcoholic beverages, tobacco and education, which represent respectively 43.7%, 42.2% and 44.8% of OECD aggregate values.

Table 15 Total annual expenditure by category: HBS 2012 (observed and predicted), EUROMOD (2012 system simulation) and OECD national account statistics (2012), mIn EUR

Category	Observed in HBS	Predicted in HBS	Imputed in EUROMOD	OECD aggregate
Food and non-alcoholic beverages	11764.1	12555.4	12506.6	12832
Alcoholic beverages	1493.42	1487.41	1460.94	3414
Tobacco	565.02	539.15	554.64	1340
Clothing and footwear	3049.14	3036.94	3106.74	4767
Home fuels, electricity and water	3897.97	4150.26	4104.13	3796
Housing and rents	7944.88	8140.85	8749.43	6026
Household goods and services	766.67	780.12	795.72	1024
Health	2929.25	2925.61	2744.09	4426
Private transport	7839.2	7566.41	7437.93	7592
Public Transport	1598.44	1526.58	1461.82	2358
Communication	2341.75	2475.09	2588.27	2461
Recreation and culture	6869.6	7167.97	7230.21	9489
Education	188.34	193.31	194.96	420
Restaurants and hotels	5073.61	4739.16	4843.43	6588
Other goods and services	7806.64	7758.71	7725.47	9681
Durable goods	12071.69	13216.19	13299.6	10195
Total non-durables	64128.04	65042.97	65504.38	76214
Total expenditures	76199.73	78259.16	78803.98	86409

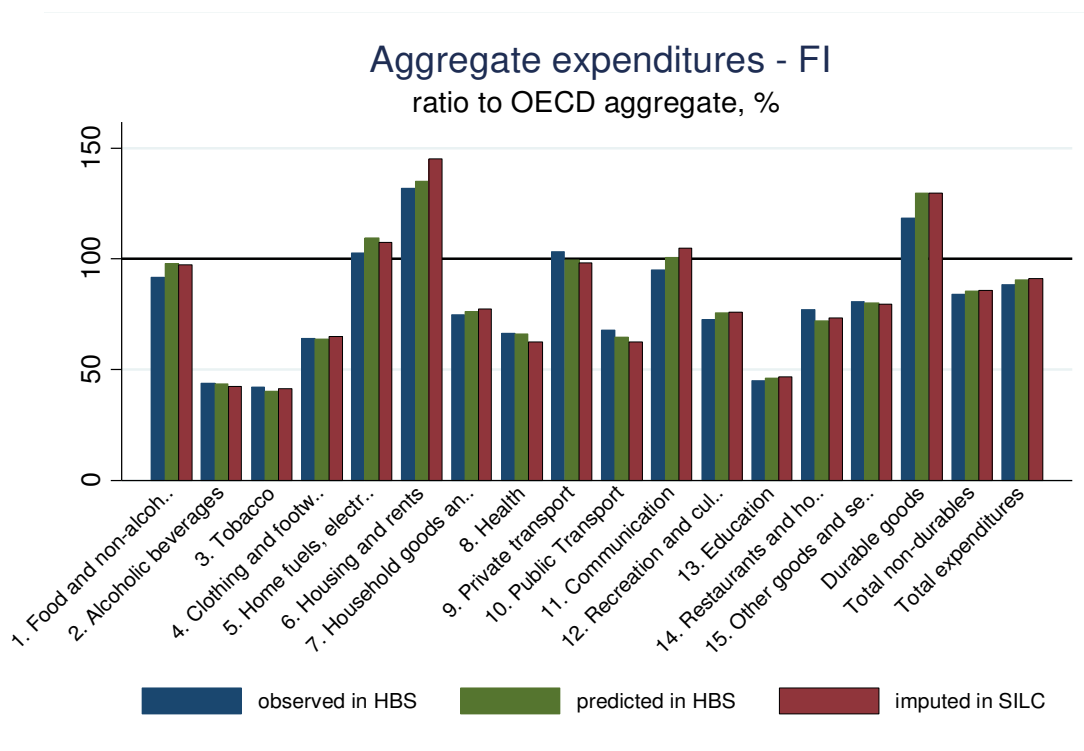
Source: authors' calculations based on EUROMOD G4.0, HBS 2012 and OECD

The match between actual and predicted HBS expenditures is very good with small overestimation of expenditures on food and non-alcoholic drinks, home fuels and electricity and durables. Imputation into EUROMOD-SILC matches quite closely the predicted HBS expenditures data. Total imputed aggregated expenditure covers slightly above 91% of OECD aggregated expenditure from National Accounts. The most important differences affect alcohol (42.8%) and tobacco (41.4%), education (46.4%) as for the HBS. Some underestimations are observable also on spending on clothing and footwear (65.2%), health (62%), public transports (62%), household goods and services (77.7%), recreation and culture (73.5%).

Table 16. Overview of HBS actual and EUROMOD-SILC imputed expenditure

	HBS		EUROMOD-SILC	
	Expenditure, mln eur	% to OECD expenditure	Expenditure, mln eur	% to OECD expenditure
Food and non-alcoholic beverages	11,764	91.7%	12,507	97.5%
Alcoholic beverages	1,493	43.7%	1,461	42.8%
Tobacco	565	42.2%	555	41.4%
Clothing and footwear	3,049	64.0%	3,107	65.2%
Home fuels, electricity and water	3,898	102.7%	4,104	108.1%
Housing and rents	7,945	131.8%	8,749	145.2%
Household goods and services	767	74.9%	796	77.7%
Health	2,929	66.2%	2,744	62.0%
Private transport	7,839	103.3%	7,438	98.0%
Public transport	1,598	67.8%	1,462	62.0%
Communication	2,342	95.2%	2,588	105.2%
Recreation and culture	6,870	72.4%	7,230	76.2%
Education	188	44.8%	195	46.4%
Restaurants and hotels	5,074	77.0%	4,843	73.5%
Other goods and services	7,807	80.6%	7,725	79.8%
Durables	12,072	118.4%	13,300	130.5%
Total	76,200	88.2%	78,804	91.2%

Source: authors' calculations based on EUROMOD G4.0, HBS 2012 and OECD

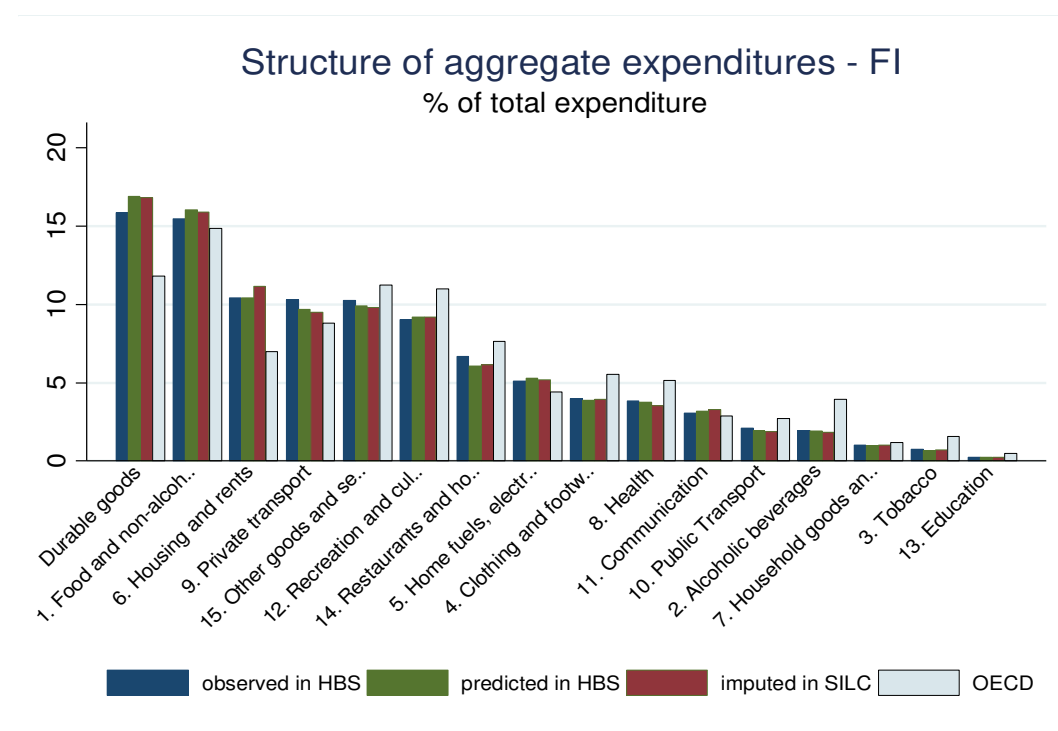
Figure 3 Aggregate observed and imputed expenditures.

Source: authors' calculations based on EUROMOD G4.0, HBS 2012 and OECD

Figure 4 shows the structure of aggregate expenditures in Finland ordering the 16 expenditure categories considered in this report from the largest to the smallest (share of total expenditure). It shows that most of the categories that fall short compare to the figures provided by OECD (national accounts) are the smaller expenditure categories and therefore not likely to affect significantly the shaping of the overall picture.

The most important expenditure categories are durables and food and non-alcoholic beverages. Durables make up around 16% of total expenditures in HBS and SILC, while for the OECD figures this category makes up only 12% of total household expenditures in Finland. Food and non-alcoholic beverages makes up around 15% of total expenditure according to the different data sources. Figure 4 also highlights some differences in expenditure figures derived from HBS and SILC and those provided by OECD as for example an overestimation of durables' share as well as that of housing and rents; and an underestimation of the share of other goods and services, recreation and culture and restaurants and hotels.

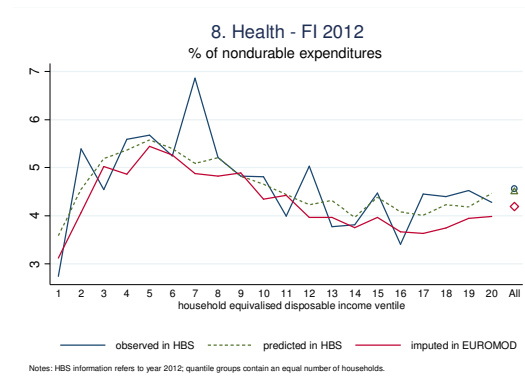
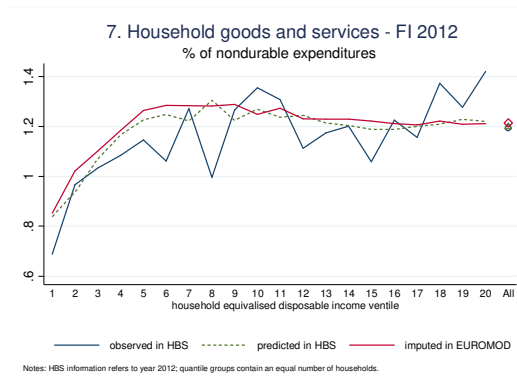
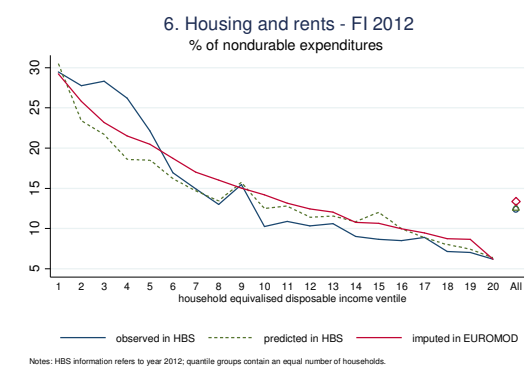
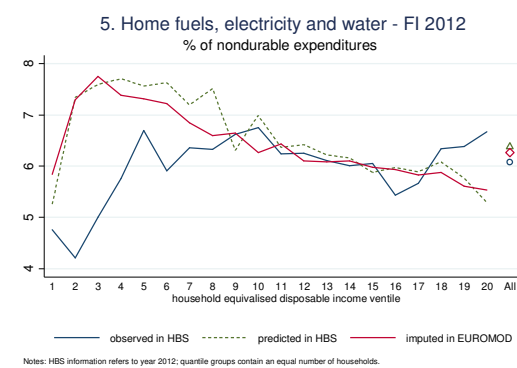
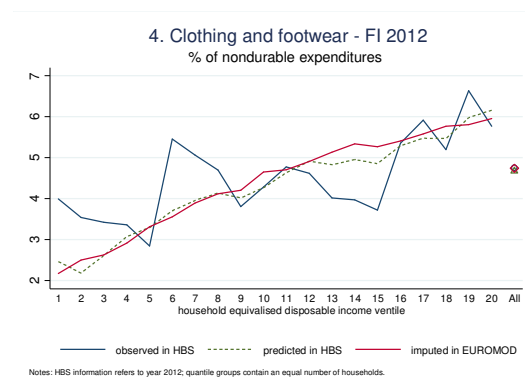
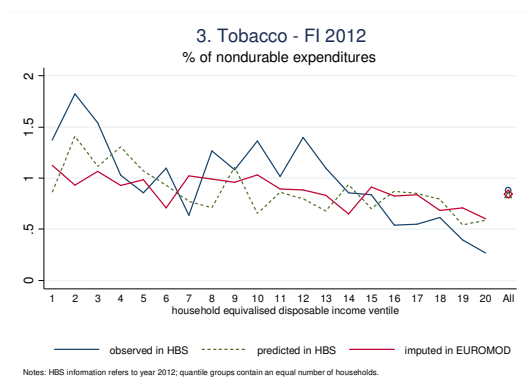
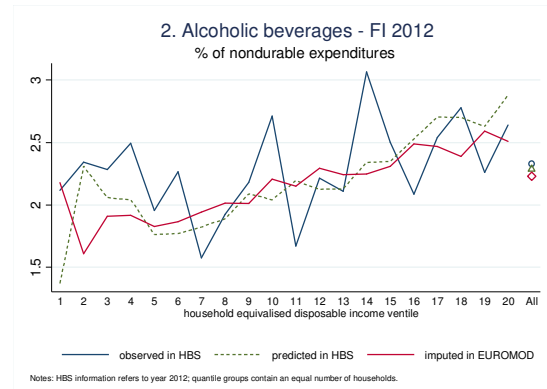
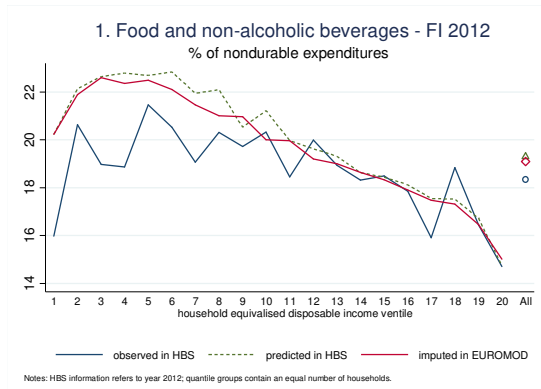
Figure 4 Structure of aggregate expenditures.

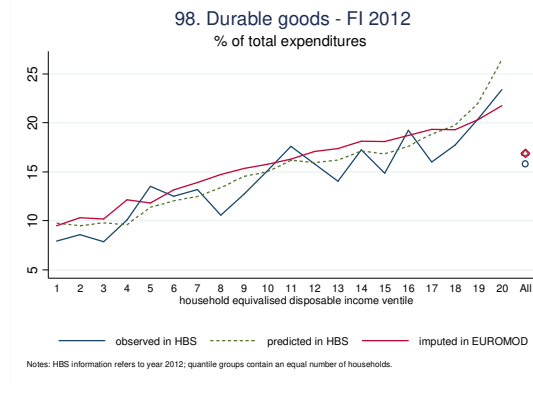
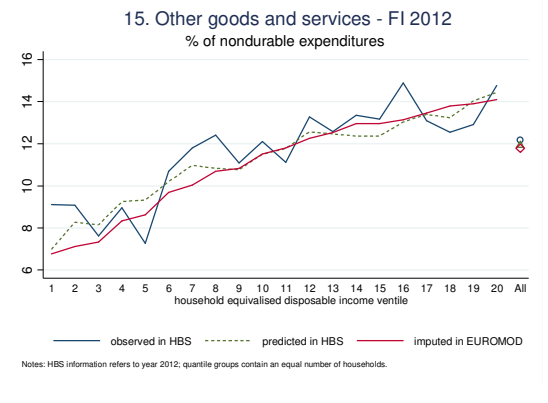
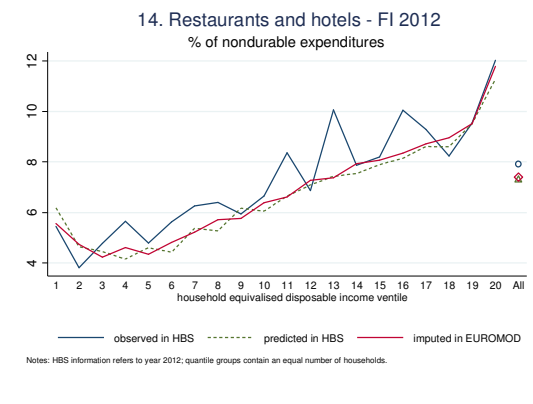
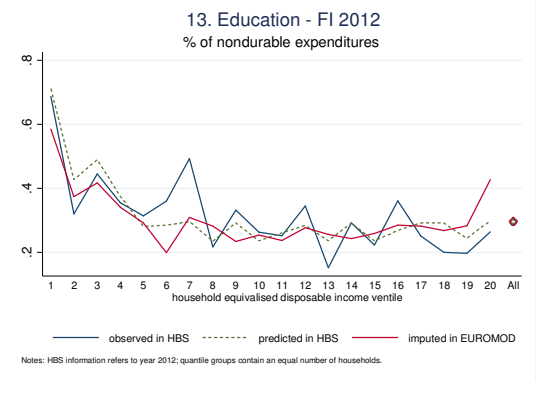
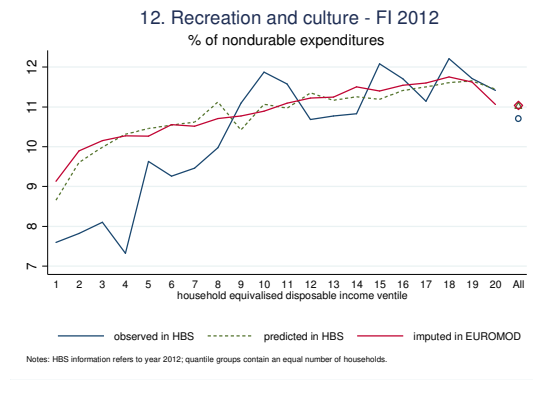
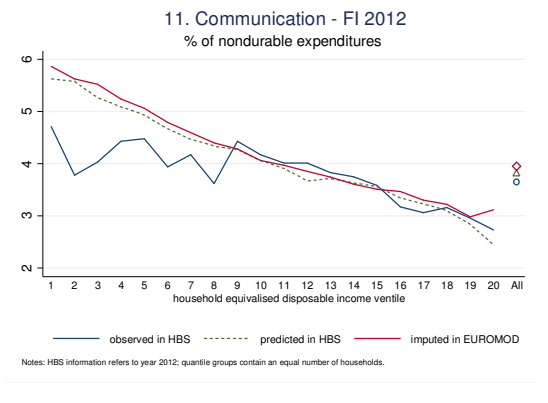
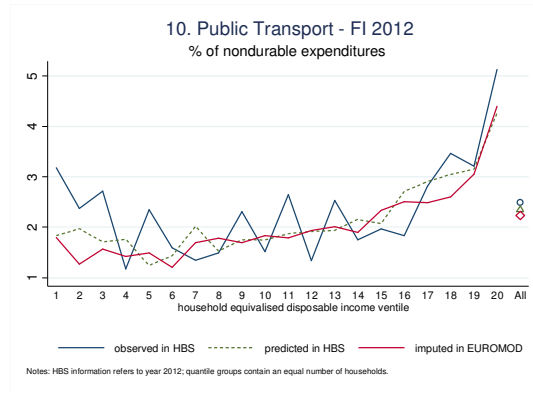
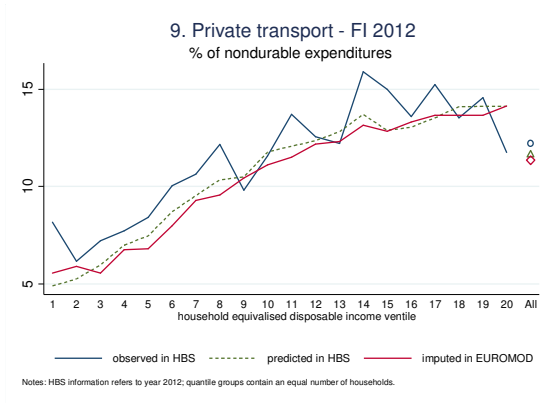


Source: authors' calculations based on EUROMOD G4.0, HBS 2012 and OECD

Figure 5 assesses the quality of estimation comparing the distribution of HBS in-sample prediction and EUROMOD-SILC imputed household share of expenditures per month with the distribution of average HBS observed share of expenditure for each of the 16 categories. The graphs show that in Finland the model is capturing well households' preferences and allocation of expenditures. Our in and out of sample predictions are very closed to the observed values in HBS. The biggest differences amount of four percentage points and can be seen at the lower end of the income distribution for spending on food and non-alcoholic beverages and home fuel, electricity and water. This confirms that the model used is doing well in approximating consumers demand in Finland and we can confidently proceed using it for simulating indirect taxation into EUROMOD.

Figure 5 Share of expenditures by vintiles of household equivalised disposable income, HBS vs EUROMOD-SILC (2012)





Notes: non-durable expenditure categories shown as a share of total non-durable expenditures and durable expenditures as a share of total expenditures; ventiles are constructed on the basis of household disposable income equivalised with the modified OECD scale, allocating the same number of households to each ventile.

Source: authors' calculations based on EUROMOD G4.0 and HBS 2012

4. VALIDATION OF INDIRECT TAX SIMULATIONS IN EUROMOD

In this section we compare the simulated indirect taxes with external data on tax revenues in 2011-2016 and analyse tax incidence across Finish households in 2012.

Table 17 reports actual tax revenues from VAT and excise tax between 2011-2015 and the simulated amounts of taxes in 2011-2016 by EUROMOD. It should be noted that the external data on tax revenues include revenues derived from consumption by non-domestic households (e.g. foreign tourists, cross-border shopping), which we do not capture in our tax simulations, and therefore we unavoidably undersimulate the tax revenues. We also do not capture the VAT that is paid by companies but not passed to final consumers. In 2012 we simulate 75% of the actual VAT revenues from the household sector in Finland. The ratio of simulated excise tax to the actual revenues is much lower and amounts to 27%, of which the ratio for the excise tax on alcohol is 35%, the ratio of excise tax on tobacco consumption is 44%, the ration on excise tax on energy is 43% and those on sweets, ice cream and soft drinks is 71%.

There are several likely reasons for underestimation of the excise tax on alcohol and tobacco, apart from consumption by non-domestic households. First, with respect to alcohol, HBS does not distinguish alcohol consumed outdoors – respondents just record the total amount spent on outdoor meals. Second, expenditures on alcohol and tobacco are strongly underreported in HBS data (as shown by Table 16). This suggests that undersimulation of excise tax on alcohol and tobacco is to a large extent due to a small share of actual consumption of these goods that is captured by HBS.

Household expenditures for other years are simulated in real terms, i.e. on the basis of incomes backrated/uprated to 2012. To obtain nominal expenditures and calculate indirect taxes for a given year, simulated real expenditures are then uprated with the same index. The index is based on actual year-on-year nominal growth of household consumption in 2011-2015² and forecasted nominal growth of GDP in 2016³(see Table 21 in Appendix).

The ratio of simulated VAT revenues to the actual revenues from VAT from household sector is 76% in 2013. Unfortunately there are no figures available for the following years, but when comparing to the total revenue from VAT, the ratio between simulated and actual revenues slightly improves in 2014-2015.

The ratio of simulated revenues from excise tax to the actual revenues slowly improves over time arriving at 30% in 2015. This is mainly driven by improve capturing of excises from alcohol and energy, while the ratio between simulated and actual excises from tobacco declines.

² OECD data on final consumption expenditure of households.

³ Statistic Finland, Ministry of Finance's forecast of main macroeconomic indicators. <http://www.focus-economics.com/countries/finland>

Table 17 Total indirect tax by type (excises, VAT, total indirect taxes), mln EUR and ratio, 2011-2016: actual and simulated

	Simulated by EUROMOD						National Accounts					Ratio EM/ext				
	2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
General																
Government total revenue	12,379	12,878	13,473	13,780	14,076	14,382	27,122	28,111	29,103	29,259	29,696	0.46	0.46	0.46	0.47	0.47
VAT	9,861	10,215	10,776	10,913	10,971	11,125	17,315	17,987	18,888	18,948	19,019	0.57	0.57	0.57	0.58	0.58
- household sector	9,861	10,215	10,776	10,913	10,971	11,125	13,420	13,568	14,224	n/a	n/a	0.73	0.75	0.76	--	--
- business sector	n/a	n/a	n/a	n/a	n/a	n/a	3,895	4,419	4,664	n/a	n/a	--	--	--	--	--
Excises	2,518	2,663	2,697	2,867	3,106	3,257	9,618	9,940	10,049	10,141	10,512	0.26	0.27	0.27	0.28	0.30
- alcohol	448	485	484	511	514	519	1,291	1,374	1,355	1,381	1,356	0.35	0.35	0.36	0.37	0.38
- tobacco	316	327	347	349	365	369	718	749	852	788	885	0.44	0.44	0.41	0.44	0.41
- Energy (incl. transports)	1,648	1,712	1,728	1,833	2,051	2,188	3,875	3,956	3,925	3,846	4,082	0.43	0.43	0.44	0.48	0.50
Energy	422	455	433	444	475	501	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--
Transports	1,225	1,257	1,295	1,389	1,576	1,687	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--
- sweets, ice cream and soft drinks	106	139	137	174	176	181	134	197	204	257	250	0.79	0.71	0.67	0.68	0.70
- certain beverage containers	n/a	n/a	n/a	n/a	n/a	n/a	15	15	15	14	15	--	--	--	--	--
Other indirect taxes	n/a	n/a	n/a	n/a	n/a	n/a	3,584	3,648	3,697	3,854	3,926	--	--	--	--	--

Notes: 2016 National Account values not available at the time of writing this report.

Source: authors' calculations based on EUROMOD G4.0; Statistic Finland/National Accounts.

Table 18 shows simulated implicit indirect tax rate by product categories in 2011-2016. The categories that are subject to the highest implicit tax rates are tobacco, alcohol and private transport (the latter due to the excise tax on fuel). In general, implicit tax rates increase over time for all goods with two exceptions: tobacco products between 2013 and 2014 and alcoholic beverages in 2016. As consumer and excises prices of tobacco products increased at a different rate between 2013 and 2014 (consumer price of cigarettes increased by 0.013 euro/unit, excise specific price increased by 0.0055 euro/unit; consumer price of fine cut tobacco increased by 0.009 euro/gram, excise specific price increased by 0.0035 euro/gram), this affects negatively the implicit tax rate⁴. Similarly for alcoholic beverages between 2015 and 2016, increasing consumer prices and constant excises prices imply a decrease of implicit tax rate.

Table 18 Implicit indirect tax rate by expenditure category, %, 2011-2016

Label	2011	2012	2013	2014	2015	2016
Food and non-alcoholic beverages	14.12	14.44	15.43	15.79	15.81	15.83
Alcoholic beverages	100.65	107.93	109.15	114.86	115.23	114.76
Tobacco	342.07	346.13	439.02	417.60	502.42	502.00
Clothing and footwear	23.00	23.00	24.00	24.00	24.00	24.00
Home fuels, electricity and water	41.36	42.40	42.44	42.72	44.13	45.06
Housing and rents	0.31	0.31	0.32	0.32	0.32	0.32
Household goods and services	23.00	23.00	24.00	24.00	24.00	24.00
Health	7.16	7.16	7.63	7.63	7.63	7.63
Private transport	51.08	51.01	53.12	55.54	61.41	64.47
Public Transport	6.50	6.50	7.17	7.17	7.17	7.17
Communication	22.37	22.37	23.34	23.34	23.34	23.34
Recreation and culture	11.29	12.76	13.53	13.53	13.53	13.53
Education	12.61	12.61	13.11	13.11	13.11	13.11
Restaurants and hotels	15.56	15.56	16.57	16.57	16.57	16.57
Other goods and services	13.11	13.11	13.63	13.63	13.63	13.63
Durable goods	23.00	23.00	24.00	24.00	24.00	24.00
Disregarded items	0.00	0.00	0.00	0.00	0.00	0.00

Source: authors' calculations based on EUROMOD G4.0

Table 19 and Table 20 present simulations of indirect taxes for the baseline tax year (i.e. legislation in place in 2012). They show mean (unequalised) household disposable income, total expenditure and total indirect taxes respectively by income decile and by expenditure decile. The amount of indirect taxes paid by each decile rises with income, reflecting the rising share in total consumption: the share of indirect taxes paid by top decile is almost four times (3.87) as high as the share of taxes paid by the bottom decile. However, the second part of

⁴ The average implicit tax rate can be decomposed into three different indirect tax components:

$$\frac{\tau_k}{1 + \tau_k} = \frac{t_k}{1 + t_k} + \frac{a_k}{q_k} + v_k$$

From this we can see that when consumer prices q_k increase faster than specific excises prices, implicit tax rate decreases.

Table 19 shows that indirect taxes are clearly regressive: tax liability in percent of disposable income declines about linearly from 17.24% in the first decile to 10.11% in the top decile of equivalised household disposable income. This is reflected mainly by VAT which in percentage of income is 13.63% in the first decile as opposed to 8.72 in the top decile. The variation of incidence of excise tax is smaller ranging between 3.62% and 2.17%.

Table 20 show similar results but ranking households by total expenditure. Also in this case indirect taxes increase with expenditure in nominal terms, but the share of indirect taxes paid by top decile (17.11%) is now higher than the share of indirect taxes paid by the bottom decile (13.89%), revealing that indirect taxes are progressive with respect to expenditure.

These effects are clearly visualized by Figure 6 and Figure 7.

Table 19 Mean (unequalised) household disposable income, total expenditure and total indirect taxes by income decile, 2012.

	Household Income	Household Expenditure	Indirect taxes	Incidence				Total Indirect taxes
				VAT	Excises	Excises specific	Excises ad valorem	
1	1,065.09	1,088.71	183.65	13.63	3.62	3.02	0.60	17.24
2	1,394.98	1,138.59	207.58	11.80	3.08	2.62	0.46	14.88
3	1,732.53	1,245.89	250.57	11.55	2.92	2.55	0.36	14.46
4	2,196.05	1,412.74	329.51	11.86	3.14	2.72	0.42	15.00
5	2,591.15	1,563.31	386.72	11.76	3.16	2.77	0.39	14.92
6	2,986.05	1,736.60	446.32	11.80	3.15	2.81	0.34	14.95
7	3,419.37	1,890.90	501.20	11.62	3.03	2.76	0.27	14.66
8	3,903.03	2,044.15	550.28	11.14	2.96	2.66	0.30	14.10
9	4,547.85	2,240.55	607.74	10.60	2.76	2.52	0.24	13.36
10	6,530.88	2,708.16	710.77	8.72	2.17	2.00	0.16	10.88

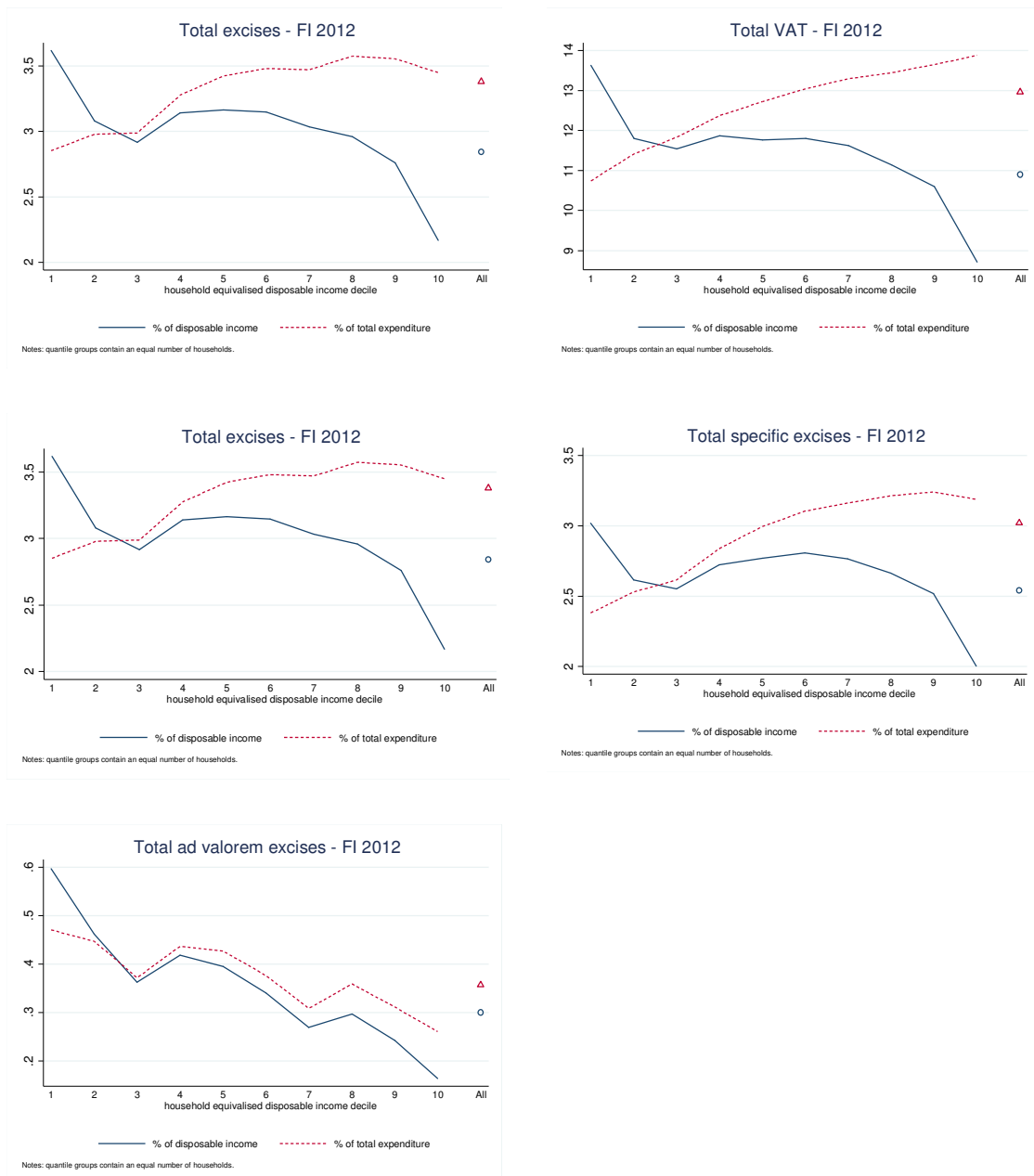
Source: authors' calculations based on EUROMOD G4.0

Table 20 Mean (unequalised) household disposable income, total expenditure and total indirect taxes by expenditure decile, 2012.

	Household Income	Household Expenditure	Indirect taxes	Incidence				Total indirect taxes
				VAT	Excises	Excises specific	Excises ad valorem	
1	1,379.16	825.99	129.73	11.39	2.50	2.24	0.27	13.89
2	1,531.77	1,031.11	167.25	11.02	2.73	2.33	0.40	13.75
3	1,844.53	1,212.48	226.87	11.36	3.14	2.68	0.46	14.50
4	2,176.07	1,422.19	307.34	11.97	3.36	2.91	0.45	15.33
5	2,597.57	1,609.35	389.98	12.56	3.48	3.04	0.44	16.04
6	3,070.70	1,785.18	484.81	13.11	3.57	3.19	0.38	16.68
7	3,598.80	1,940.68	549.27	13.40	3.54	3.21	0.33	16.94
8	4,007.87	2,099.58	591.57	13.54	3.57	3.21	0.36	17.11
9	4,384.84	2,302.56	618.57	13.55	3.43	3.13	0.30	16.99
10	5,778.12	2,841.73	709.40	13.77	3.34	3.06	0.28	17.11

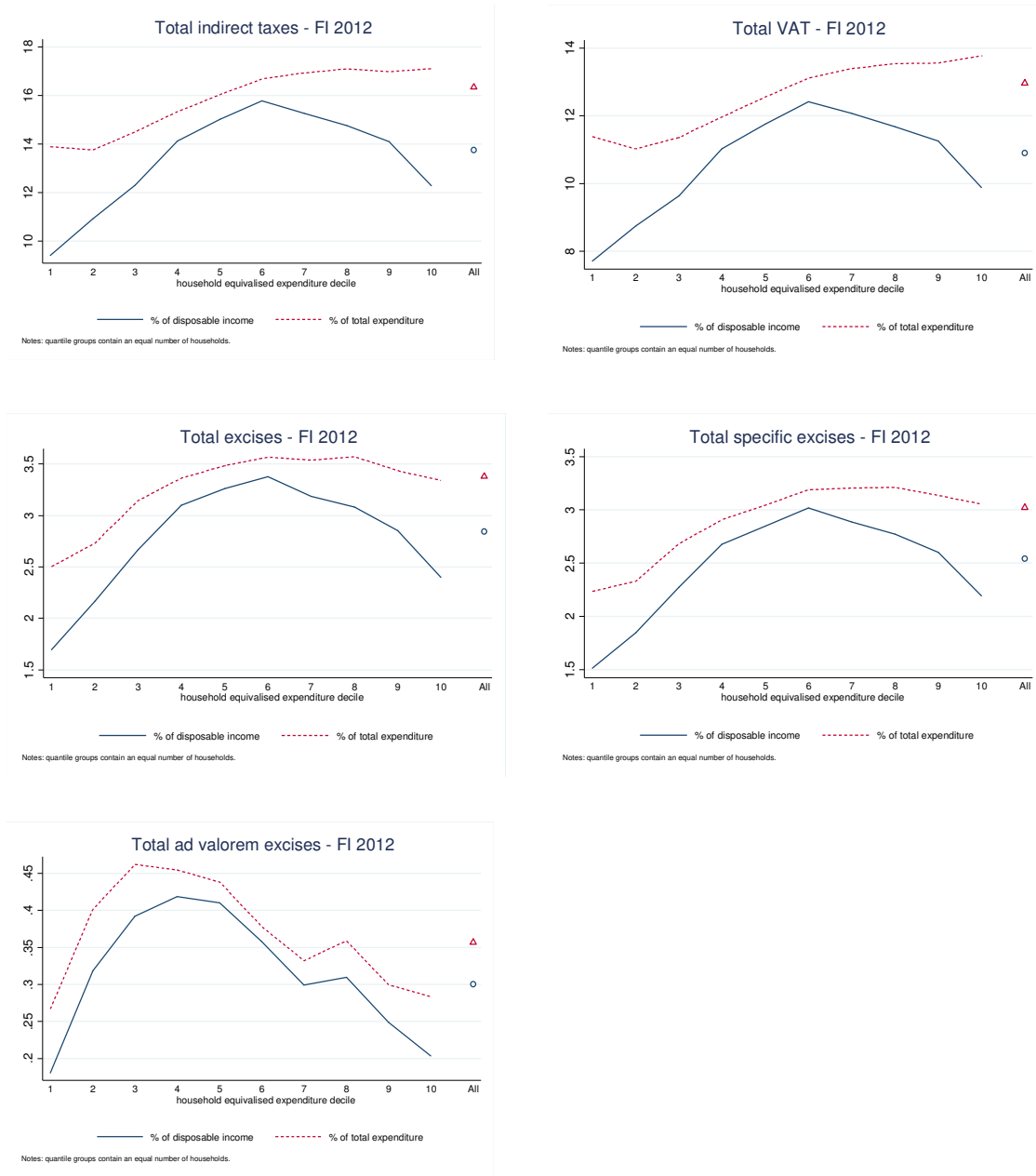
Source: authors' calculations based on EUROMOD G4.0

Figure 6 Incidence of indirect taxes by income decile, % of disposable income and expenditure, 2012



Source: authors' calculations based on EUROMOD G4.0

Figure 7 Incidence of indirect taxes by expenditure decile, % of disposable income and expenditure, 2012



Source: authors' calculations based on EUROMOD G4.0

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6. APPENDIX

Table 21 Uprating index used for calculation of nominal expenditures in 2011-2016

	2011	2012	2013	2014	2015	2016
Index (2011 = 1)	1	1.029	1.041	1.055	1.061	1.075

Note: in 2011-2015, the index is based on actual year-on-year nominal growth of household consumption; in 2016, the index is based on forecasted growth of nominal GDP.

Source: OECD, Ministry of Finance of Finland, Statistic Finland and authors' calculations.

Table 22 Model parameters and assumptions

	2011	2012	2013	2014	2015	2016	Comments
\$VAT_0	0%	0%	0%	0%	0%	0%	VAT zero rate
\$VAT_1	9%	9%	10%	10%	10%	10%	VAT second reduced rate
\$VAT_2	13%	13%	14%	14%	14%	14%	VAT first reduced rate
\$VAT_3	23%	23%	24%	24%	24%	24%	VAT rate standard
\$PRICE_CHOCO	9.95	10.6	10.9	11.1	11.55	11.75	Euro per kg
\$SPECIFIC_CHOCO	0.75	0.95	0.95	0.95	0.95	0.95	Euro per kg
\$PRICE_SWEETS	8.2	8.75	9.14	9.24	9.06	8.77	Euro per kg
\$SPECIFIC_SWEETS	0.75	0.95	0.95	0.95	0.95	0.95	Euro per kg
\$PRICE_GUMS	24.63	26.18	26.45	25.9	25.81	25.9	Euro per kg
\$SPECIFIC_GUMS	0.75	0.95	0.95	0.95	0.95	0.95	Euro per kg
\$PRICE_ICECREAM	10.43	11.28	11.71	11.86	12	12.28	Euro per kg
\$SPECIFIC_ICECREAM	0.75	0.95	0.95	0.95	0.95	0.95	Euro per kg
\$PRICE_MINWATER	1.13	1.23	1.26	1.29	1.25	1.21	Euro per liter
\$SPECIFIC_MINWATER	0.075	0.11	0.11	0.11	0.11	0.11	Euro per liter
\$PRICE_SOFTDRINKS	1.35	1.41	1.43	1.57	1.55	1.53	Euro per liter
\$SPECIFIC_SOFTDRINKS	0.075	0.11	0.11	0.22	0.22	0.22	Euro per liter
\$PRICE_FRUITJUICES	0.98	1.08	1.08	1.25	1.22	1.2	Euro per liter
\$SPECIFIC_FRUITJUICES	0.075	0.11	0.11	0.22	0.22	0.22	Euro per liter
\$PRICE_MIXFRUITSQUASH	2.9	3.33	3.33	3.85	3.76	3.7	Euro per liter
\$SPECIFIC_MIXFRUITSQUASH	0.075	0.11	0.11	0.22	0.22	0.22	Euro per liter
\$PRICE_VEGJUICE	0.98	1.08	1.08	1.25	1.22	1.2	Euro per liter
\$SPECIFIC_VEGJUICE	0.075	0.11	0.11	0.22	0.22	0.22	Euro per liter
\$PRICE_LTGBEER_MEADEXT	1.35	1.41	1.43	1.57	1.55	1.53	Euro per liter
\$SPECIFIC_LTGBEER_MEADEXT	0.075	0.11	0.11	0.22	0.22	0.22	Euro per liter
\$PRICE_SPORT_DRINKS	1.35	1.41	1.43	1.57	1.55	1.53	Euro per liter
\$SPECIFIC_SPORT_DRINKS	0.075	0.11	0.11	0.22	0.22	0.22	Euro per liter

\$VALOREM_PAPER_FILTERS	60%	60%	60%	60%	60%	60%	percentage
\$PRICE_ELECTRICITY	0.15	0.14	0.15	0.15	0.15	0.15	Euro per KWh
\$SPECIFIC_ELECTRICITY	0.01703	0.01703	0.01703	0.01903	0.02253	0.02253	Euro per KWh
\$PRICE_NATURAL_GAS	1.07	1.13	1.11	1.02	0.86	0.8	Euro per liter
\$SPECIFIC_NATURAL_GAS	0.009024	0.009024	0.011464	0.011464	0.015444	0.017424	Euro per KWh
\$PRICE_FUEL_OIL	1.07	1.13	1.11	1.02	0.86	0.8	Euro per liter
\$SPECIFIC_FUEL_OIL	0.1605	0.1605	0.1634	0.1634	0.1874	0.214	Euro per liter
\$PRICE_PETROL	1.56	1.67	1.64	1.61	1.46	1.4	Euro per liter
\$SPECIFIC_PETROL	0.627	0.6504	0.6504	0.6729	0.6813	0.6813	Euro per liter
\$PRICE_OTH_FUELS	1.37	1.55	1.52	1.48	1.3	1.18	Euro per liter
\$SPECIFIC_OTH_FUELS	0.364	0.4695	0.4695	0.4966	0.5061	0.506	Euro per liter
\$PRICE_DISTRICTHEAT	0.07173	0.07434	0.08023	0.08298	0.08435	0.08409	Euro per KWh
\$SPECIFIC_DISTRICTHEAT	0.00579	0.00579	0.00579	0.00579	0.00579	0.00579	Euro per KWh

Note: In 2016 all prices are assumed to grow at CPI growth rate forecasted by Statistic Finland..