

Comparative Survey Design and Implementation (CSDI)
March 16th – 18th at the University of Mannheim, Germany

Measuring “total net household income” in interviews of cross-national social surveys with an emphasis on comparative research

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Harmonising
Demographic and
Socio-Economic
Variables for
Cross-National
Comparative
Survey Research

The ESS 2002 Survey Question
Total Net Household Income

The income questions (ESS)

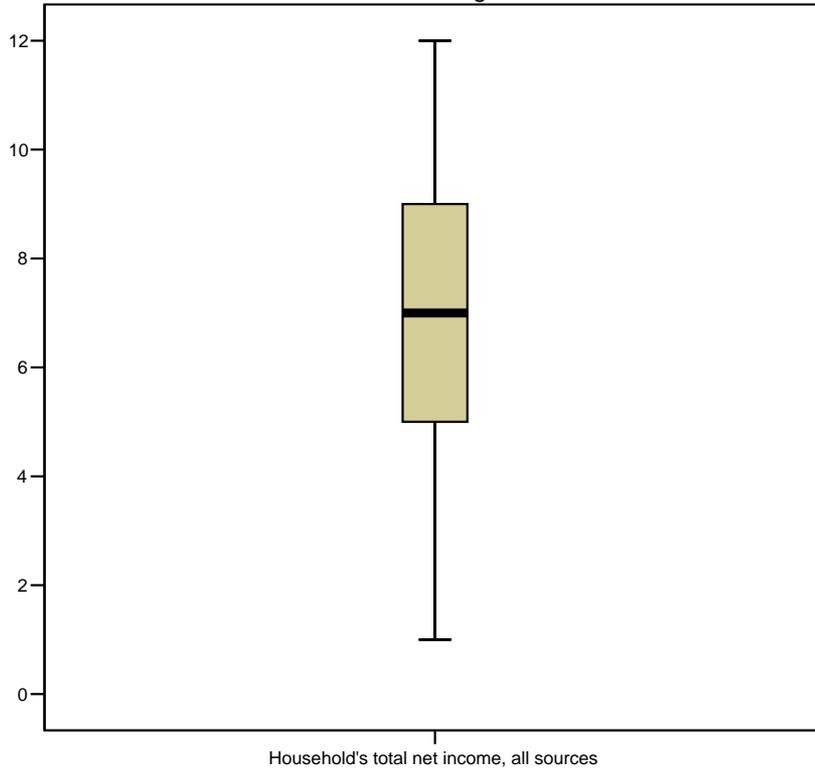
“... if you add up the income from all sources, which letter describes your household's total net income? If you don't know the exact figure, please give an estimate. Use the part of the card that you know best: weekly, monthly or annual income.” (ESS 01/08/2002: F30)

CARD 56				
YOUR <u>HOUSEHOLD</u> INCOME				
	Approximate WEEKLY	Approximate MONTHLY	Approximate ANNUAL	
J	Less than €40	Less than €150	Less than €1800	J
R	€40 to under €70	€150 to under €300	€1800 to under €3600	R
C	€70 to under €120	€300 to under €500	€3600 to under €6000	C
M	€120 to under €230	€500 to under €1000	€6000 to under €12000	M
F	€230 to under €350	€1000 to under €1500	€12000 to under €18000	F
S	€350 to under €460	€1500 to under €2000	€18000 to under €24000	S
K	€460 to under €580	€2000 to under €2500	€24000 to under €30000	K
P	€580 to under €690	€2500 to under €3000	€30000 to under €36000	P
D	€690 to under €1150	€3000 to under €5000	€36000 to under €60000	D
H	€1150 to under €1730	€5000 to under €7500	€60000 to under €90000	H
U	€1730 to under €2310	€7500 to under €10000	€90000 to under €120000	U
N	€2310 or more	€10000 or more	€120000 or more	N

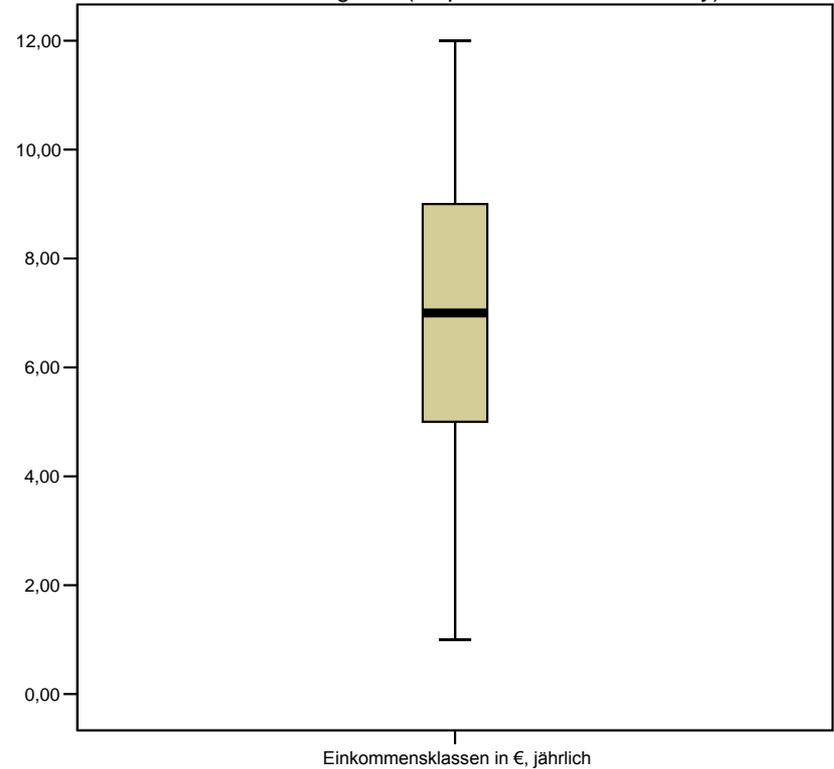
Fig. 5.10 Household income showcard, European Social Survey, 2002b

United Kingdom 2002

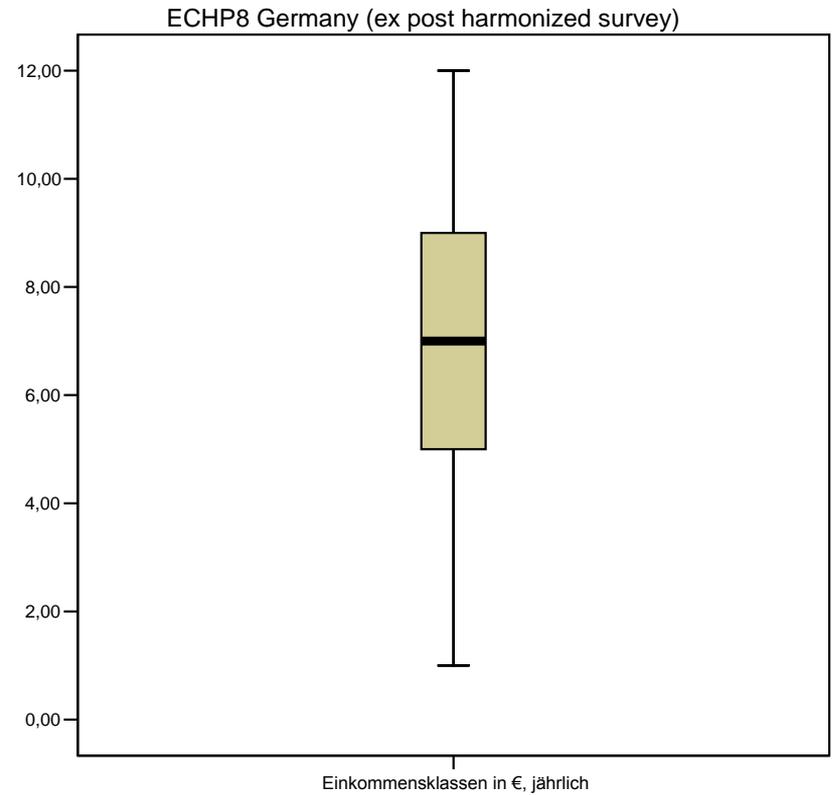
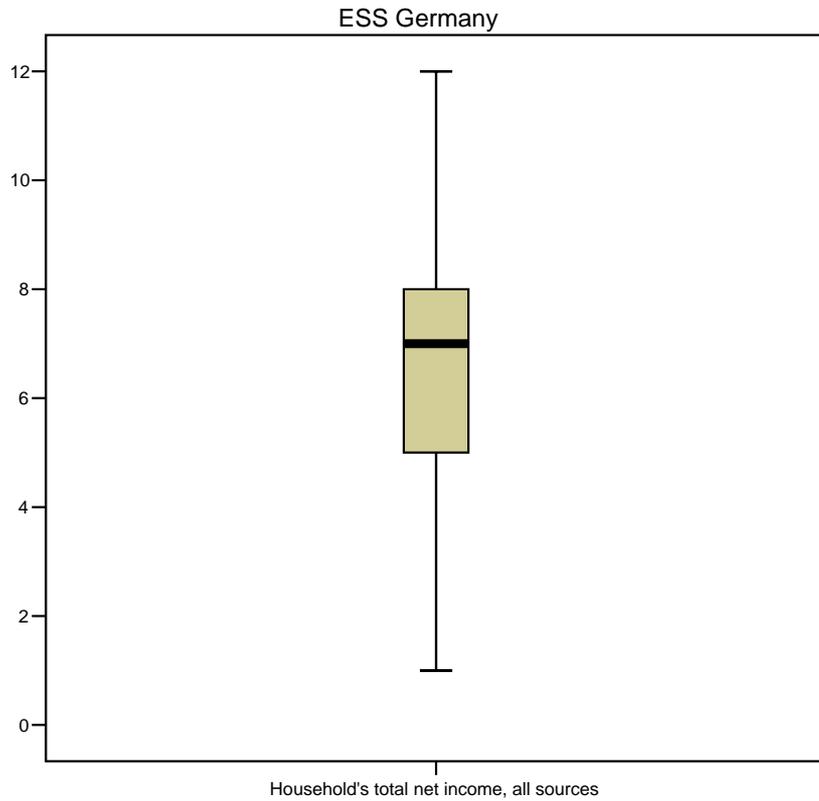
ESS United Kingdom



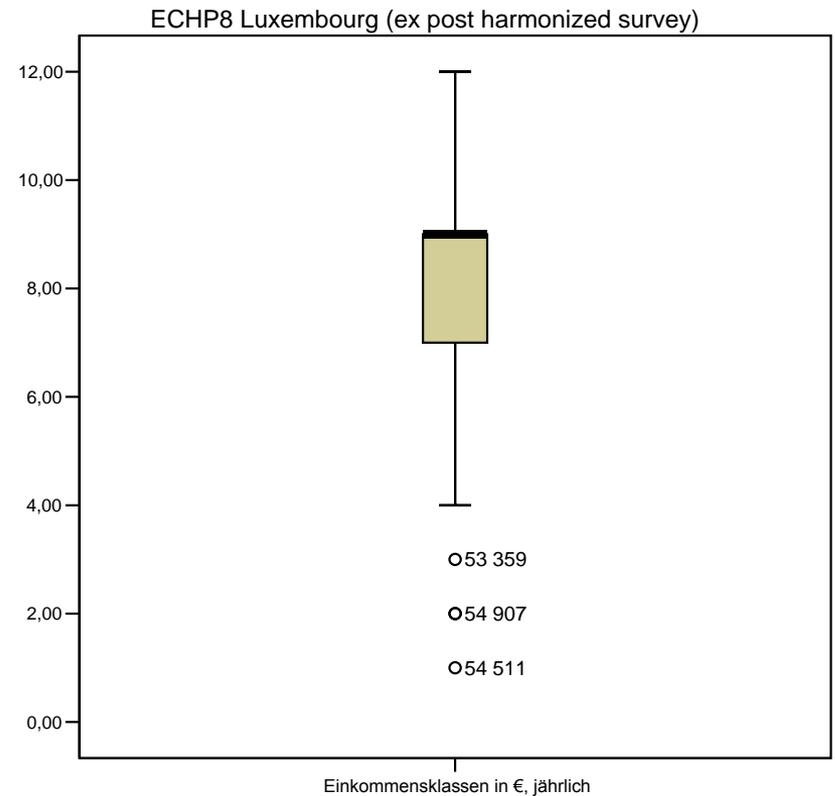
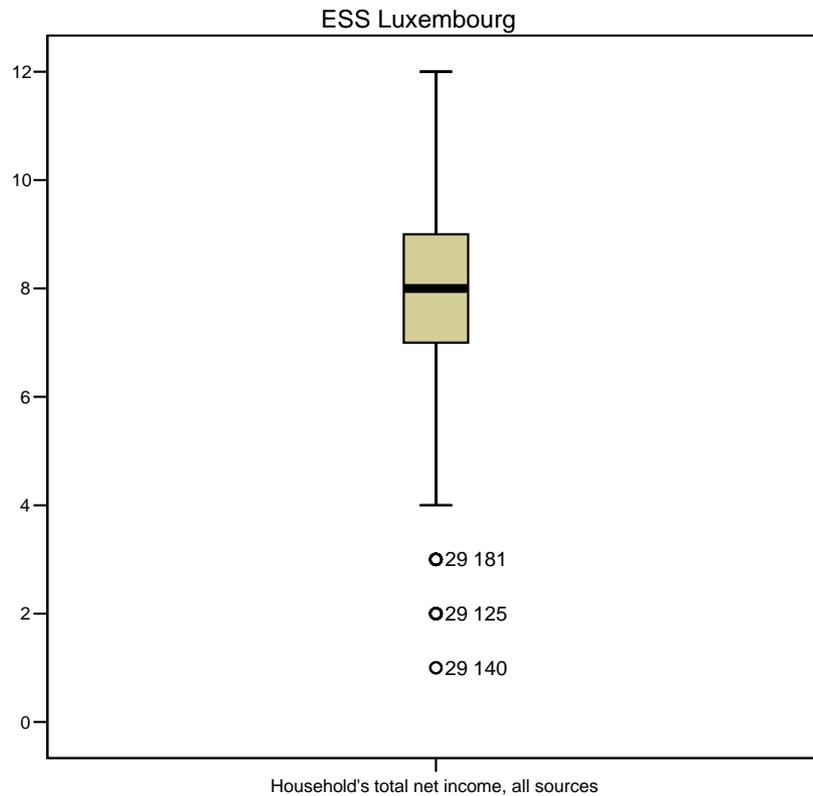
ECHP8 United-Kingdom (ex post harmonized survey)



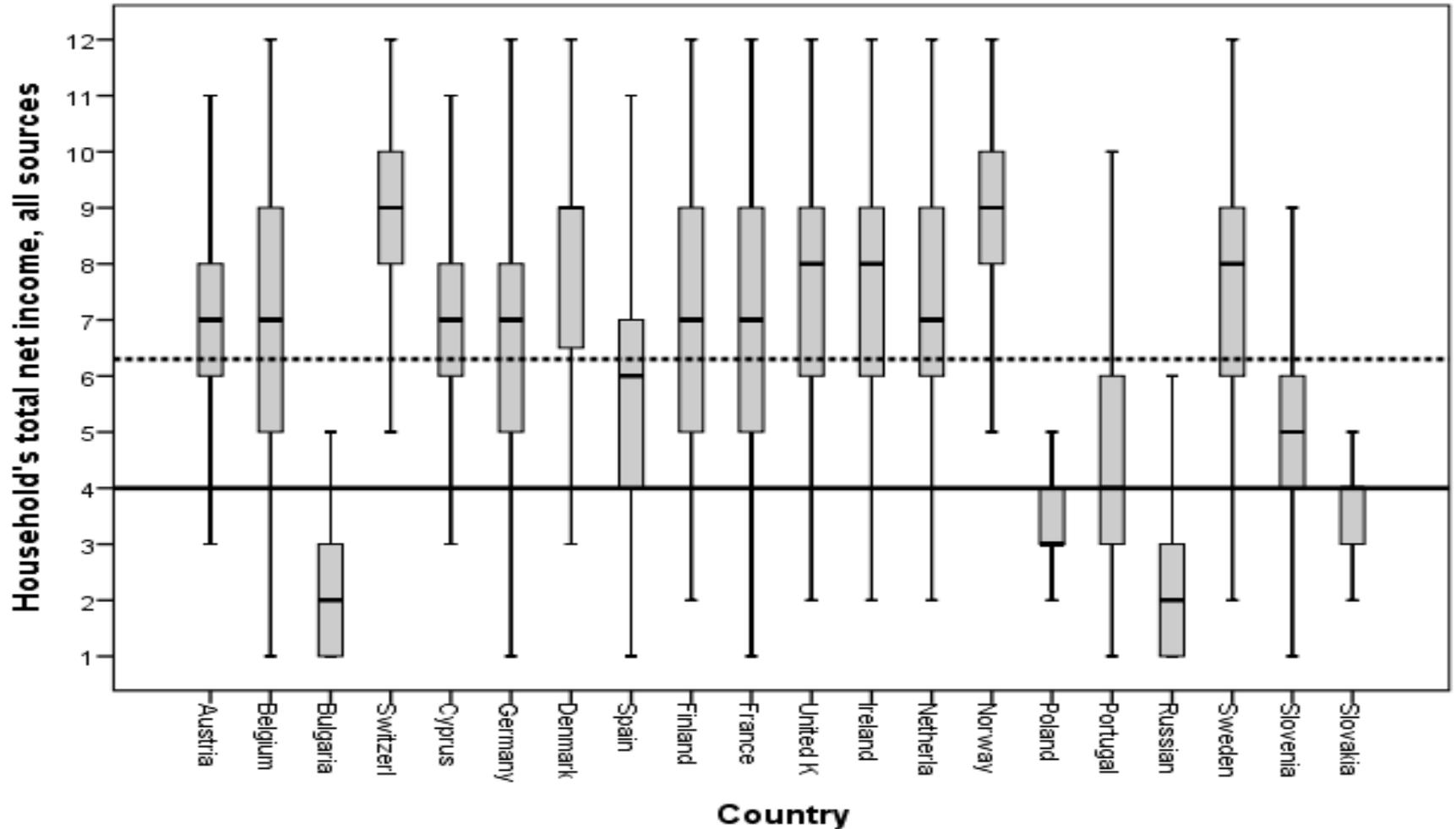
Germany 2002



Luxembourg 2002



ESS 2002



Cases weighted by Design weight

Doted line = mean over all countries

Solid line = median over all countries

National income distributions by ESS 2002 answer categories applied to ECHP8

	Germany	UK	Italy	Luxembourg	Portugal	Finland
ESS2002 categories	No. of the ECHP8 5% percentile					
up to 1,800	---	---	---	---	---	---
1,800- 3,600	---	---	---	---	1-2	---
3,600- 6,000	---	---	1	---	3-5	---
6,000- 12,000	1-2	1-2	2-5	---	6-11	1-3
12,000- 18,000	3-5	3-5	6-10	1	12-15	4-7
18,000- 24,000	6-8	6-7	11-13	2-3	16-17	8-10
24,000- 30,000	9-12	8-10	14-16	4-6	18	11-12
30,000- 36,000	13-14	11-12	17	7-8	19	13-15
36,000- 60,000	15-19	13-17	18-19	9-15	---	16-19
60,000- 90,000	---	18-19	---	16-18	---	---
90,000-120,000	---	---	---	19	---	---
120,000 and more	---	---	---	---	---	---

The ESS 2008 Modified Survey Question

Total Net Household Income

ESS 2008

“... please tell me which letter describes your household's total income, after tax and compulsory deductions, from all sources? If you don't know the exact figure, please give an estimate. Use the part of the card that you know best: weekly, monthly or annual income”

(ESS Source Questionnaire 08.08.2008, F32)

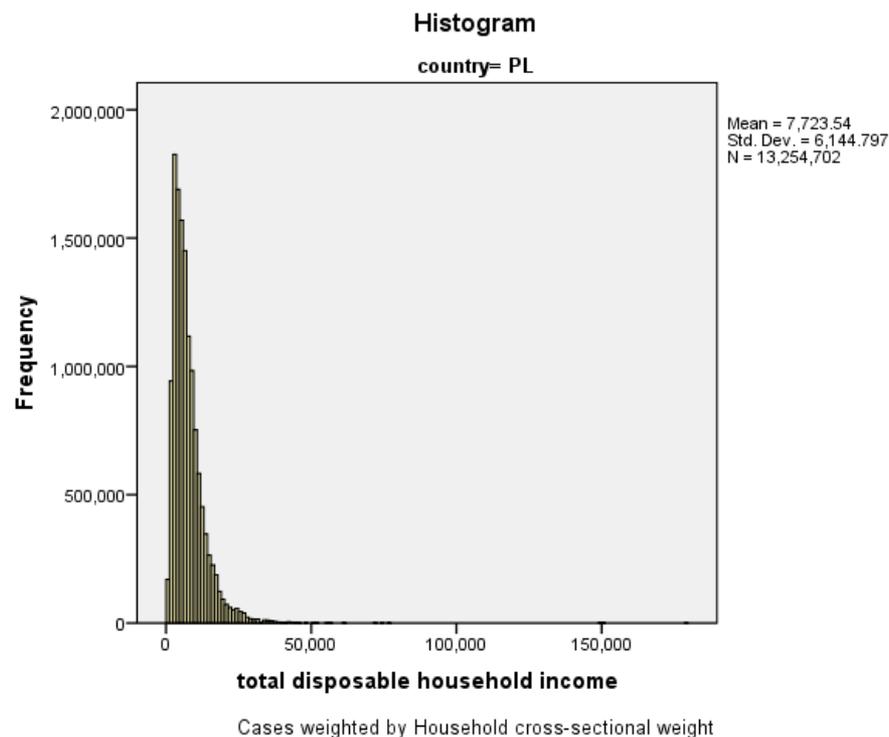
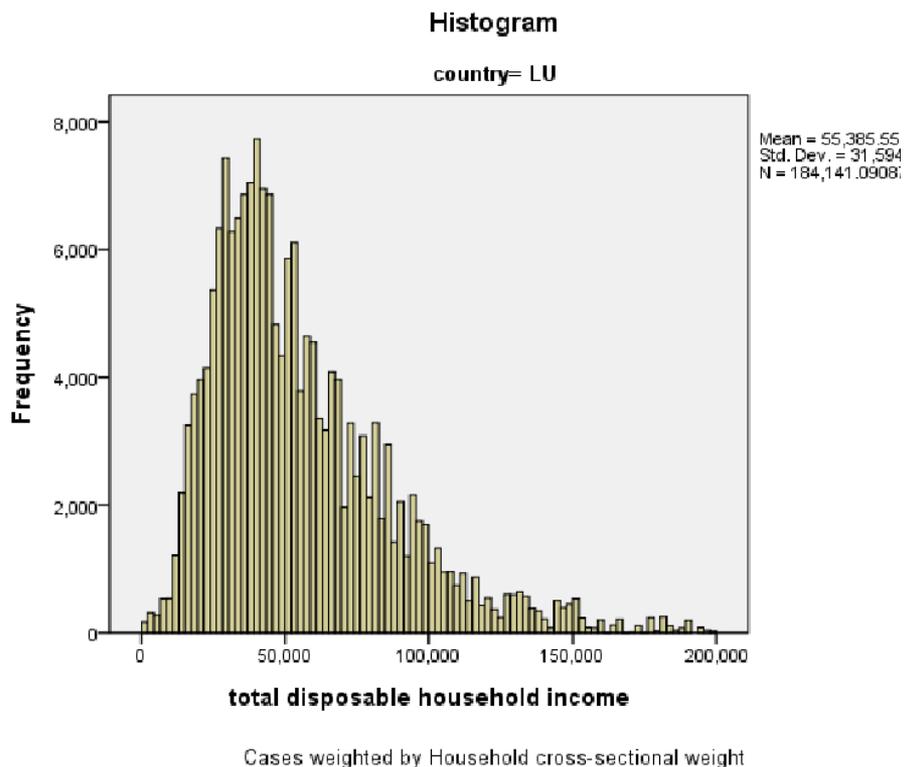
Note on the framing of the decile income showcard

“An income showcard should be devised with approximate weekly, monthly and annual amounts. You should use ten income range categories, each corresponding broadly to DECILES OF THE ACTUAL HOUSEHOLD INCOME RANGE in your country. These figures should be derived from the best available source for your country. The data source used should match the requirement of the question i.e. deciles of household income for all households (not for example average households or just households with children). Using the median income as the reference point, 10 deciles should be calculated with the median itself at the top of the fifth decile (Category F). The figures should not appear to be too exact. Minor rounding can be employed to achieve this if necessary (ESS, 2008a , CARD 73; see also: ESS, 2008b , p. 17)

CARD 73				
YOUR <u>HOUSEHOLD</u> INCOME				
	Approximate WEEKLY	Approximate MONTHLY	Approximate ANNUAL	
J	Weekly equivalent	Monthly equivalent	Income corresponding to that held by 10% of households with lowest income (0-10%)	J
R	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (11-20%)	R
C	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (21-30%)	C
M	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (31-40%)	M
F	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (41-50%)	F
S	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (51-60%)	S
K	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (61-70%)	K
P	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (71-80%)	P
D	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (81-90%)	D
H	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (91-100%)	H

Fig. 5.12 Household income showcard, ESS 2008 (Source: European Social Survey, 2008a, CARD 73)

Expected household income brackets for ESS 2008 based on EU-SILC “Total disposable household income (HY020)” , in Euro, annually for 2007



	Percentiles of HY020 total disposable household income								
	10	20	30	40	50	60	70	80	90
LU	23.165	29.725	35.820	41.519	47.870	55.599	66.001	79.584	99.322
PL	2.535	3.387	4.281	5.247	6.303	7.444	8.918	10.876	14.438
CZ	3.752	5.012	6.566	7.558	8.813	10.365	12.099	14.242	18.131

Data: SILC USER DATABASE Version 2007.1 from 01-03-09 weighted by cross-sectional weight

United Kingdom ESS 2008

Question(s): F32

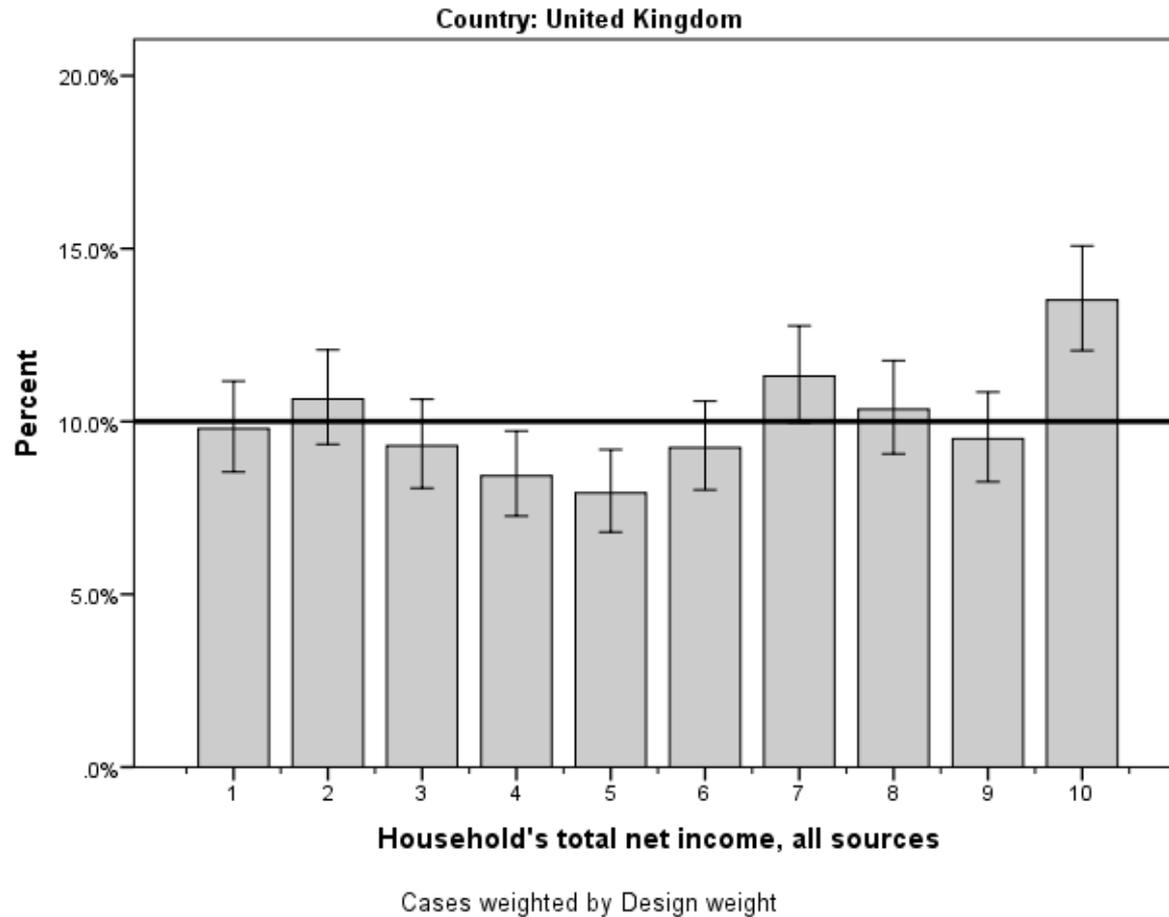
CARD 73

SILC Deciles

YOUR HOUSEHOLD INCOME

	Approximate WEEKLY	Approximate MONTHLY	Approximate ANNUAL	
				9544
J	Less than £164	Less than £715	Less than £8,550	13132
R	£164 to under £220	£715 to under £960	£8,550 to under £11,470	
C	£220 to under £275	£960 to under £1,200	£11,470 to under £14,440	16756
M	£275 to under £333	£1,200 to under £1,450	£14,440 to under £17,360	20840
F	£333 to under £405	£1,450 to under £1,760	£17,360 to under £21,120	
S	£405 to under £492	£1,760 to under £2,140	£21,120 to under £25,650	25634
K	£492 to under £592	£2,140 to under £2,570	£25,650 to under £30,870	30844
P	£592 to under £730	£2,570 to under £3,170	£30,870 to under £38,060	
D	£730 to under £961	£3,170 to under £4,180	£38,060 to under £50,110	37032
H	£961 or more	£4,180 or more	£50,110 or more	45048
				59065

United Kingdom ESS 2008



Error Bars: 95% Confidence Interval

Poland ESS 2008

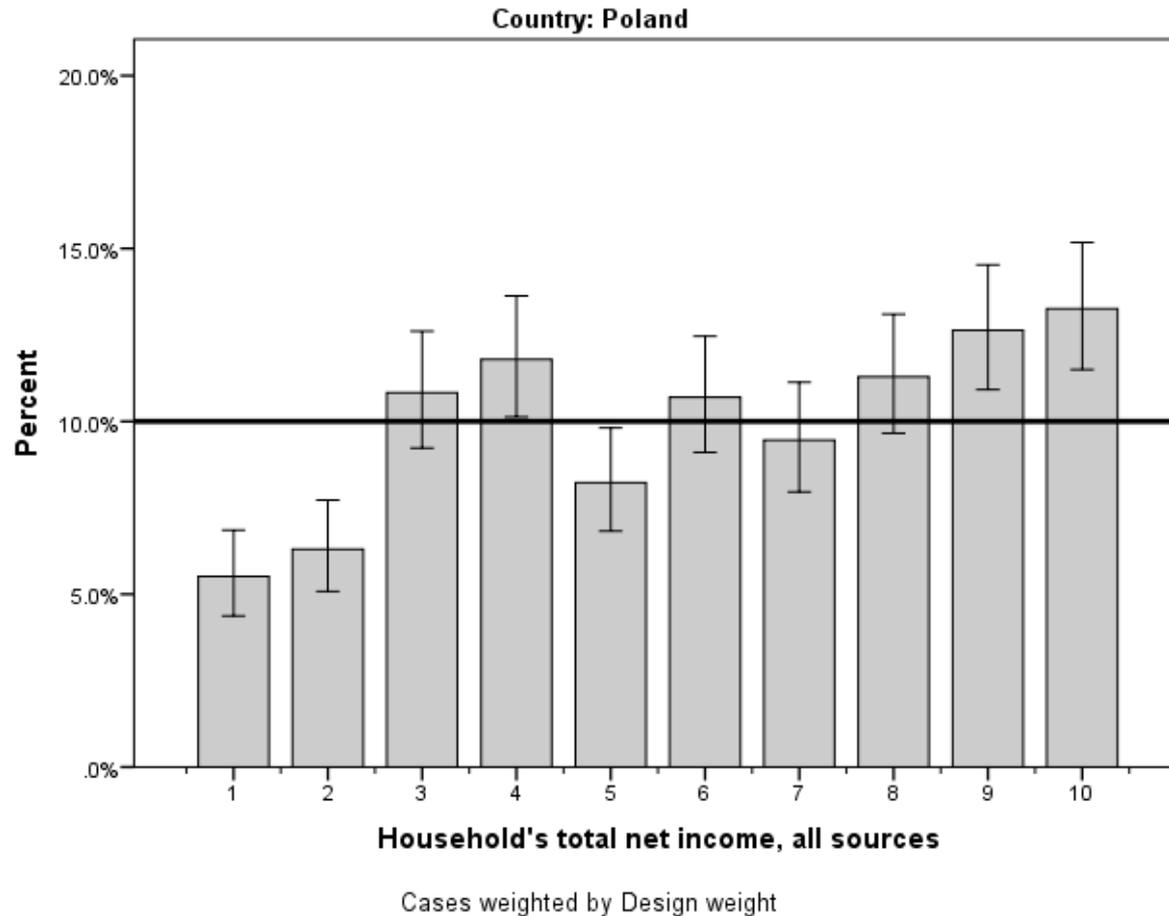
SILC Deciles

PYTANIE: F32

KARTA 73

	MIESIĘCZNE	ROCZNE		złoty	euro
				9126	2535
J	mniej niż 850 zł	mniej niż 10 000 zł	J	12193	3387
R	850 zł, ale mniej niż 1100 zł	10 000 zł, ale mniej niż 13 000 zł	R	15411	4281
C	1100 zł, ale mniej niż 1400 zł	13 000 zł, ale mniej niż 17 000 zł	C	18889	5247
M	1400 zł, ale mniej niż 1700 zł	17 000 zł, ale mniej niż 20 000 zł	M	26798	7444
F	1700 zł, ale mniej niż 2000 zł	20 000 zł, ale mniej niż 24 000 zł	F	32104	8918
S	2000 zł, ale mniej niż 2300 zł	24 000 zł, ale mniej niż 28 000 zł	S	39153	10876
K	2300 zł, ale mniej niż 2700 zł	28 000 zł, ale mniej niż 32 000 zł	K	43556	12099
P	2700 zł, ale mniej niż 3200 zł	32 000 zł, ale mniej niż 38 000 zł	P	51976	14438
D	3200 zł, ale mniej niż 4200 zł	38 000 zł, ale mniej niż 50 000 zł	D		
H	4200 zł lub więcej	50 000 zł lub więcej	H		

Poland ESS 2008



Error Bars: 95% Confidence Interval

Belgium ESS 2008

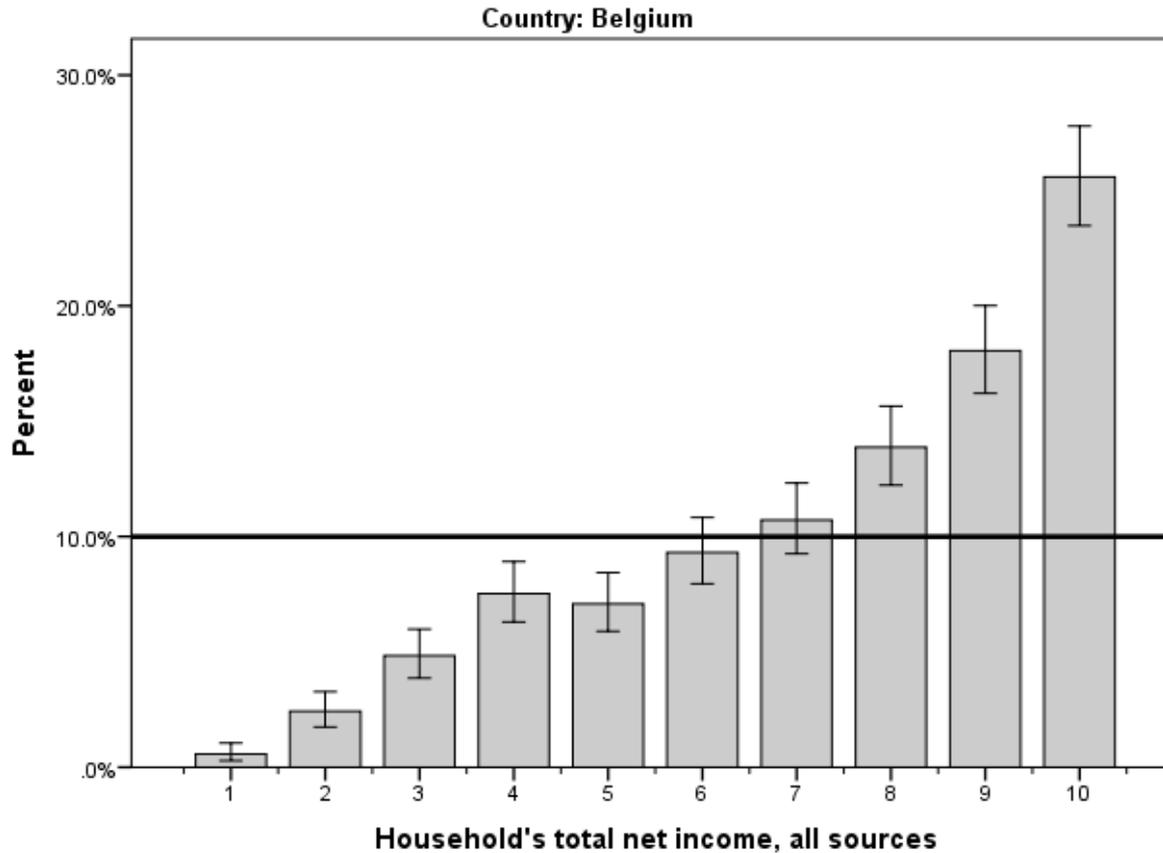
F32 MONTREZ CARTE 73 En utilisant cette carte, si vous cumulez toutes les sources de revenu de votre ménage, quelle lettre décrit le mieux le revenu net total de votre ménage ? Si vous ne connaissez pas le chiffre exact, veuillez donner une approximation. Utilisez la partie de la carte que vous connaissez le mieux : revenu hebdomadaire, mensuel ou annuel?

		HEBDOMADAIRE	MENSUEL	ANNUEL		
1: J	J	Moins de 100 €	Moins de 410 €	Moins de 5000 €	J	SILC
2: R	R	100 € à moins de 200 €	410 € à moins de 800 €	5000 € à moins de 10000 €	R	
3: C	C	200 € à moins de 225 €	800 € à moins de 1000 €	10000 € à moins de 12000 €	C	10.637
4: M	M	225 € à moins de 260 €	1000 € à moins de 1150 €	12000 € à moins de 14000 €	M	
5: F	F	260 € à moins de 300 €	1150 € à moins de 1350 €	14000 € à moins de 16000 €	F	13.716
6: S	S	300 € à moins de 350 €	1350 € à moins de 1500 €	16000 € à moins de 18000 €	S	
7: K	K	350 € à moins de 400 €	1500 € à moins de 1750 €	18000 € à moins de 21000 €	K	17.374
8: P	P	400 € à moins de 500 €	1750 € à moins de 2150 €	21000 € à moins de 26000 €	P	
9: D	D	500 € à moins de 650 €	2150 € à moins de 2900 €	26000 € à moins de 35000 €	D	20.791
10: H	H	650 € ou plus	2900 € ou plus	35000 € ou plus	H	25.123
77: Refus						30.288
88: Ne sait pas						36.545

F32^ TOON KAART 73 Als u het inkomen uit alle bronnen optelt, welke letter op deze kaart komt overeen met het totale netto-inkomen³² van uw huishouden? Indien u het precieze inkomen niet weet, geef dan een schatting. Gebruik het deel van de kaart dat voor u het gemakkelijkst is: wekelijkse of jaarinkomen. Welke letter op deze kaart komt overeen met het totale netto-inkomen van uw huishouden?

Belgium ESS 2008

With **tax register**
as source for the
answer categories



Cases weighted by Design weight

Error Bars: 95% Confidence Interval

Solid line = expected 10% response per category

II - Gezamenlijk belastbaar inkomen

Componenten van het gezamenlijk belastbaar inkomen in % van het totaal

België:

Aantal aangiften : 5.991.864

Deci- len	Per- cen- tielen	Globaal belastbaar inkomen	Beroepsinkomsten Income from work				Inkom- sten uit kapitalen en roerende goederen	Inkomsten uit on- roerende goederen	Diverse inkomsten	
			van zelfs- tandigen	Lonen en wedden	Pensioenen	Werkloos- heidsuitke- ringen				Ziekte- en invaliditeits- uitkeringen
Totaal		147.130.975.784	9,64	59,32	11,43	8,88	2,61	0,02	2,46	0,14
01		939.456.077	4,40	59,57	10,67	11,24	1,26	0,35	3,38	6,13
02		4.837.341.765	6,62	22,36	17,12	21,85	7,77	0,16	1,98	1,12
03		6.718.719.001	4,02	14,51	14,02	21,52	8,87	0,06	1,72	0,29
04		8.295.157.631	4,93	25,03	12,36	11,26	5,94	0,04	2,19	0,25
05		10.320.866.403	5,23	40,35	14,32	13,78	3,98	0,03	2,17	0,14
06		12.490.919.368	5,35	56,09	10,29	13,69	3,37	0,01	2,11	0,08
07		14.997.405.187	6,18	60,76	15,84	13,28	2,55	0,01	2,33	0,05
08		18.752.865.493	8,09	65,23	19,80	13,97	2,21	0,01	2,64	0,04
09		25.333.506.479	8,94	72,24	13,19	11,24	1,70	0,00	2,66	0,02

From self-employment

Wages and salaries

Pensions

Unemployment benefits

Sickness and invalidity

From capital and property

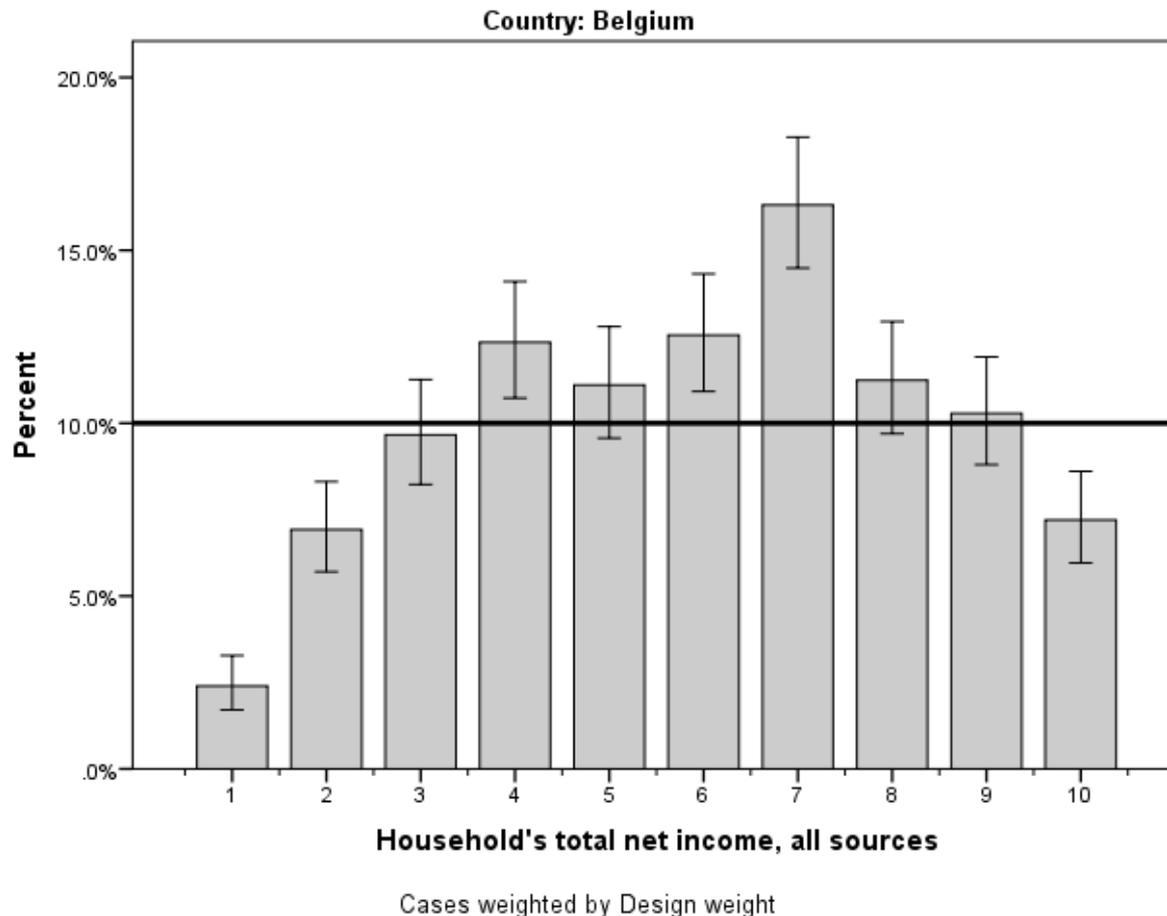
From rental or land

others

- **Problems with Belgium ESS 2008:**

- Limited number of income sources for the calculation of income brackets:
“from all sources” (ESS) <-> “total TAXABLE” (BE):
wages and salaries, unemployment benefits, profits from self-employment, old-age pensions, sickness and invalidity benefits, profits from capital and property
- Not included in the calculation are
social benefits, public and private transfers, grants, other not taxed incomes
- EU-SILC lists 23 income sources to calculate the total disposable household income, BE used 9 sources
➔ National tax register as a weak reference statistic

Belgium ESS 2010



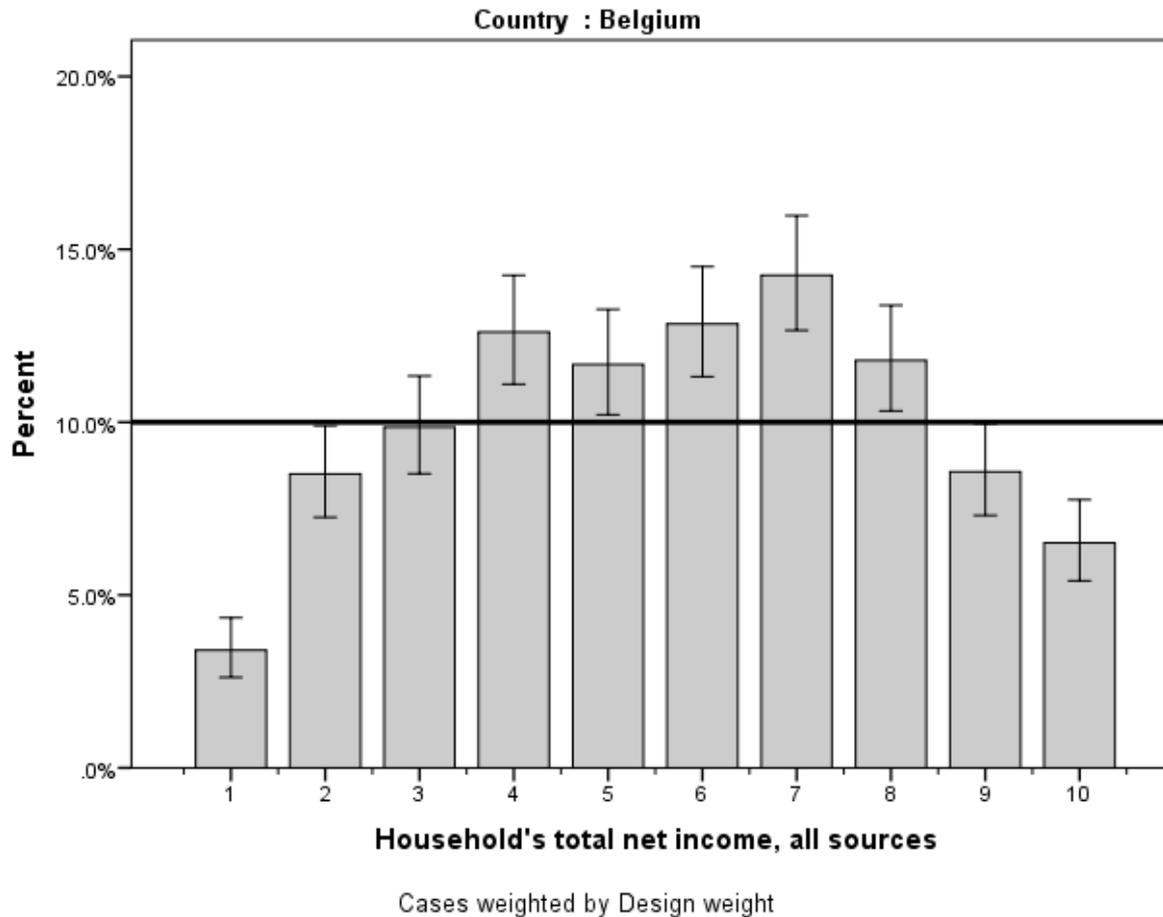
With **EU-SILC** as source for the answer categories

Error Bars: 95% Confidence Interval

Solid line = expected 10% response per category

Belgium ESS 2012

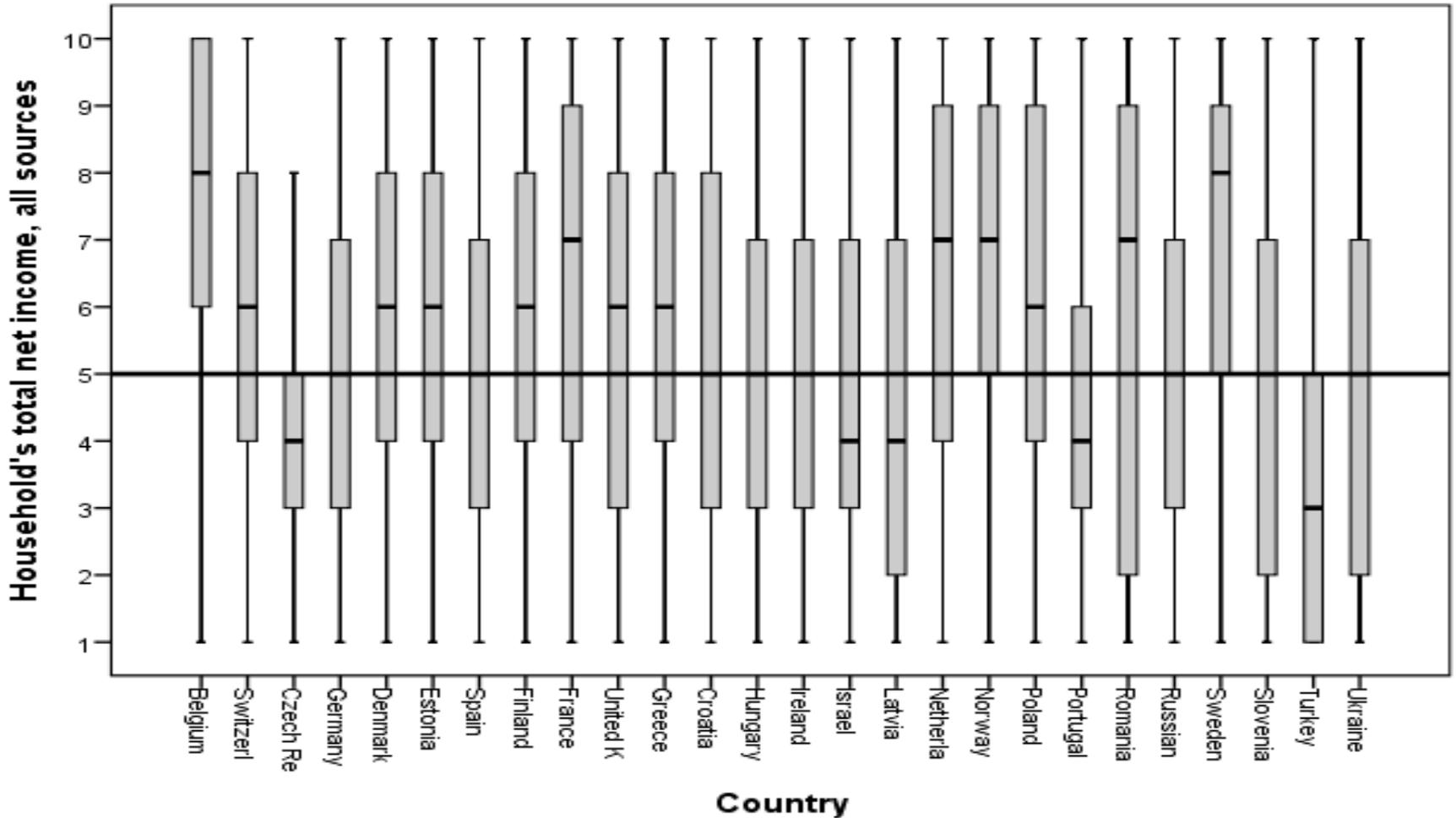
With **EU-SILC** as source for the answer categories



Error Bars: 95% Confidence Interval

Solid line = expected 10% response per category

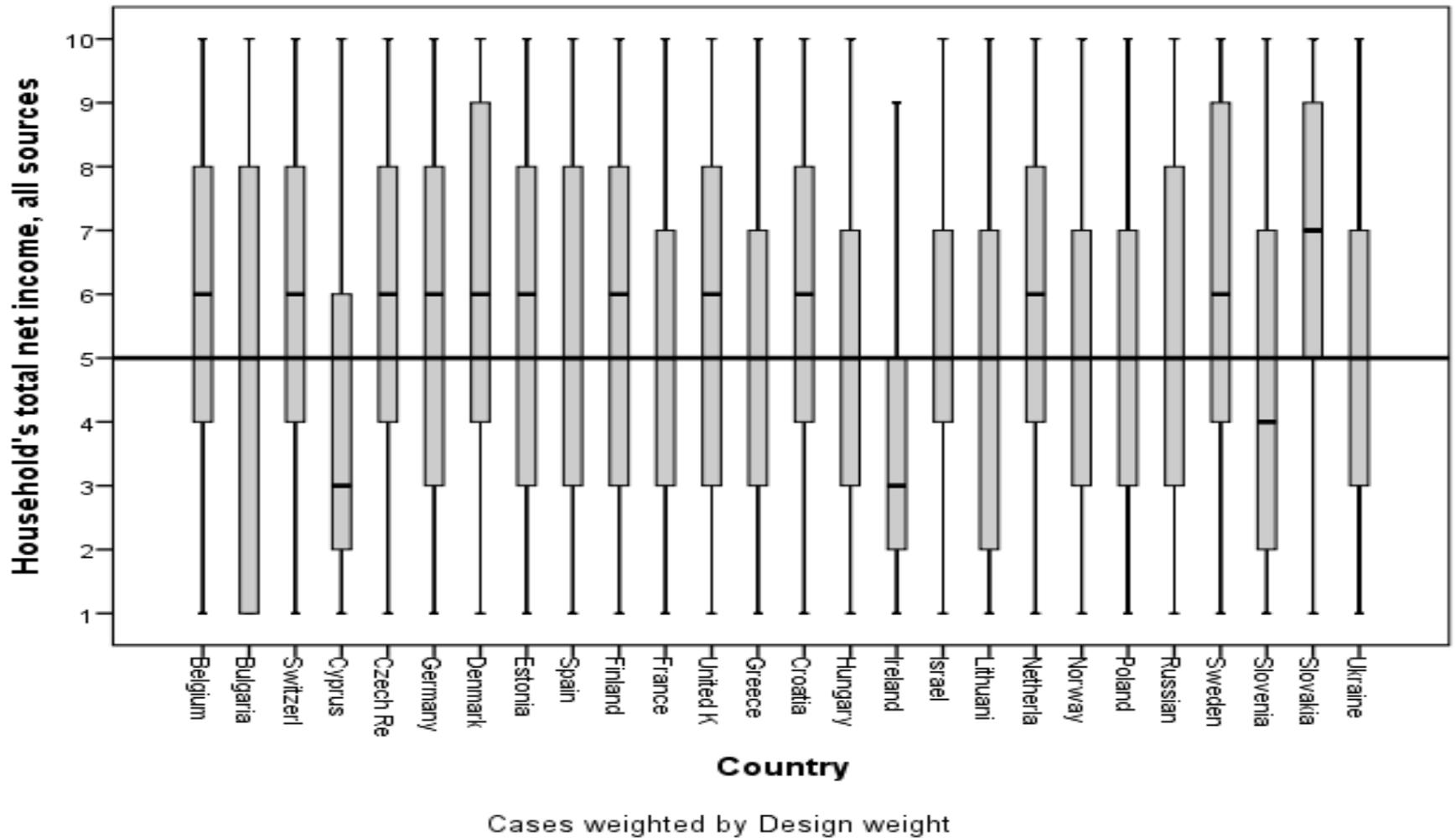
ESS 2008



Cases weighted by Design weight

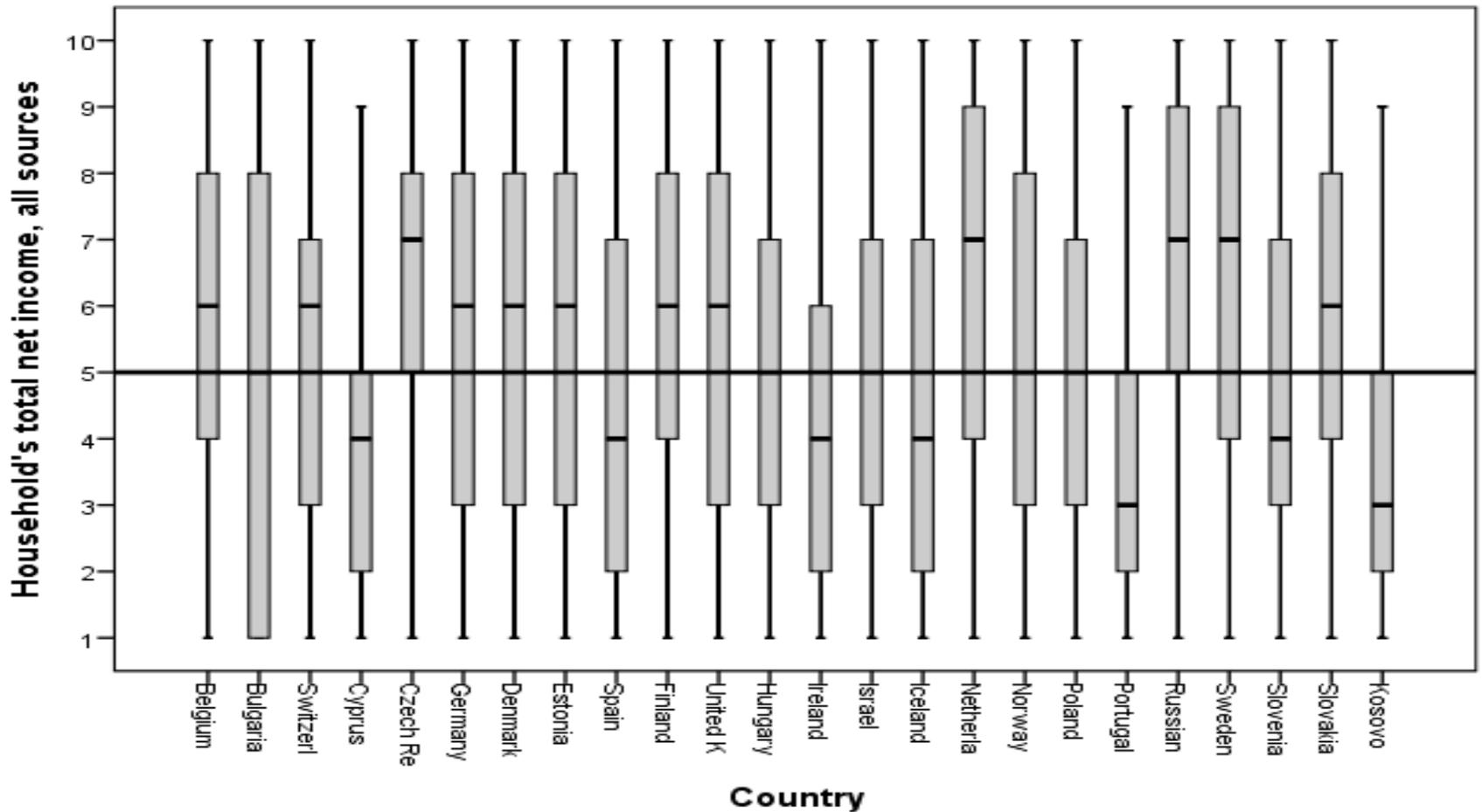
Solid line = expected mean of response = median of income distribution

ESS 2010



Solid line = expected mean of response = median of income distribution

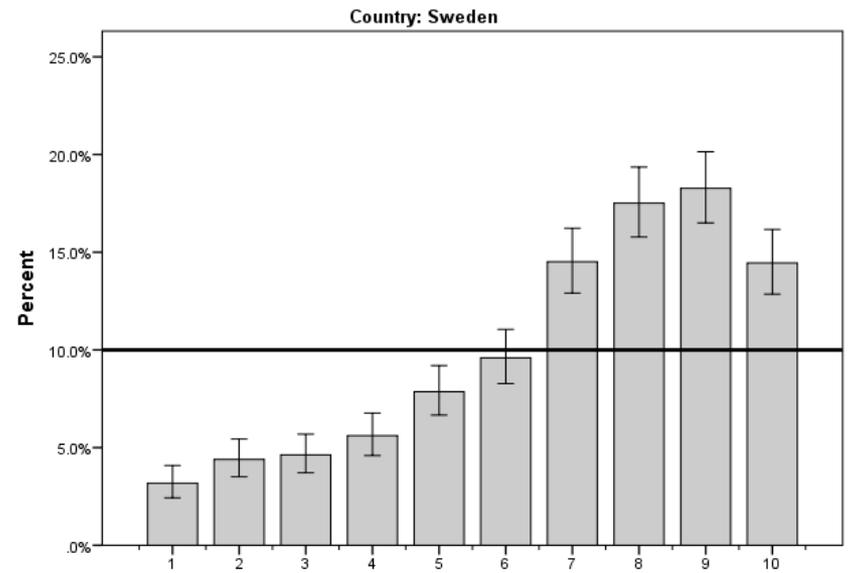
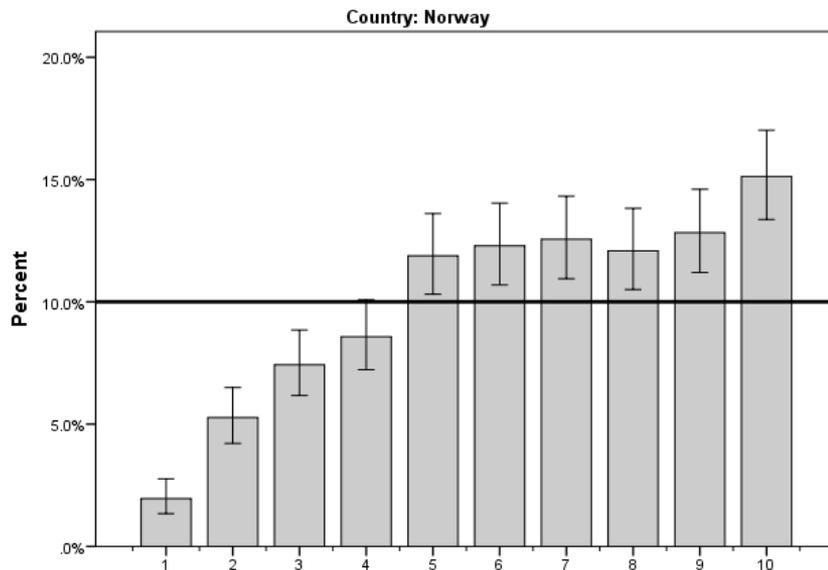
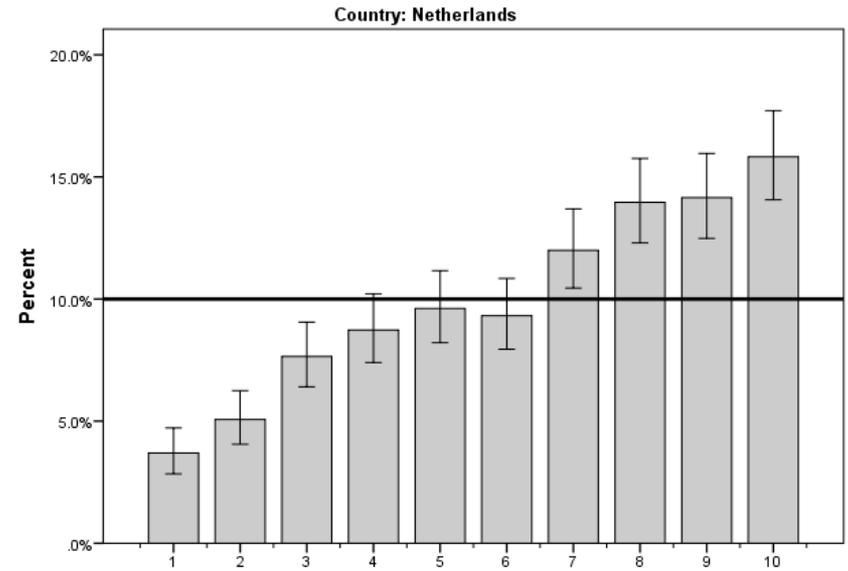
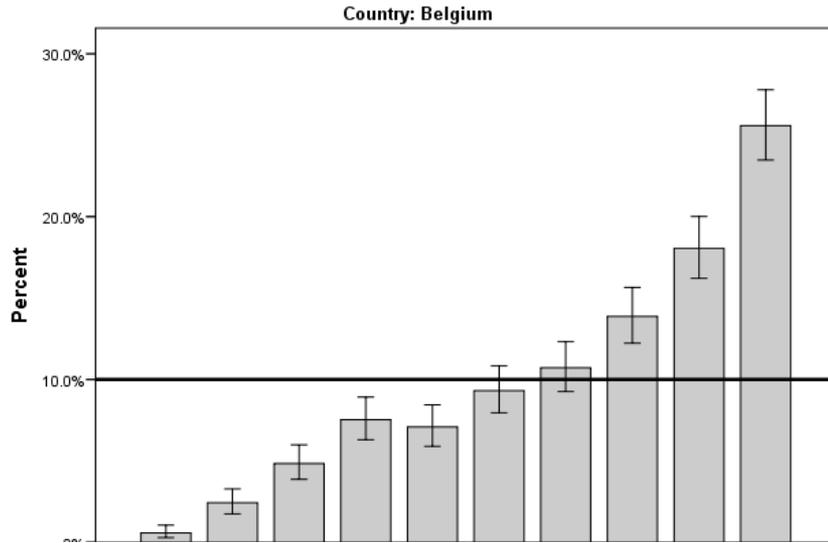
ESS 2012



Cases weighted by Design weight

Solid line = expected mean in response = median of income distribution

2008 Countries with **register** data as reference



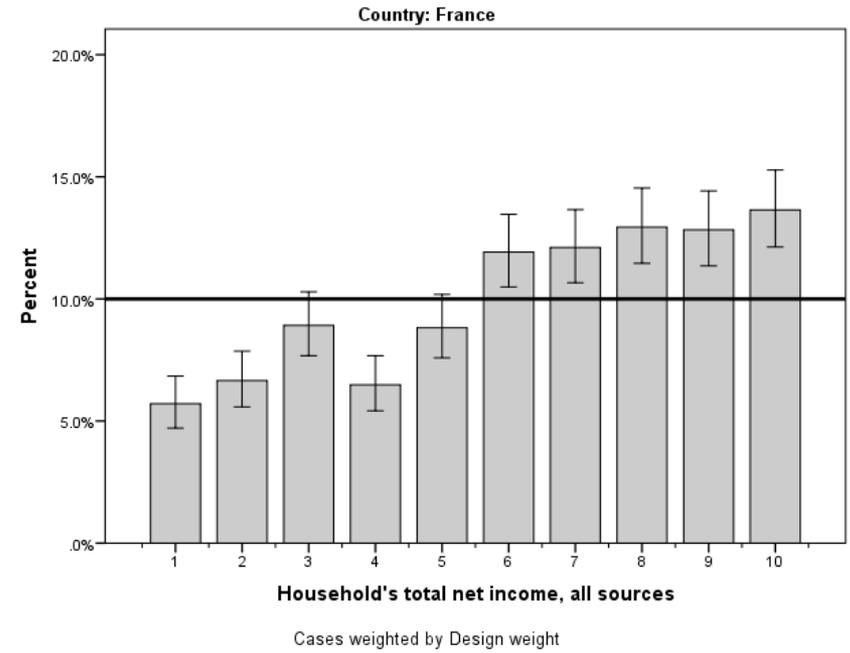
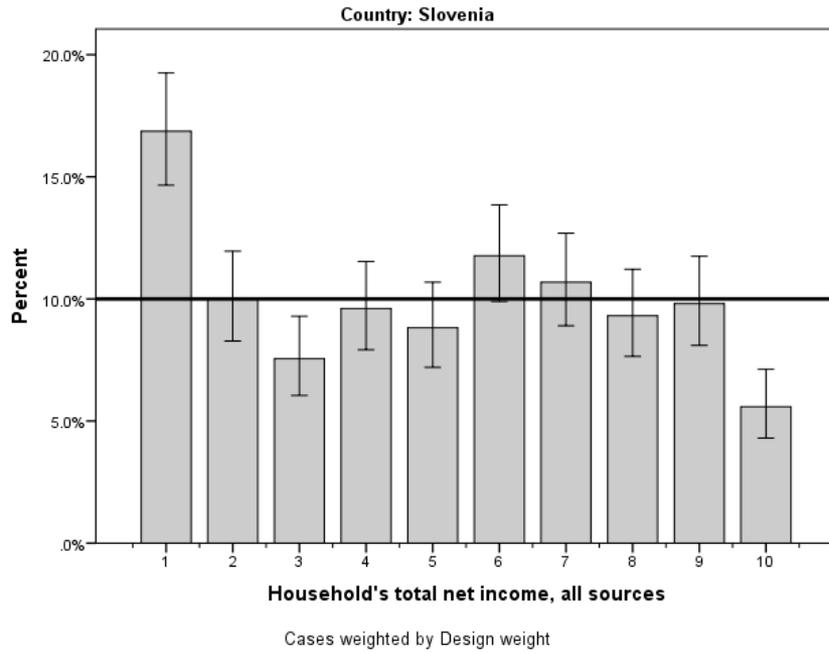
Household's total net income, all sources

Cases weighted by Design weight

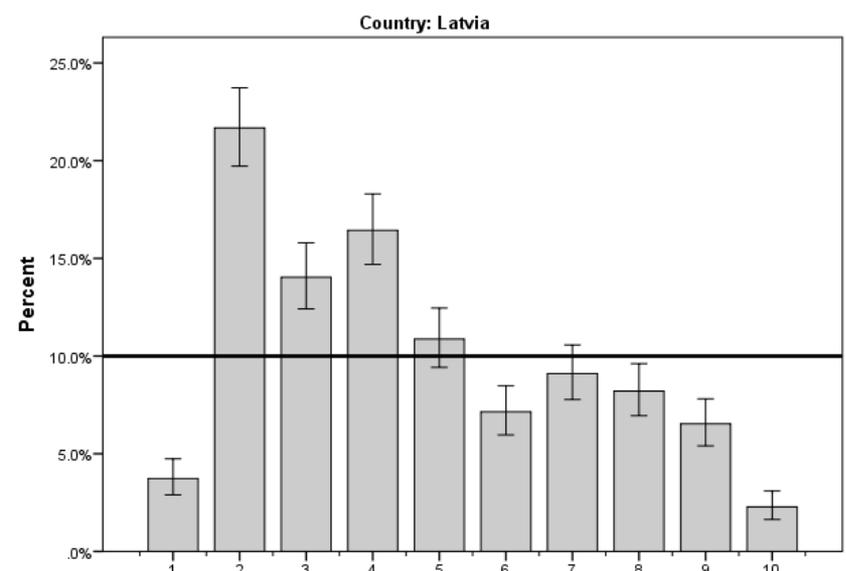
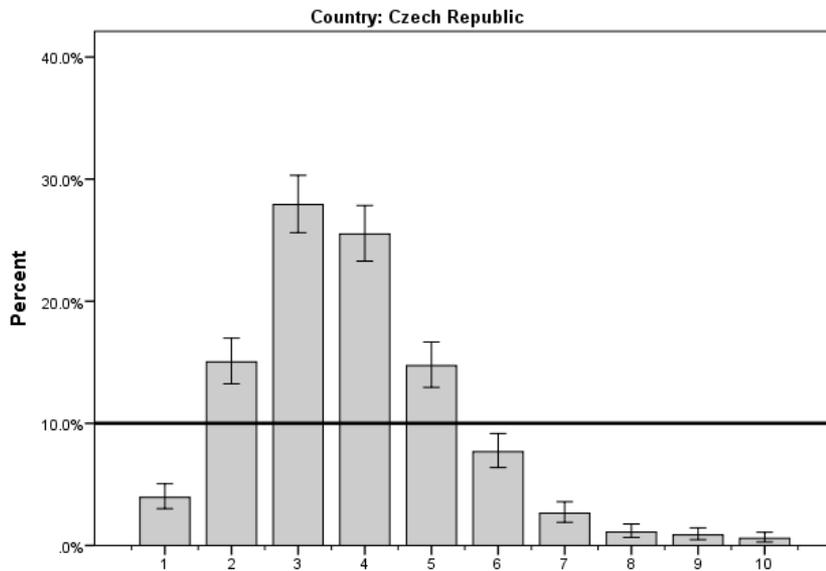
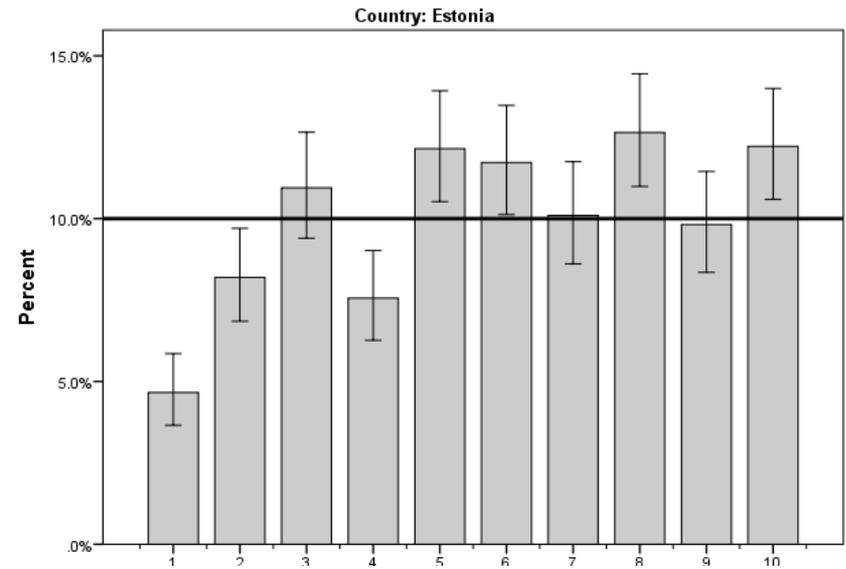
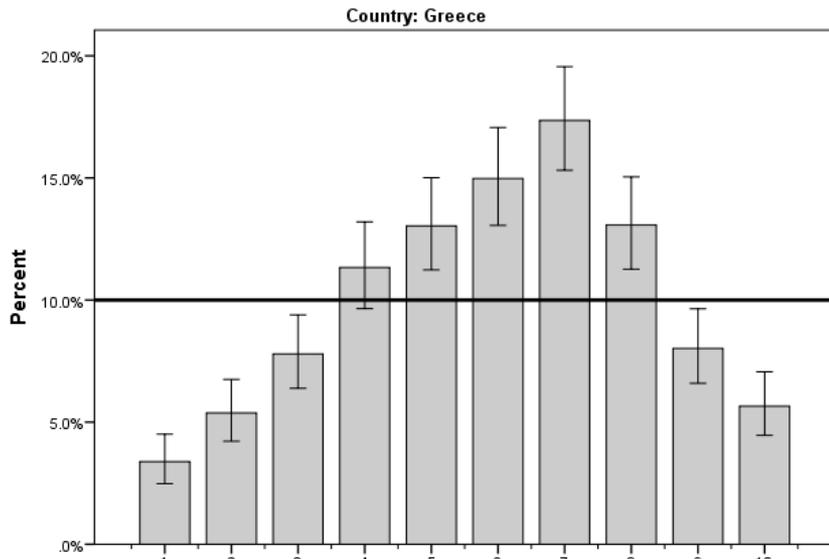
Household's total net income, all sources

Cases weighted by Design weight

2008 Countries with **census** data as reference



2008 Countries with EU-SILC data as reference



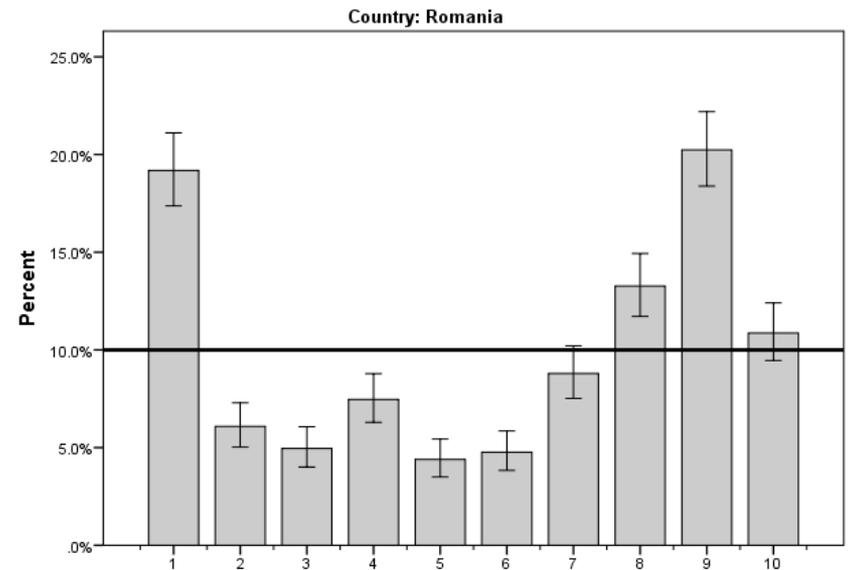
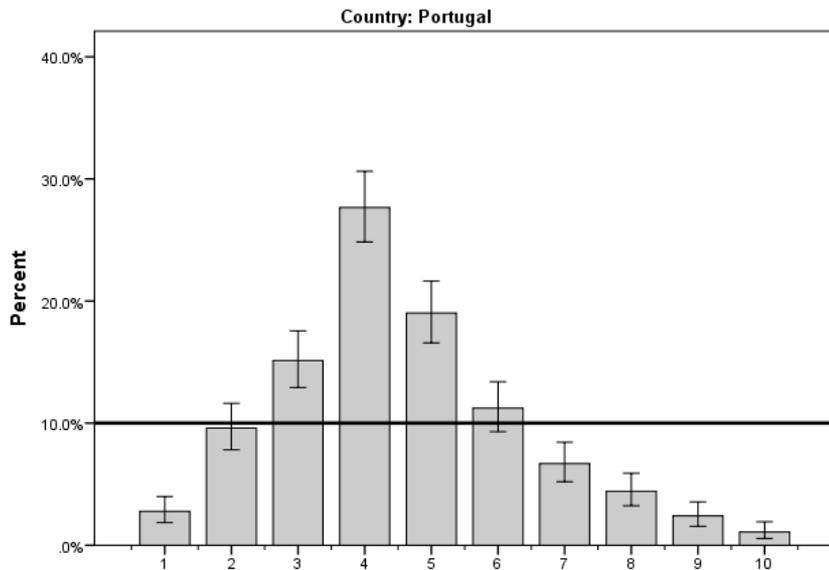
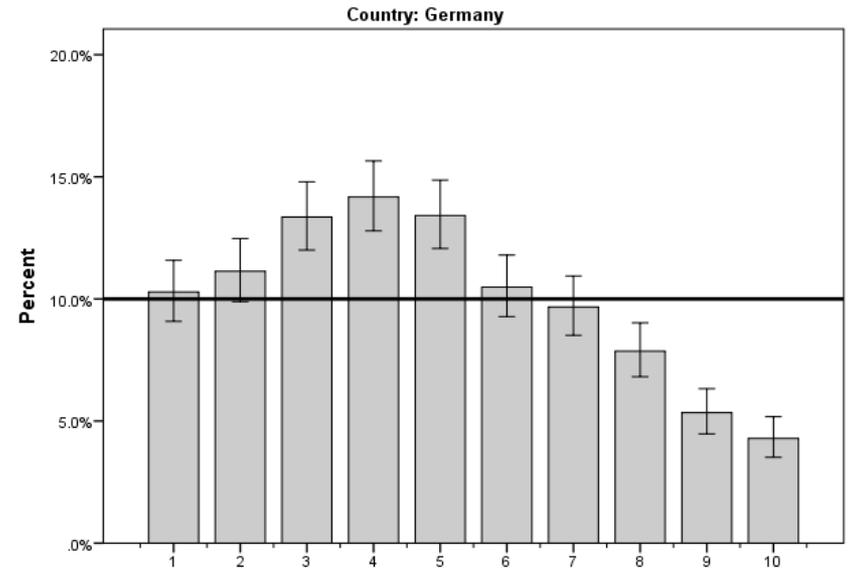
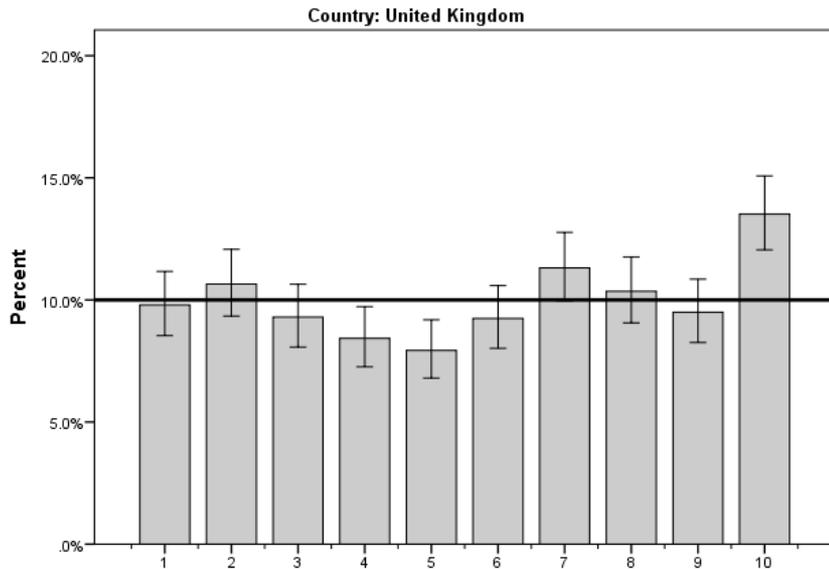
Household's total net income, all sources

Household's total net income, all sources

Cases weighted by Design weight

Cases weighted by Design weight

2008 Countries with **other surveys** as reference



Household's total net income, all sources

Cases weighted by Design weight

Household's total net income, all sources

Cases weighted by Design weight

country	2008		2010		2012	
	diviation	source	diviation	source	diviation	source
Belgium	large	register	medium	SILC	small	SILC
Bulgaria			large	register	large	register
Croatia	small	survey	medium	survey		
Switzerland	medium	survey	small	survey	small	survey
Cyprus			large	SILC	large	SILC
Czech Rep	large	SILC	medium	SILC	medium	SILC
Germany	medium	survey	small	census	small	census
Denmark	small	register	medium	register	small	register
Estonia	small	SILC	medium	SILC	small	survey
Spain	medium	survey	medium	survey	large	survey
Finland	small	survey	small	survey	small	survey
France	small	census	small	survey		
UK	small	survey	small	survey	small	survey
Greece	medium	SILC	medium	SILC		
Hungary	medium	survey	medium	survey	small	survey
Israel	medium	survey	large	survey	small	survey
Kosovo					large	survey
Latvia	large	SILC				
Lithuania			large	survey		
Netherlands	medium	register	small	register	medium	register
Norway	medium	register	small	register	small	register
Poland	small	survey	small	survey	medium	survey
Portugal	large	survey			large	SILC
Romania	large	survey				
Russian Fed	large	survey	small	survey	large	survey
Sweden	large	register	large	survey	medium	survey
Slovakia			medium	SILC	small	SILC
Slovenia	small	census	medium	SILC	medium	SILC
Turkey	large	survey				
Ukraine	medium	survey	small	survey		
Ireland	medium	survey	large	SILC	large	SILC
Iceland					large	survey

A deviation is deemed to be **large** if at least one response category deviates by **at least 10 % points** from the expected 10 percent mark.

A deviation is considered to be **medium** if at least one response category deviates by **at least 5 % points** from the ten percent mark.

Deviations of **2.5 % points** from the expected 10 % share are deemed to be **small**.

Belgium, Germany and Sweden changed the data source about household income distribution and obtained better results in the ESS surveys

Summary:

source

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1,00 SILC	19	24.7	24.7	24.7
2,00 survey	41	53.2	53.2	77.9
3,00 register	13	16.9	16.9	94.8
4,00 census	4	5.2	5.2	100.0
Total	77	100.0	100.0	

deviation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1 large	22	28.6	28.6	28.6
2 medium	26	33.8	33.8	62.3
3 small	29	37.7	37.7	100.0
Total	77	100.0	100.0	

source * deviation Crosstabulation

Count

		dev			Total
		1 large	2 medium	3 small	
source	1,00 SILC	7	9	3	19
	2,00 survey	11	13	17	41
	3,00 register	4	4	5	13
	4,00 census	0	0	4	4
Total		22	26	29	77

Out of 29 countries with small deviations 20 countries used national surveys or SILC about the income distributions

There are no statistical relations between the used data sources and the response frequencies about the “total net household income” in the surveys

			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.071	.039	1.767	.077
		source	.000	.000	.	.
		dev Dependent	.125	.068	1.767	.077
Nominal by Nominal	Phi	.375			.093	
	Cramer's V	.265			.093	
	Contingency Coefficient	.351			.093	

Convergent and criterion validity in ESS 2008:

country	EduIvl → HHincome	HHincome → ISEI	HHincome → SIOPS
	Somers' d	Eta squared	Eta squared
<i>All countries</i>	.326	.131	.117
BE	.385	.138	.139
CH	.320	.144	.140
CZ	.284	.077	.071
DE	.275	.169	.166
DK	.324	.122	.129
EE	.261	.071	.071
ES	.394	.172	.152
FI	.373	.161	.147
FR	.374	.200	.174
GB	.381	.149	.158
GR	.314	.137	.095
HR	.409	.095	.085
HU	.391	.172	.163
IL	.295	.135	.125
LV	.298	.137	.134
NL	.352	.149	.126
NO	.273	.107	.095
PL	.361	.144	.119
PT	.417	.209	.135
RO	.401	.174	.164
RU	.287	.047	.034
SE	.288	.126	.105
SI	.426	.137	.132
TR	.418	.304	.141
UA	.297	.071	.059

13 countries out of 25 reach all the expected validities for the relationships between

Level of education → HHincome
 HHincome → socio-economic status
 HHincome → occupational prestige

Conclusion on construct and face validity:

- shows that the new income variable reflects national income distributions better than the old question
- income categories built on the national deciles eliminates the appearance of empty answer categories in the countries
- census information on income is the most reliable base to calculate the income deciles used for the national answer categories
- (tax-) registers do not cover all household income sources; e.g. private transfers, not taxed income sources, etc
- (tax-) registers are difficult to aggregate incomes on the household level , because of incomplete memberships in housekeeping units
- surveys and EU-SILC introduce biases because of systematic non-response and non-contact to particular populations; e.g low income households