Luxembourg Income Study Technical Paper Series

Technical Paper No. 1

The Luxembourg Wealth Study: Technical Report on LWS Income Variables

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June 2007

Luxembourg Income Study (LIS), asbl

THE LUXEMBOURG WEALTH STUDY:
TECHNICAL REPORT ON LWS INCOME VARIABLES

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THIS REPORT HAS BEEN WRITTEN USING THE TEST VERSION OF THE LWS DATA. VARIABLE NAMES AND RESULTS REFER TO THE TEST VERSION, AND THE REVISED INCOME RESULTS MIGHT BE SLIGHTLY DIFFERENT.

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1. Introduction

The purpose of the Luxembourg Wealth Study (LWS) project is to create a cross-country comparable wealth database, which should also include a set of aggregated income variables. These aggregates should have common elements with the income variables that are included in the Luxembourg Income Study (LIS) database to preserve comparability with the two projects.

The aim of this report is to provide a guide to the creation and contents of income variables included in the first (beta) version of the Luxembourg Wealth Study database and assess their comparability with a subset of LIS income aggregates.

In the first part of the report, the LWS income variables are defined and presented in conceptual terms, followed by a section that describes the availability and comparability of the income variables in surveys of the participating countries. Finally, a subset of summary components of LWS and LIS income variables are compared.

2. LWS income variables: conceptual framework

LWS income variables are largely based on the well proven concepts and long tradition of LIS harmonization. Recommendations of the Canberra group (2001) are equally acknowledged. There is always a substantial amount of judgment involved in defining variables, especially when it comes to income aggregates. In spite of this, LIS concepts are applied when defining summary income aggregates and other variables, in order to preserve continuity between the two projects. LWS offers more aggregated income variables than LIS does.

Since the main income components have been constructed following the LIS rules, it is possible to offer a fully comparable disposable income variable in conceptual terms. In addition, LWS provides an extended version of LIS disposable income, the so called LWS disposable income (DPIW), serving as a primary income concept for the LWS data. The additional sub-components comprising DPIW are by and large available also in LIS datasets, but these variables are not included in any income aggregate in LIS.

The list of LWS income variables and their correspondence to LIS variables is shown in table 1. The LWS database contains 25 household level income variables and

eight summary income variables derived from the household variables. These main summary components are earnings (EARNINGW), factor income (FIW), market income (MIW), gross income (GIW), disposable income following LIS standards (LIS_DPI), LWS disposable income (DPIW) and extended disposable income (DPIT). Additionally, there are eight variables providing information on earnings and pension income for the household's head and spouse/partner.

The LIS disposable income concept is based on gross income less mandatory contributions and income taxes. In terms of LWS income variables, it can be expressed as follows:

$$LIS\_DPI = GIW - CONTRIB - INCTAX$$

The LWS disposable income concept is based on this disposable income concept augmented by imputed rent for owner-occupied dwelling, and by subtracting wealth/property taxes, interest payments and private regular transfer payments. First three components - imputed rent, wealth taxes and interest payments - are wealth related. In principle, private transfers should have been deducted already from LIS disposable income, but since it is not in the current LIS definition, those transfers are deducted here.

$$DPIW = LIS\_DPI + NCPRI - WLTHTAX - INTPAID - PTPAID$$

where LIS_DPI= LIS disposable income, NCPRI= imputed rent for owner occupied dwelling, WLTHTAX= regular wealth taxes, INTPAID= interest paid, PTPAID= private transfers paid.

This definition leans on the Canberra group's (2001) definition of disposable income. According to the definition, regular taxes on wealth, regular inter-household cash transfers and transfers to non-profit institutions should also be included in negative transfers together with income taxes and social security contributions. These transfers should be deducted from total income, which should include imputed rent of owner-occupied dwellings. Ideally, interest payments should be deducted directly from property income, but for practical reasons, i.e. to get income aggregates comparable to LIS, interest paid are deducted from LIS disposable income component. In addition to the Canberra group definition, LWS introduced another disposable income concept, so called DPIT, which augments the LWS disposable income by realized capital gains. This concept provides broader view on households' financial situation in terms of income.

A detailed variable definition[1] can be found in Appendix A. The present variable list defines the ideal structure for the income variables, following LIS and the Canberra group. In practice it was sometimes difficult to follow since the required variables were not always available or were provided too aggregated level.

It should be also noted that these variables are prepared for the beta version of the LWS database, so the final variable list in the alpha version might be different. Possible changes will be based on feedback from the users of the beta-version and on the ongoing revision of some LIS income variables[2]. Adjusting to LIS revisions means that at least some income variables will be moved to different slot, for example classification of public occupational pensions is likely to change for few countries.

3. Availability of LWS income variables in participating countries

The purpose of this section is to present the methodology behind LWS income variables harmonization and the availability and comparability of data in each country. Countries in the first phase of LWS include Canada, Cyprus, Finland, Germany, Italy, Norway, Sweden, the U.K. and the U.S. which provides two different surveys.

The data for LWS come from varying sources, with some surveys providing more detailed information than others, and unit of analysis being different across surveys (Sierminska, 2005). This affects the availability and comparability of income data as well. Some countries provide data from registers and interviews, many only from interviews. Sometimes data is imputed or simulated, such is the case for taxes in the U.S, the U.K and Germany[3].

[1] Note that the variable definitions are largely based on LIS definitions, which also follow the Canberra group http://www.lisproject.org/techdoc/variabdef.htm

[2] LIS has revised its variable list by adding for example new labor market variables and pension variables to ensure as accurate and user-friendly database as possible. The revised database for wave 5 will be available on the beginning of 2007.

[3] For the U.S. SCF, the simulation of federal taxes was carried out in-house using National Bureau of Economic Research (NBER) TAXSIM model (accessible at www.nber.org/taxsim, for details see Feenberg and Coutts, 1993) and following a program provided by Kevin B. Moore from Federal Reserve Board (kevin.b.moore@frb.gov). His program can be accessed from http://www.nber.org/~taxsim/to-taxsim/. For Germany taxes are fully simulated in German Institute of Economic Research (DIW) following Schwarze(1995), and for the U.K. we use Cross National Equivalent File (CNEF) tax variable which is constructed by Elena Bardasi, John A. Rigg and Stephen P. Jenkins of the Institute for Social and Economic Research at the University of Essex. CNEF tax variable is used also for the U.S. PSID and they are simulated by Cornell university using TAXSIM. Method of estimating PSID tax burdens is described in Butrica and Burkhauser (1997).

The availability matrix of income components is presented in table 2. When looking at the summary components, earnings and property income are available for all countries, and gross income and disposable income are available in nearly every dataset. There are certain variables – like interest paid on mortgages and interest paid on other loans - that are not available for most countries, but it was decided to add them to stress the importance and wish to have them in the future.

There also exist differences in variable comparability between LWS countries. Besides the unit of analysis, the main sources of differences are the availability of certain income components and the level of aggregation of variables.

Differences due to the level of aggregation of original survey variables affect primarily the sub-components of summary income variables. For example, in Canada it was not possible to separate all different transfers or sub-components of property income. Also Finland provided rather aggregated variables, e.g. all negative transfers were included in one variable. Even though it was not possible to fill the correct slot, the LWS aggregate components, especially disposable income, are mostly unaffected.

The most problematic areas regarding data availability concern taxes and contributions. For the U.S. SCF it was not possible to estimate state taxes and for Canada mandatory contributions were not available, which results in the overestimation of disposable income. For Cyprus, on the other hand, taxes and contributions are not available at all, so net income estimates cannot be provided. The reverse situation exists for Italy which only has net income data so variables using gross incomes cannot be directly compared.

Finally, users should pay attention to the measurement period of income. LWS datasets are named after the wealth reference year, and this does not always correspond with the income reference year. Table 3 shows the LWS wealth and the income reference years. In more than half of the datasets the reference year of wealth and income is the same, but for the other datasets it differs and thus should be taken into account when analyzing the data.

Appendix C provides detailed description of the variable contents for a subset of income variables: the variables that are added or subtracted from LIS disposable income concept to reach LWS disposable income definition. The appendix shows that there are differences between the countries in defining certain variables, for example imputed rent,

which requires cautious interpretation when comparing countries. For the other LWS income variables details of harmonization for each country and dataset can be found from the country and variable level online documentation.

4. Comparison of LIS and LWS income aggregates and Key Figures

In the last part of this report, a brief analysis of LIS and LWS summary income variables is carried out to compare income estimates between the two projects. Additionally, certain indicators of poverty and inequality, based on methodology of LIS Key Figures[4], are calculated from LWS data and compared to corresponding LIS figures.

Conceptually, LIS and LWS summary variables should provide comparable estimates since income concepts are similar for most income aggregates. Especially this is the case when the underlying survey is the same.

However, in some cases data come from different surveys. Variations in survey techniques have an effect on the outcome, for example, the extent of income under-reporting. These differences may result to varying values in income components, and comparisons between mean and median values can be difficult. Median values are not affected by extreme values unlike means, so median values estimated from LWS data should be better comparable with medians estimated from LIS data when underlying survey differs.

Appendix B provides a list of original surveys and information related to samples[5] in the LWS beta version and their corresponding, in terms of survey year, LIS datasets. In about half of the countries the surveys in LWS and LIS are the same, and only the survey year differs.

4.1. Income aggregates and ratios

Bearing in mind the above mentioned issues, table 4 shows both mean and median values of earnings, gross income and LWS and LIS disposable incomes estimated from LWS and LIS data. Non-zero values are excluded from the analysis and household

[4] See http://www.lisproject.org/keyfigures.htm

[5] Note the U.S. SCF uses multiple imputation techniques. The number of observations in the data set (22210) is five times the actual number of respondents (4442).

weights are employed. Amounts are converted in 2002 U.S. dollars using Consumer Price Indices and Purchase Power Parities (OECD&Eurostat, 2005). Annual growth rate on income is not taken into account.

Since the unit of analysis differs for some countries, table 5 shows also per capita disposable household income for LIS disposable income concept[6]. They are calculated using the same conversion methods as above; only exception is that person weights are used instead of household weights. Table 6 summarizes the comparison of the main income components by showing the ratios of median household incomes and per capita disposable income of LWS and LIS. Referring to these tables it seems that income estimates between LWS and LIS compare well and major differences depend on the underlying survey. This also indicates that income growth between the survey years has not been large. Even if the survey differs, differences in ratios are in most cases within 3%. In some cases there are bigger differences, and these differences together with similarities are attempted to explain as below.

When the underlying survey is the same, the ratio of LWS and LIS household income medians is close to one and both mean and median estimates are close. Italy, Sweden and Norway have the same survey for LIS and LWS, with only survey year being different. The income estimates are very similar for Italy and Sweden, also indicating that the growth rate has not been high between the two survey years. For Norway, on the other hand, median and mean values estimated from LWS incomes are clearly higher than those of LIS, which can be equally explained by the general income growth between 2000 and 2002 according to Statistics Norway. Also Germany has the same survey for LIS and LWS, but for LWS data an additional sample of high-income earners was added. Nevertheless, estimates seem to be highly corresponding**.**

For the rest of the countries the underlying survey is different producing larger differences. Income data for Canada comes from different surveys but the survey year is the same. Mean and median values of income aggregates from LIS data are somewhat higher than the median values estimated from LWS data (table 4). Main reason for differences seems to be the unit of analysis: LWS data is shown on family level, whereas LIS data is on household level. When looking at the per capita estimates, differences are smaller (table 5).

[6] This was not possible to calculate for Cyprus since net income is not available.

Besides the different survey, the unit of analysis seems to be one reason for differences between the U.S. datasets as well. In the U.S. SCF, which is used in LWS, the unit of analysis is the primary economic unit (PEU), whereas in CPS, which is used in LIS, the unit of analysis is the household. CPS household measure includes incomes of all household members, whereas in the SCF the household members and their respective incomes can belong to different families, hence they would belong to different PEUs, which has been shown to explain differences in the levels of medians (Aizcorbe, Kennickell and Moore, 2003). A detailed definition of unit of analysis in LWS surveys can be found from LWS progress report (Sierminska, 2005). Per capita estimates eliminate the effect of the unit of analysis, and the difference between LIS and LWS disposable household income estimates becomes notably smaller.

The unit of analysis in the second LWS survey for the U.S., PSID, is also family unit, which can equally explain the differences. Whereas median household earnings are the same, PSID seems to capture more gross income than CPS. On per capita –level the difference in disposable income become larger.

In Finland, earnings seem to be slightly higher in LIS than in LWS, but other aggregates are almost identical. The differences in earnings can be partly explained by variable construction: in some cases income components were not possible to allocate to the same place in LWS compared to LIS. The reason for the different variable construction is the aggregation of the original data, which was discussed in the previous section. Less aggregated data would solve this problem.

The income estimates for the U.K. are higher in LIS. LIS estimates are based on Family Resources Survey, which is designed as a cross-sectional survey, has larger sample size and collects more detailed income information than British Household Panel Survey (Department for Work and Pensions, 2005), which can explain differences in the earnings. Cyprus is not yet participating in LIS but the estimates for LWS are shown in table 4.

Missing values in income components are shown in table 7[7]. In most datasets there are no missing values or only a very small percentage is missing. The only

[7] LIS figures are not presented because there were no missing values for these income components.

exception is Cyprus where large item non-response leads to approximately a 20 percent loss of observations in gross- and disposable incomes[8].

4.2. Key Figures: poverty rates and Gini coefficient

Relative poverty rates of the total population, children and elderly, as well as Gini coefficient, are presented in table 8. The figures for LIS are taken from the LIS Key Figures online[9], and the figures for LWS are calculated using the same methods as in LIS Key Figures. Estimates for LWS are based on the disposable income concept that is comparable to LIS disposable income, and the original survey years are used.

In general, poverty rates seem to be consistent across countries, despite differences in data source. For example in Finland, poverty has increased between 1998 and 2000, which is consistent with earlier LIS results[10]. Italy, Norway and Sweden, where the figures of LIS and LWS are based on the same underlying survey, poverty rates show only small a change between the income years 2000 and 2002.

There are more variation in poverty rates and Gini coefficients if the figures are calculated from different survey, especially if a sample of high income earners is added. Clearest difference can be seen in the figures based on the U.S. SCF, which indicate clearly higher poverty rates than the other U.S. surveys in the income year 2000. This seems to happen also in Canada, where the income year is the same but LWS has a survey with the high income earners. In both countries the Gini coefficient is highest when it is based on the survey which over samples the wealthy.

This preliminary examination shows that although LIS and LWS provide mainly comparable estimates of mean and median income, more caution should be used when the underlying survey is different.

[8] Cyprus provides one imputed total income variable which does not correspond to any of the LWS income aggregates so unfortunately we could not use it.
[9] See: http://www.lisproject.org/keyfigures/povertytable.htm

[10] According LIS Key Figures online poverty rates were lower in 1995 than in 2000 which mean that the trend remains the same when examining LWS data.

5. Conclusions

The income variables in the LWS beta-version follow extensively the definitions of LIS and the Canberra group. There is a wide variable availability for the participating countries in the first phase of the project, and for most countries the LWS database offers a possibility to carry out analysis using different disposable income concepts.

When comparing LIS and LWS datasets, differences were expected due to the varying unit of analysis and type of survey. Despite these differences, it seems to be possible to compare LIS and LWS variables to a certain extent, even if the underlying survey is different. Since the conceptual differences between LIS and LWS have been eliminated, income aggregates are particularly well comparable.

As a remark for the future, it would be beneficial to have less aggregated data for some countries to preserve full comparability. Greater availability of certain variables, e.g. imputed rent and capital gains, would make the database richer and allow provision of fully comparable LWS disposable income concept for even more countries.

The final number and form of LWS income variables will be decided after evaluation of the beta phase. Equally, LWS will adapt to changes that LIS database go through in the beginning of 2007. We also encourage users to submit questions and suggestions regarding the LWS database since their input will help us to improve it. All communication can be addressed to the LWS project coordinator Eva Sierminska (sierminska@lisproject.org).

Table 1. LWS income variables and their correspondance to LIS variables

LWS NAME	VARIABLE LABEL	CORRESPONDING LIS NAME
WAGE	Wages and Salaries	v1 / v1net
SELF	Self Employment Income	v4 + v5
CPRI	Cash Property Income	v8
CPRI1	Cash property income -interests and dividends	v8s1
CPRI2	Cash property income -rents	v8s2
CPRI3	Cash property income -private savings plans	v8s3
CPRI4	Cash property income -royalties	v8s4
CPRI5	Cash property income -other	v8sr
OCCPEN	Occupational and other pensions	v32 + v33
OCPEN1	Occupational pensions	V32s1+V32s2
OCPENO	Other pensions	V32sr
PUBPEN	State old-age and survivors benefits	v19
PUPEN1	Universal old-age and survivors pensions	V19s1a/V19s3/V19s4
PUPEN2	Employment related old-age and survirors pensions	V19s1b/V19s1c/V19s3/V19s4
PUPENO	Other state old-age and survivors pensions	V19sr
SOCIBEN	Social insurance transfers (excl. pubpen)	v16 to v18, v20 to v24
MNSBEN	Social assistance cash benefits	v25
NRCBEN	Near cash benefits	v26
PRIVTRA	Total private regular transfers	v34 + v35
OTHCINC	Other cash income	v36
CONTRIB	Total mandatory payroll taxes	v7 + v13
INCTAX	Income tax	v11
WLTHTAX	Wealth/Property taxes	v12
INTPD	Interest paid	v8x
INTPDMG	Interest paid on mortgages	-
INTPDOL	Interest paid on other loans	-
PTPD	Private regular transfers paid	v34x + v35x
GAIN	Capital Gains	v37s1
NCPRI	Non-cash property income, Imputed Rent	v9
GIFT	Non-regular gifts	-
LUMP	One-time lump sum income	v37sr
VARIABLES FOR HEAD AND SPOUSE		
EARNH	Earnings Head	pg(n)wage + pself
EARNS	Earnings Spouse	pg(n)wage + pself
OCCPENH	Occupational pensions Head	pprvpen + ppubpen
OCCPENS	Occupational pensions Spouse	pprvpen + ppubpen
PUBPENH	Public pensions Head	psocret
PUBPENS	Public pensions Spouse	psocret
PENH	Pensions Head	pprvpen + ppubpen + psocret
PENS	Pensions Spouse	pprvpen + ppubpen + psocret
SUMMARY INCOME VARIABLES		
EARNINGW	Earnings (= WAGE + SELF)	EARNING
FIW	Factor Income (= EARNINGW + CPRI)	FI
MIW	Market Income (= FIW + OCCPEN)	MI
TRANS	Transfer Income (= PUBPEN + SOCIBEN + MNSBEN + NRCBEN + PRIVTRA)	TRANSI
GIW	Gross Income (= MIW +TRANS + OTHCINC)	GI
LIS_DPI	Disposable income, LIS standards (= GIW - CONTRIB - INCTAX)	DPI
DPIW	LWS Disposable Income (= DPIW - WLTHTAX - INTPD - PTPD + NCPRI)	-
DPIT	Additional Disposable Income (= LWS_DPI + GAIN)	-

Table 2. Availability of LWS income variables in participating countries

	AT 2004	CA 1999	CY 2002	FIN 1998	GE 2002	IT 2002	NO 2002	SE 2002	US 2001 SCF	UK 2000	US 2001 PSID
VARIABLE NAME			**GROSS**			**NET**					
WAGE	I	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SELF	I	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
=EARNINGW	I	YES	YES	YES	YES	n	YES	YES	YES	YES	YES
CPRI =	I	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
cpri1 +	I	I	YES	YES	YES	YES	YES	YES	YES	YES	YES
cpri2 +	I	I	YES	I	YES	YES	I	YES	YES	YES	YES
cpri3 +	I	I	I	I	YES	YES	YES	YES	YES	YES	YES
cpri4 +	I	I	YES	I	I	I	I	I	YES	I	YES
cpri5 +	I	I	I	I	I	I	YES	I	I	I	YES
=FIW	I	YES	YES	YES	YES	n	YES	YES	YES	YES	YES
OCCPEN =	I	YES	YES	I	YES	YES	YES	YES	YES	YES	YES
ocpen1 +	I	I	I	I	YES	I	YES	YES	I	YES	I
ocpeno +	I	I	I	I	I	YES	I	YES	I	I	I
=MIW	I	YES	YES	YES	YES	n	YES	YES	YES	YES	YES
PUBPEN =	I	I	YES	YES	YES	YES	YES	YES	YES	YES	YES
pupen1 +	I	I	I	YES	I	I	I	YES	I	I	I
pupen2 +	I	I	I	YES	I	YES	I	YES	I	YES	I
pupeno +	I	I	I	I	I	YES	I	YES	I	YES	I
SOCIBEN +	I	I	YES	YES	YES	YES	YES	YES	YES	YES	YES
MNSBEN +	I	I	I	YES	YES	YES	YES	YES	YES	YES	YES
NRCBEN +	I	I	I	I	YES	I	YES	YES	YES	YES	I
PRIVTRA +	I	YES	YES	I	YES	YES	YES	YES	YES	YES	YES
=TRANS	I	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
OTHCINC +	I	YES	I	YES	I	YES	YES	I	YES	YES	YES
=GIW	I	YES	YES	YES	YES	I	YES	YES	YES	YES	YES
CONTRIB -	I	I	I	I	YES*	I	YES	YES	YES*	YES*	YES*
INCTAX -	I	YES	I	YES	YES*	I	YES	YES	YES*	YES*	YES*
=LIS_DPI	YES	YES	I	YES	YES	YES	YES	YES	YES	YES	YES
NCPRI +	I	I	I	YES	YES	YES	YES	I	I	I	YES
WLTHTAX -	I	I	I	I	I	I	YES	YES	YES	I	YES
PTPD -	I	I	YES	I	YES	YES	YES	YES	YES	YES	YES
INTPD =	I	I	I	YES	I	YES	YES	YES	I	I	I
intpdmg -	I	I	I	YES	I	I	I	I	I	I	I
intpdol -	I	I	I	I	I	I	I	I	I	I	I
=DPIW	I	I	I	YES	YES	YES	YES	YES	YES	YES	YES
GAIN +	I	I	YES	I	I	YES	YES	YES	YES	I	I
=DPIT	I	I	I	I	I	YES	YES	YES	YES	I	I
LUMP	I	I	YES	I	YES	YES	YES	I	YES	YES	YES
GIFT	I	I	I	I	I	YES	I	I	I	I	I
EARNH	YES	I	YES	YES	YES	YES	YES	YES	YES	YES	I
EARNS	YES	I	YES	YES	YES	YES	YES	YES	YES	YES	I
OCCPENH	I	I	YES	I	YES	YES	YES	YES	YES	YES	I
OCCPENS	I	I	YES	I	YES	YES	YES	YES	YES	YES	I
PUBPENH	I	I	YES	I	YES	YES	YES	YES	YES	YES	I
PUBPENS	I	I	YES	I	YES	YES	YES	YES	YES	YES	I
PENH	I	I	YES	YES	YES	YES	YES	YES	YES	YES	I
PENS	I	I	YES	YES	YES	YES	YES	YES	YES	YES	I

YES=available

I = not available/not applicable

n = net amount

* = simulated

Table 3. Reference years for the LWS datasets.

Country	*Survey Year*	*Income Year*	*Wealth Year*	*LWS dataset name*
Austria	2004	2004	2004	at04w
Canada	1999	1998	1999	ca99w
Cyprus	2002	2001	2002	cy02w
Finland	1999	1998	1998	fi98w
Germany	2002	2001	2002	ge02w
Italy	2003	2002	2002	it02w
Norway	2003	2002	2002	no02w
Sweden	2003	2002	2002	se02w
The U.K.	2000	2000	2000	uk00w
The U.S. SCF	2001	2000	2001	uss01w
The U.S. PSID	2001	2000	2001	usp01w

Table 4. Mean and median values of selected household income components in 2002 U.S. dollars (thousands of dollars).

		EARNINGS		**GROSS INCOME**		**LIS DPI**		**LWS DPI**
		LWS	**LIS**	**LWS**	**LIS**	**LWS**	**LIS**	**LWS**
Austria	*Median*	-	-	-	-	**32.2**	-	-
	Mean	-	-	-	-	33.6	-	-
Canada	*Median*	**36.5**	**37.9**	**35.3**	**36.9**	**29.8**	**31.1**	-
	Mean	43.8	45.2	44.2	45.8	35.6	36.8	-
Cyprus	*Median*	**33.9**	-	**31.5**	-	-	-	-
	Mean	41.4	-	40	-	-	-	-
Finland	*Median*	**26.5**	**28.1**	**28.9**	**29.3**	**21.9**	**22.1**	**23.8**
	Mean	31.6	32.6	36.1	36.1	26	26.2	28
Germany	*Median*	**36.7**	**37.7**	**32.2**	**32.9**	**25.1**	**25.6**	**25.4**
	Mean	44	43.3	41.2	40.6	30.1	29.7	30.7
Italy	*Median*	**23.9**	**23.8**	-	-	**23.3**	**23.3**	**23.2**
	Mean	29.2	28.4	-	-	29	29	29
Norway	*Median*	**39.2**	**37.1**	**39.6**	**36.8**	**31**	**28.4**	**28.8**
	Mean	44.4	42.5	48.7	45.2	37.2	34	35.1
Sweden	*Median*	**28.1**	**28.1**	**29.6**	**29.6**	**22**	**21.4**	**20.6**
	Mean	33.3	33.8	36.9	37.3	26.6	26.1	24.5
The U.K	*Median*	**39.3**	**44.7**	**32.3**	**34.3**	**27.8**	**28.3**	**27.3**
	Mean	45.6	53.7	41.1	45.9	33.7	36.4	33.1
The U.S SCF	*Median*	**43.6**	**46.7**	**40.4**	**44.2**	**31.5**	**37.1**	**29.4**
	Mean	69	60.7	65.7	59.8	46.3	46.4	43.5
The U.S PSID	*Median*	**46.7**	**46.7**	**46.8**	**44.2**	**38.3**	**37.1**	**40**
	Mean	62.4	60.7	66.9	59.8	51.3	46.4	53.3

Table 5. Per capita disposable household income for LIS and LWS in 2002 U.S. dollars (thousands of dollars).

		LIS DPI	
		LWS	LIS
CANADA	**Mean**	**14.7**	**14.9**
	Median	12.3	12.6
FINLAND	**Mean**	**12**	**12.2**
	Median	10.4	10.6
GERMANY	**Mean**	**14.2**	**14.3**
	Median	11.7	12.4
ITALY	**Mean**	**10.9**	**10.8**
	Median	9.2	9
NORWAY	**Mean**	**17.3**	**15.8**
	Median	14.7	13.6
SWEDEN	**Mean**	**13.6**	**13**
	Median	11.9	11.4
THE U.K.	**Mean**	**14.7**	**15.4**
	Median	12.4	12.3
THE U.S. Scf	**Mean**	**19**	**18.2**
	Median	13	14.2
THE U.S. Psid	**Mean**	**21.4**	**18.2**
	Median	15.9	14.2

Table 6. Ratio of LWS income to LIS median income components.

	EARNINGS	**GROSS INCOME**	**LIS DPI**	**PER CAPITA LIS DPI**
Canada	0.96	0.96	0.96	**0.98**
Finland	0.95	0.99	0.99	**0.98**
Germany	0.97	0.98	0.98	**0.94**
Italy	1	-	1	**1.02**
Norway	1.06	1.08	1.09	**1.09**
Sweden	1	1	1.03	**1.04**
The U.K.	0.88	0.94	0.98	**1.01**
The U.S. SCF	0.93	0.92	0.85	**0.92**
The U.S. PSID	1	1.06	1.03	**1.12**

Table 7. Share of missing values in selected LWS income components (per cent)

	EARNINGS	GROSS INCOME	LIS DPI	LWS DPI
Canada	0	0	**0.02**	-
Cyprus	**13.6**	**20.3**	-	-
Finland	0	0	0	0
Germany	0	0	0	**0.9**
Italy	0	-	0	0
Norway	0	0	0	0
Sweden	0	0	0	0
The U.K.	**0.2**	**0.2**	**0.2**	**0.8**
The U.S. SCF	0	0	0	0
The U.S. PSID	0	0	0	**9.2**

Table 8. Poverty rates and Gini Coefficients based on disposable household income.

Country	Project	Year	Gini Coefficient	Total Population Poverty Line (Percent of Median)			Children Poverty Line (Percent of Median)			Elderly Poverty Line (Percent of Median)		
				40	50	60	40	50	60	40	50	60
Canada	LIS	1998	0.305	7.6	12.8	19.7	9.2	16.3	23.8	1.7	7.8	21.5
	LWS	**1998**	**0.316**	**8.4**	**13.2**	**19.9**	**10.2**	**15.8**	**22.9**	**1.8**	**6.1**	**20.0**
Finland	LIS	2000	0.247	2.1	5.4	12.4	1.3	2.8	8	1.1	8.5	24.8
	LWS	**1998**	**0.256**	**2.2**	**5.2**	**11.3**	**1.0**	**2.2**	**7.0**	**1.7**	**6.4**	**20.1**
Germany	LIS	2000	0.264	4.7	8.3	13.2	5.8	9	14.3	3.9	10.1	18.3
	LWS	**2001**	**0.304**	**6.6**	**11.3**	**16.8**	**7.5**	**12.4**	**18.5**	**4.6**	**10.5**	**18.7**
Italy	LIS	2000	0.333	7.3	12.7	19.9	10.5	16.6	26.5	5.6	13.7	22.2
	LWS	**2002**	**0.330**	**7.4**	**12.3**	**20.5**	**11.2**	**18.2**	**28.4**	**5.0**	**10.5**	**22.0**
Norway	LIS	2000	0.251	2.9	6.4	12.3	1.6	3.4	7.5	1.2	11.9	28.9
	LWS	**2002**	**0.257**	**3.4**	**7.2**	**13.1**	**2.0**	**4.3**	**9.5**	**0.9**	**11.0**	**27.2**
Sweden	LIS	2000	0.252	3.8	6.5	12.3	1.8	4.2	9.2	2.1	7.7	21.2
	LWS	**2002**	**0.249**	**3.9**	**6.9**	**13.3**	**2.2**	**4.8**	**10.3**	**2.0**	**7.6**	**22.5**
The U.K	LIS	1999	0.345	5.8	12.4	21.2	5.5	15.3	27	10	20.5	34.5
	LWS	**2000**	**0.324**	**8.7**	**13.5**	**20.0**	**8.7**	**14.9**	**23.1**	**8.2**	**16.1**	**27.7**
The U.S	LIS	2000	0.368	10.8	17	23.8	14.1	21.9	30.2	15	24.7	33.3
	LWS -Psid	**2000**	**0.391**	**11.3**	**17.2**	**23.1**	**16.0**	**24.3**	**32.1**	**13.3**	**19.5**	**25.4**
	LWS -Scf	**2000**	**0.431**	**13.4**	**19.2**	**27.0**	**16.1**	**23.0**	**33.2**	**14.0**	**21.1**	**29.6**

References

Aizcorbe, A., A.B. Kennickell, and Moore, K.B. (2003). "Recent Changes in the US Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances," *Federal Reserve Bulletin*, January, 2003.

Bardasi, E., S.P. Jenkins and Rigg, J.A. (1999). "Documentation for Derived Current and Annual Net Household Income Variables, BHPS waves 1-7", Institute for Social and Economic Research Working Paper 99-25, University of Essex, Colchester.

Bardasi, E. and Jenkins, S. P. (2004). "Documentation for Derived Current and Annual Net Household Income Variables, BHPS waves 1-12", Institute for Social and Economic Research Working Paper 99-25, University of Essex, Colchester.

Butrica, B. A. and Burkhauser, R.V.(1997). "Estimating Federal Income Tax Burdens for Panel Study of Income Dynamics (PSID) Families Using the National Bureau of Economic Research TAXSIM Model." Aging Studies Program Paper No. 12, Maxwell Center for Demography and Economics of Aging, Center for Policy Research, Syracuse University.

The Canberra Group, Expert Group on Household Income Statistics (2001), "Final report and recommendations", Ottawa.

Feenberg, D. and Coutts, E. (1993). "An Introduction to the TAXSIM Model", *Journal of Policy Analysis and Management*, vol.12, no. 1, 189-194.

Moore, K.B. (2005). A SAS program to estimate federal taxes using TAXSIM.

Department for Work and Pensions. (2005). Low Income Dynamics 1991-2003. http://www.dwp.gov.uk/asd/hbai/low_income/paper_M.pdf

Organization for Economic Co-operation and Development (OECD). (2005). PPPs and Real Expenditures 2002. Paris.

Organization for Economic Co-operation and Development (OECD). (2005). National Accounts of OECD Countries, Vol. 1. Paris.

Sierminska, E. (2005). "The Luxembourg Wealth Study: A Progress Report", report prepared for LWS Workshop: "Construction and Usage of Comparable Microdata on Wealth: the LWS", Perugia, Italy, 27-29 January 2005. http://www.lisproject.org/lws/files/Sierminska_rev.pdf

Schwarze, J. (1995). "Simulating German Income and Social Security Tax Payments Using the GSOEP." Cross-National Studies in Aging. Program Project Paper No. 19, Center for Policy Research, The Maxwell School. Syracuse, NY: Syracuse University

APPENDIX A. LWS INCOME VARIABLE DEFINITIONS

WAGE: Wages and salaries of all household members, including tips and bonuses, 13th month bonuses and income from second/other jobs.

SELF: Income from all self-employment, including profit/loss from unincorporated businesses.

CPRI: Cash property income, which is a sum of the following sub-variables:
- **CPRI1:** Income from interests and dividends
- **CPRI2:** Rental income. Includes rents from vehicles, business buildings, dwellings and boarders.
- **CPRI3:** Income from annuities, trusts, private voluntary pensions; all private savings plans.
- **CPRI4:** Income from royalties
- **CPRI5:** Other cash property income that cannot be classified elsewhere

OCCPEN: Occupational pensions for private and public employees, so called second pillar pensions.
- **OCPEN1/OCPENO**: subvariables that are filled if available

PUBPEN: Social security pensions for old-age and survivors, so called first pillar pensions coming from the state.
- **PUPEN1/PUPEN2/PUPENO**: subvariables that are filled if available

SOCIBEN: Social insurance benefits excluding those in variable PUBPEN, including e.g. unemployment benefits, maternity/paternity benefits, invalidity benefits, disability pensions and child allowances.

MNSBEN: Social assistance cash benefits.

NRCBEN: Near cash benefits, includes housing allowance, education benefits, medical allowances and other benefits that are near cash.

PRIVTRA: Private transfers, includes regular private transfers from relatives and non-profit- making institutions (including charity), Includes for example alimonies and child support.

OTHCINC: Other cash income that cannot be classified elsewhere

CONTRIB: Mandatory contributions for employed and self-employed persons, so called “payroll taxes”.

INCTAX: Regular taxes on income. If other mandatory contributions and transfers cannot be separated from income tax, then all the amounts are put here.

GAIN: Realized capital gains and losses

GIFT: Non-regular gifts from friends and relatives

NCPRI: Non cash property income includes only imputed rent for owner-occupied dwelling, ideally market rental value.

LUMP: Windfall income, includes irregular (capital) transfers such as lottery winnings, one-time cash gifts and profits from life insurances

WLTHTAX: Regular taxes on wealth and property.

INTPD: All interest payments.
- **INTPDMG:** Interest payments on mortgages
- **INTPDOL:** Interest payments on other loans

PTPD: Private regular transfers paid to non-profit making institutions and persons living in other households. Includes for example alimony and income support payments.

EARNH / EARNS: Earnings for head and spouse (wage+self)

PENH / PENS: All pensions for head and spouse (occpen+pubpen)

PUBPENH / PUBPENS: Social security pensions for head and spouse

APPENDIX B. SURVEY INFORMATION OF LIS AND LWS DATASETS.

Country	*Project*	*Income reference year*	*Survey*	*Over sampling of wealthy*	*Sample size*	*Income unit*
Canada	LWS	1998	Survey of Financial Security	Yes	15933	Economic family
	LIS	1998	Survey of Labor and Income Dynamics	No	31218	Household
Cyprus	LWS	2001	Survey of Consumer Finances	Yes	895	Primary Economic Unit
Finland	LWS	1998	Household Wealth Survey	No	3893	Household
	LIS	2000	Income Distribution Survey	No	10423	Household
Germany	LWS	2001	German Socio-Economic Panel	Yes	12692	Household
	LIS	2000	German Socio-Economic Panel	No	10985	Household
Italy	LWS	2002	Survey of Household Income and Wealth	No	8011	Household
	LIS	2000	Survey of Household Income and Wealth	No	8001	Household
Norway	LWS	2002	Income and Wealth Survey	No	22870	Household
	LIS	2000	Income Distribution Survey	No	12919	Household
Sweden	LWS	2002	Income Distribution Survey	No	17954	Household
	LIS	2000	Income Distribution Survey	No	14491	Household
The U.K.	LWS	2000	British Household Panel Survey + Cross National Equivalent File	No	8321	Household
	LIS	1999	Family Resources Survey	No	24988	Household
The U.S. SCF	LWS	2000	Survey of Consumer Finances	Yes	4442 (22210)*	Primary Economic Unit
The U.S. PSID	LWS	2000	Panel Study of Income Dynamics + Cross National Equivalent File	No	7406	Family
The U.S. CPS	LIS	2000	Current Population Survey	No	49633	Household

*The U.S. SCF uses multiple imputations so the initial sample size in brackets is five times the actual sample size

APPENDIX C. DETAILED DESCRIPTION OF A SUBSET OF LWS INCOME VARIABLES

	WLTHTAX	INTPD	INTPDMG	INTPDOL	PTPD	NCPRI	GAIN
CA	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
CY	Real estate taxes on property/home/unit/land that respondent/family owns	*NA*	*NA*	*NA*	Alimony/child support payed and other financial support payed to friends or relatives	*NA*	Net gains or losses from sale of stocks, bonds or real estate
FI	*NA* (included in inctax-variable)	Interest paid on housing loans	Interest paid on housing loans		*NA* (included in inctax-variable)	Imputed rentals for owner-occupiers. Calculation: Estimated gross market rent less maintenance costs	*NA*
GE	*NA*	*NA*	*NA*	*NA*	Payments/support to parents, children, spouse/ex spouse, other relatives and non-relatives outside household	Net imputed rent of owner occupied dwellings. Calculation: Gross market rent less operating and maintenance costs, interest payments on mortgages and property taxes	*NA*
IT	Interest paid	*NA*	*NA*	*NA*	Alimony/maintenance/ other financial contributions paid to relatives and friends outside the household	Imputed rent. Calculation: subjective measure; respondents own assessment of the market value of the rent (not including condominium charges, heating and other sundry expenses).Includes also household's who do not own the dwelling.	Capital gains less capital losses from sale of governement securities, bonds, shares, mutual funds, foreign securities or assets under individual management
NO	Municipal property tax, state property tax and tax on individual pension plan less deduction by the 80% rule	Interest payments	*NA*	*NA*	Alimony paid	Imputed rent (tax value) for own dwelling. Calculation: tax value of house - 80 000NOK *0.025. If the value of the house is above 451 000 NOK, addition of 5% is added to the imputed rent.	Realised capital gains-realised capital losses
SE	Wealth tax and tax on real estate less tax reduction on real estate	Interest paid on mortgage and other loans	*NA*	*NA*	Alimony paid	*NA*	Net capital gains
The U.K	*NA*	*NA*	*NA*	*NA*	Maintenance/alimony/ child support paid to persons living outside household	*NA*	*not available*
The U.S. SCF	Real estate taxes on land/home/farm/ranch/ unit/property/part of farm or house that family/respondent owns	*NA*	*NA*	*NA*	Alimony, separation payments or child support paid and other financial support paid for relatives or friends	*NA*	Net gains or losses from the sale of stocks, bonds or real estate
The U.S. PSID	Annual property taxes	*NA*	*NA*	*NA*	Alimony, child support and other support paid	Imputed rental value of owner occupied housing. Imputed rental value is 6% of the difference between the house value and the remaining mortgage principal	*NA*