

ANNEX B

Luxembourg Wealth Study – A case for increased ex ante comparability of data sources

This Annex describes the *Luxembourg Wealth Study (LWS) Database* in terms of experience in the process of *ex post* harmonisation. It presents the basic concepts and general principles applied by the LWS on household wealth, and it specifies the key definitions, standard components and standard classifications for wealth components. It also gives brief descriptions of the definitions of supplemental variables available in the LWS database, namely household income and consumption, labour market information and behavioural attitudes toward finance. It highlights the need for internationally agreed definitions of various household wealth components.

The Luxembourg Wealth Study Database

The LIS Cross-National Data Center in Luxembourg (LIS) harmonises income and wealth micro data from existing country-level surveys over a period of decades to create a database containing comparable cross-country data. The *Luxembourg Wealth Study Database*, launched in 2007, has been developed using the LIS framework and principles of data harmonisation that have been successfully advanced and internationally recognised for over 25 years. The LWS is the first cross-national database of harmonised wealth micro data that enables entirely new lines of research about wealth across countries and, to some extent, over time. The LWS provides opportunities for scholarly research on wealth and for the development of improved standardised wealth data collection practices. This database includes information on both wealth and non-wealth variables, including information about households' assets and liabilities, indicators on income, expenditures, behaviour, and a range of demographic and economic characteristics of the household. At the time of writing this Annex, the LWS has 20 data sets from 12 countries. These include Austria (2004), Canada (1999), Cyprus (2002), Finland (1994, 1998), Germany (2001, 2006), Italy (2002, 2004), Japan (2003), Luxembourg (2007), Norway (2002), Sweden (2002), the United Kingdom (2000), and the United States (1994, 1997, 2000, 2003, 2006). The main goals of the LWS are fourfold: to improve standardised practices for the collection of wealth data; to construct data sets that enable comparative research on household net worth, portfolio composition, and wealth distributions; to provide guidelines for data producers (similar to what has been done for income distribution statistics through the LIS with the final Report of the Canberra Group); and to establish a network of experts who can share knowledge and practices about wealth analysis.

The LWS Database group of variables

Wealth variables: Definitions and components

The LWS standard components of wealth include assets, liabilities and net worth. An asset is defined as an economic resource, reported at its current value, possessed or owned by the household at a specific point in time, usually on the date of the survey. Assets are usually expected to generate profit in the future. Having an economic value, assets can be turned into cash or exchanged for other goods and assets. A liability is defined as an obligation to make financial payments – i.e. what a household owes to a financial institution or other household(s). Net worth is defined as assets *minus* liabilities. The list of LWS components of household wealth is presented in Table B.1.

Table B.1. **List of LWS components of the household balance sheet**

| Assets | Liabilities (by purpose) |
|--|--|
| 1. Non-financial assets | Not applicable |
| 1.1. Real estate assets | 3.1. Real estate liabilities |
| 1.1.1. Principal residence | 3.1.1. Principal residence loans |
| 1.1.2. Other real estate assets | 3.1.2. Other real estate loans |
| 1.2. Non-housing assets | 3.2. Non-housing liabilities |
| 1.2.1. Business equity | Not applicable |
| 1.2.2. Consumer goods | 3.2.1. Consumer goods loans |
| 1.2.2.1. Vehicles | 3.2.1.1. Vehicles |
| 1.2.2.2. Other durables and valuables | 3.2.1.2. Other loans for durable and non-durable goods and consumption |
| 1.2.3. Other non-financial assets | 3.2.2. Other non-financial asset loans |
| 2. Financial assets | 3.3. Financial asset loans |
| 2.1. Deposit accounts and cash | |
| 2.2. Financial investments | |
| 2.2.1. Bonds and other debt securities | |
| 2.2.2. Stocks and other equity | |
| 2.2.3. Mutual funds and other investment funds | |
| 2.3. Other financial assets | |
| Complementary financial assets | |
| 2.4. Long-term voluntary investment plans | |
| 2.4.1. Life insurance funds | |
| 2.4.2. Voluntary individual pensions funds | |
| 2.5. Pension entitlements other than voluntary pension funds | |
| Not applicable | 3.4. Education loans |

LWS net worth: Net worth = (Real estate assets – Real estate liabilities) + (Non-housing assets – Non-housing liabilities) + (Financial assets – Complementary financial assets – Financial assets loans) – Education loans.

Non-financial assets

The LWS divides assets into non-financial assets and financial assets. The non-financial assets include two major categories, namely real estate and non-housing assets. The former includes the current value of the principal residence as well as other real estate owned by households. While the principal residence contains the current value of owner-occupied dwellings, the other real estate assets category records the current value of residential and non-residential buildings and land other than the principal residence. In other words, the current value of any dwelling or land associated with the primary residence is included in the first category, whereas the current value of any dwelling or land not associated with the primary dwelling is included in the second category. Real estate associated with business assets is excluded from this category.

The second major category of assets is non-housing assets, which includes business equity, consumer goods and other non-financial assets. Surveys usually ask households to evaluate the business on the basis of how much it could be sold for (i.e. what the business is worth), rather than asking separately about the assets and liabilities associated with the business. Therefore, the LWS records under non-financial assets the value of business equity. This corresponds to the current value of tangible and intangible assets such as property, plant and equipment, inventories, patents and trademarks, less the liabilities taken for these assets. This category also includes the financial instruments held by the business, such as cash, accounts receivable, loans receivable and shares. The financial liabilities such as accounts payable, loans payable and bank overdrafts are subtracted from business financial instruments.

Within the category consumer goods, the LWS distinguishes between vehicles and other consumer durables and valuables. The category of vehicles includes the current value of cars, motorcycles, boats, airplanes, and other vehicles excluding mobile homes. The current value of furniture, appliances, and other contents of the household's belongings as well as the value of precious metals and stones, jewellery, antiques, coins, paintings, other works of art, and other goods that store worth is recorded under the category of other durables and valuables. Other non-financial assets include copyrights, patents, royalties and other miscellaneous assets.

Financial assets

The standard components of financial assets include cash and deposit accounts, financial investments and other financial assets. The deposits in financial institutions include current (transaction/checking) accounts and various types of saving accounts, such as traditional saving accounts, certificates of deposits that are held-to-maturity, special saving accounts that allow income taxes on funds deposited into the plan to be deferred until money is withdrawn, etc. The category of financial investments includes bonds such as government saving bonds, corporate bonds, commercial papers, state or municipal non-saving bonds, foreign bonds and other non-saving bonds as well as mortgage-backed securities and treasury bills; publicly traded stocks that include accounts for the purchase and sale of stocks and other securities; mutual funds, investment funds, hedge funds and income trusts; and held-to-maturity managed investment accounts other than special saving accounts. The miscellaneous financial assets include, but are not limited to, education and home saving plans.

The category "complementary financial assets" is composed of two major categories, the long-term voluntary investment plans as well as pension entitlements other than voluntary pension funds. The former includes cash-value life insurance (other than accident life insurance), as well as voluntary individual pensions, such as tax-deferred retirement accounts. The latter refers to any other pension scheme that cannot be classified as a voluntary pension, for instance government employee schemes, or social security schemes.

Liabilities

The LWS components of liabilities are broken down in a similar way to the left-side of the household balance sheet, namely assets. Table B.1 presents the components of liabilities by purpose, where all liabilities, except education loans, correspond to the left-side of the household balance sheet. Real estate liabilities contain the principal residence mortgage as

well as the mortgages on other properties not owned by the business. The other liabilities by purpose are defined by the LWS in terms of non-housing liabilities, which include financial asset loans, consumer goods loans, education loans and other liabilities. Financial asset loans include the debts for option contracts and loans for short- or long-term investment purposes. The category “consumer goods loans” includes vehicle loans (cars, motorcycles, boats, airplanes, etc.), loans used for the purchase of consumer durables (precious metals, jewellery, antiques, paintings, coins, computers, furniture, etc.) and non-durables (holidays, furs, etc.). The other instalment loans or available lines of credit from financial institutions (credit card purchases) are also included under consumer goods loans. Other debts included in the LWS are education loans and other miscellaneous loans.

Besides the purposes for which loans are taken out by the household, the LWS also groups liabilities by the securitisation status of the debt. This is of considerable value in analysing the nature of household debt and associated household behaviour. Ideally, each of the standard components for liabilities may be split to show those loans that are secured, including the type of asset against which they are secured, and those loans that are unsecured. Due to the limitations of collected survey data, the LWS provides only variables that show loans secured by the principal residence or secured by other real estate. Loans taken out for a variety of purposes (including purposes unrelated to the property concerned) but secured by the principal residence or other real estate are recorded under home-secured debts. These include collateral loans taken out to invest in financial assets, to set up or expand own unincorporated business operations, to purchase vehicles or other consumer durables, to meet education expenses, or to cover holiday costs. Additionally, the LWS provides variables that record non-home-secured loans and informal loans. The former are divided into loans guaranteed by other individuals and loans that are non-guaranteed. The informal loans record money borrowed from friends/relatives outside the household.

Net worth

The components of LWS net worth are presented in the bottom of Table B.1. All components of non-financial assets and the majority of the components of financial assets are used to construct household wealth. The financial assets that enter net worth are deposit accounts and cash, financial investments, bonds and other debt securities, stocks and other equity mutual funds and other investment funds, and other financial assets. All liabilities listed in Table B.1 are subtracted from the above categories of assets. To help overcome the shortcoming of wealth surveys and to bring an adequate level of comparability across countries, the category “complementary financial assets” are excluded from the calculations of LWS net worth. Unfortunately, long-term voluntary investments plans (life insurance funds and voluntary individual pension funds) as well as other pension entitlements are not readily available in many countries’ existing surveys. In some data sets, researchers have an option to add pensions to the net worth aggregate. Until greater standardisation of wealth surveys is achieved *ex ante*, researchers will have to trade off higher comparability against a somewhat incomplete picture of national wealth. Even though there are differences in the coverage and aggregation of wealth items across the various surveys, the LWS provides researchers with the most complete measure of household net worth.

Wealth aggregates

In order to achieve acceptable cross-country comparability, the LWS provides other aggregates based on the subcomponents of wealth described above. On the assets side of

the household balance sheet, these include total non-financial assets and total financial assets. Within non-financial assets two other aggregates are created, namely real estate assets and non-housing assets. The major aggregate in the category of financial assets is financial investments. Under the heading of complementary financial assets, the LWS provides the aggregate for long-term voluntary investment plans. The aggregates for liabilities by purpose include total household debt, real estate liabilities, non-housing liabilities and its subcomponent consumer goods loans. The aggregates for liabilities by securitisation include home-secured loans and non-home-secured loans.

Non-wealth variables

In addition to the household wealth components, the LWS provides researchers with other variables, such as socio-demographics, labour market, income, expenditures, behavioural and other wealth-related variables. The list of these variables is presented in Table B.2.

Table B.2. **List of LWS non-wealth variables**

| | | |
|---|---------------------------|---|
| Household characteristics and socio-demographic variables | Household characteristics | Household and family composition Geographic characteristics Dwelling characteristics |
| | Socio-demographics | Demographics Immigration Health Education level Background information |
| | | |
| | | |
| | | |
| | | |
| | | |
| Labour market information | Activity status | Labour force status Main activity status |
| | Employment intensity | Hours worked Weeks worked |
| | | |
| | Job characteristics | Occupation Industry |
| | | Employment status |
| Current income | Labour income | Paid employment income Self-employment income |
| | | |
| | Capital income | Interest and dividends Rental income Private saving plans/voluntary individual pension plans Royalties |
| | | Other capital income |
| | | Social security transfers-related insurance transfers |
| | | Universal benefits Assistance benefits Private transfers |
| | Transfer income | |
| | | |
| | | |
| | | |
| Windfall income | Labour income | Windfall employee income Windfall self-employment income |
| | Capital income | Capital gains Insurance compensations |
| | | |
| | Transfer income | Inheritance Lottery winnings |
| | | Lump-sum retirement compensations |

Table B.2. **List of LWS non-wealth variables** (cont.)

| | | |
|---------------------------------------|---|---|
| Consumption expenditure variables | Consumption | Food and non-alcoholic beverages |
| | | Alcohol and tobacco |
| | | Clothing and footwear |
| | | Housing and utilities |
| | | Actual rent |
| | | Imputed rent |
| | | Housing equipment |
| | | Health |
| | | Transport |
| | | Communication |
| | | Recreation and culture |
| | | Education |
| | | Restaurants and hotels |
| | | Miscellaneous goods and services |
| | | Home production for own use |
| | | Consumption of goods and services received |
| Non-consumption expenditure variables | Taxes and social security contributions | Wealth taxes |
| | | Income taxes |
| | | Other direct taxes |
| | | Social security contributions |
| | Other non-consumption expenditure | Voluntary contributions |
| | | Inter-household transfers paid |
| Wealth-related variables | Assets and liabilities transactions | Interest paid on mortgage and other loans |
| | | Proceeds from sales |
| | | Inflows from loans |
| | | Outflows from loans |
| | Inheritance and other variables | Purchases |
| | | Inheritance received: |
| | | Amount, year, type, and from whom |
| | | Information on whether inheritance expected |
| | | Year and purchase price of principal residence |
| | | |
| Behavioural variables | Attitudes toward household finances | Saving priorities/motives/purposes/attitudes |
| | | Financial risk-taking attitudes |
| | | Financial planning |
| | | Financial literacy |
| | | Obtaining financial information |
| | | Financial decisions |
| | Other behavioural variables | Number of loans |
| | | Number and possession of credit cards |
| | | Loan consolidation |
| | | Credit constraints |
| | | Possibility to withdraw from home equity line of credit and non-mortgage line of credit |

Household characteristics and socio-demographic variables

The household characteristics variables provided by the LWS contain information about the composition of the household or family, the geographical characteristics of the household residence as well as information about the principal residence of the household and tenure (owned versus rented).

The socio-demographic variables are all person-level variables and report the major socio-demographic characteristics for all household members. The socio-demographic variables are split into major groups including demographics (age, gender, marital status, and race/ethnicity), immigration (country of birth, duration of stay in the country of survey,

immigration status), health (disability status, subjective health status), education level, and some background information on parents.

LWS labour market variables

Labour market variables are also available for all household members in most LWS data sets. In several data sets, the full labour market information is provided only for the household head and spouse due to the nature of the original survey data. The labour market variables are grouped into three major blocks.

- First, the activity status contains information about the labour force status and main activity status. The labour force status variable captures any employment during the reference or current period, depending on the country survey. The main activity status variable distinguishes those for whom work is the main activity as well as the type of activity for the non-working (pensioners, students and homemakers).
- Second, employment intensity includes information about hours and weeks worked at all jobs or the main job, depending on the country.
- Third, the variable job characteristic includes information on occupation, industry and employment status for household members.

LWS current and windfall income variables

The LWS income variables are available on the household level and are based on the conceptual framework of the *Luxembourg Income Study (LIS) Database* income variables. There are two major categories of income available in LWS data sets: current income and windfall income. Both categories are composed of labour income, capital income and transfer income. Current income covers all receipts available for current consumption from wages and salaries, self-employment income, interest and dividends, rental income, private saving plans, royalties, social security transfers (work-related insurance transfers, universal benefits and assistance benefits) and private transfers. Windfall income consists of all windfall gains, irregular and typically one-time receipts such as capital gains, insurance compensations, inheritances, lottery winnings, and other lump-sum retirement compensations. The LWS and LIS have the same concept of disposable income as well as of major income aggregates.

LWS expenditure variables

The consumption expenditure of households provided in the LWS database corresponds to Codes 1 to 12 of the COICOP classification. These include consumption expenditures on food and non-alcoholic beverages, alcohol and tobacco, clothing and footwear, housing and utilities, housing equipment, health, transport, communication recreation and culture, education, restaurants and hotels, and miscellaneous goods and services. In addition, the LWS provides (if available separately in the original survey) an additional breakdown of non-monetary consumption, namely home production for own use and consumption of goods and services received.

Based on the LIS concept of non-consumption expenditure variables, the LWS also provides variables that fall into this framework. These include income taxes, wealth and other taxes, social security contributions, voluntary contributions, inter-household transfers paid as well as interest paid on mortgage and other loans.

LWS wealth-related variables

The LWS also provides information on monetary flows resulting from the transaction of assets and liabilities. These consist in monetary inflows that do not constitute income (neither current nor windfall) and outflows that do not represent consumption, but rather reduce or increase the net worth of the household, through a reduction or increase of its cash, the disposal or acquisition of its other financial and non-financial assets or an increase or reduction in its liabilities.

The other wealth-related variable includes total value and year when inheritance was received, as well as from whom it was received and type of inheritance received. The LWS also provides information on whether or not an inheritance is expected in the future. Additionally, the year and purchase price of the principal residence is provided.

LWS behavioural variables

Behavioural variables available in the LWS database are classified under two sub-headings: attitudes toward household finances and other behavioural variables. The first group of variables includes information about the household attitudes toward saving, financial risk-taking, financial planning, financial literacy, financial decisions, and how financial information is obtained. The additional variables in this group include information on the possibility to withdraw money from a home equity line of credit as well as a non-mortgage line of credit. The other behavioural variables provide information on loan consolidation, credit constraints, number and possession of credit cards, and number of loans. Additionally, the LWS database provides detailed information about inheritance and gifts – the year the inheritance/gift was received, the type, the amount and from whom it was received.

Comparability issues: Lessons from the LWS project

The LWS experience shows that differences across surveys and country practices call for international standards and practices regarding the definitions, components, measurements and collection of household wealth statistics. These international standards would allow a consistent, coherent and comparable set of wealth measures to be produced and utilised by researchers to conduct cross-national analyses of household wealth. Since data for the LWS come from varying sources, there are several issues that make the harmonisation and comparability of wealth data across countries challenging. These issues relate to the collection of household wealth statistics as well as the availability of the components of wealth and their measurements, classifications and definitions.

Before turning to the most important issues of the *ex post* harmonisation of household wealth data, it is necessary to point out the various purposes and structures of the original surveys. Some countries conduct typical wealth surveys; others integrate a special wealth module into their income surveys. Several countries combine surveys with some supplemental information on wealth from administrative records. These general characteristics of the original survey have implications for what components of wealth are available as well as how they are measured and classified.

First, there are cross-national differences related to the availability of certain wealth components. Since some surveys provide more detailed information than others, there are also differences in variable availability and comparability between LWS data sets. The main sources of differences are the availability of certain wealth components and the level of aggregation of variables. Usually, typical wealth surveys provide more detailed information

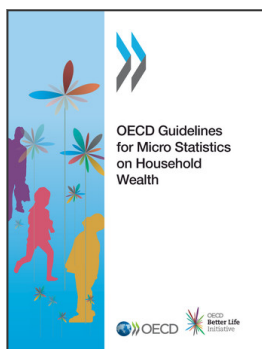
on wealth subcomponents than the surveys that have only wealth modules. Differences due to the level of aggregation of original survey variables primarily affect the sub-components of summary wealth variables. In some surveys it is not possible to separate all the different sub-components of financial or non-financial assets. Some countries provide rather aggregated variables, e.g. all financial assets are included in one variable. Other countries provide aggregated non-housing debts. Also, omitting some components of debt is not a trivial issue in the process of assembling comparable wealth data. The comparability of the subcomponents of non-financial assets, financial assets or liabilities could be lacking, but the major components of wealth are mostly available. The non-availability of individual sub-components of wealth does not affect the creation of comparable net worth.

Second, there are issues related to the measurement of assets and liabilities. Several countries combine surveys with supplemental information on wealth from administrative records. Tax register information might provide less accurate estimates because of under-reporting due to tax evasion and tax exemptions. Further, the valuation criteria for tax the register (expressed in the administrative rules) differ from current value prices. The valuations of assets and debts expressed with current value or on a realisation basis (e.g. valuation of real estate based on taxable values versus market values) are also present across surveys that do not utilise administrative records. Additionally, the assets and liabilities are sometimes recoded in unconventional ways, such as brackets or point values. Also, the accounting period differs across surveys, such as end-of-year values versus at time of interview values. Despite considerable efforts to standardise wealth variables, there remain important differences in valuation criteria and survey quality that cannot be adjusted for by the LWS.

It sometimes happens that the definitions of wealth components differ across surveys, making comparability more difficult. Specifically, the LWS experience indicates that definitions relating to housing wealth, unincorporated businesses and pension wealth sometimes diverge from survey to survey. Further, the definitions of the unit of analysis are not the same across surveys (household vs. nuclear family), and as a consequence the household head definitions differ across surveys.

Other issues involve survey sampling and data quality (imputations, response rate). Specifically, some wealth surveys over-sample wealthy households (upper tail of the distribution is usually the focus) at the cost of higher non-response rates. In the case of income surveys with a special wealth module, the response rate is higher than in detailed wealth surveys. Sometimes data are simulated, as in the case of taxes in several developed countries. Further, in some wealth surveys, imputation is applied in the presence of item non-response as well as of many items that are collected with ranges. Finally, bottom- and top-coding are used differently across countries.

As outlined above, there is a variation across LWS data sets in terms of the availability and comparability of wealth variables. The issues related to the definitions, measurements and classifications of wealth components as well as the collection of wealth data could be resolved through internationally agreed guidelines that countries and data producers are willing to follow. The standards and guidelines presented in this publication have great potential to make this wish come true.



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