

Measuring Wealth in Household Surveys in Low- and Middle-Income Countries

A Vulnerability Perspective

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Measuring Wealth in Household Surveys in Low- and Middle-Income Countries

Executive summary

The importance of wealth data

Wealth is a key component of household economic well-being, alongside consumption and income. It allows households to meet basic needs, access healthcare, and invest in education, which is crucial for escaping poverty. Wealth generates returns, provides access to credit, and enhances social influence while serving as a safety net.

As the world increasingly experiences shocks and economies become more volatile, household wealth is the primary attribute that differentiates which households can better cope with the effects of adverse shocks and which households will experience economic deprivation due to the shock. Being able to provide policymakers with a nuanced profile of poverty and vulnerability to poverty that is informed by measures of household wealth can substantially improve the design and relevance of policies and programs. Moreover, households in Low- and Middle-Income Countries (LMICs henceforth) usually face greater uncertainties than those residing in High-Income Countries (HICs, henceforth), due to both the generally lower extension of the welfare state in terms of education, health care, or pensions and a greater impact of events like wars, internal conflicts, migration, and natural disasters, which climate change is making more frequent and severe. In such conditions, data on household wealth is even more important, and the motivation for promoting the collection of wealth data is strengthened.

However, there are many other reasons that justify interest in wealth data. Wealth is one of the indicators used by governments to assess citizens' ability to contribute to public expenses. The taxation of wealth or some of its components (e.g., real estate assets), carried out with the aim of reallocating resources to other public objectives, has always been a key concern for policymakers and in recent decades has returned to the center of the economic debate. Moreover, data on wealth and its main components are sometimes used by governments to target the most vulnerable segments of the population for social protection services. This approach can be particularly effective where the ownership of certain assets is easily known to public authorities (e.g., land or vehicles), while the prevalence of informal employment makes it difficult to certify the income earned by a large share of citizens.

Understanding wealth distribution is crucial for central banks, as they are responsible for formulating monetary policy. Changes in interest rates are usually associated with fluctuations in asset values in financial and real estate markets, as well as with effects on debt sustainability. Wealth variations due to capital gains or losses often impact on consumption levels, though not uniformly across different population segments.

Accurate measurement of household wealth at the micro level is a crucial tool for researchers, development practitioners, and policymakers, to expand the study of economic poverty, traditionally focused mainly on income and consumption flows, to design, evaluate, and fine-tune tax or other policy measures while anticipating their outcomes. Wealth data can also support analysis in many additional fields, such as social mobility, economic disparities, and the intergenerational transmission of wealth. Data on wealth accumulation across different life stages can help assess retirement preparedness and the sustainability of pension programs. Moreover, micro-level wealth data can be especially useful in countries where aggregate wealth estimates are missing, which is often the case in Low- and Middle-Income Countries (LMICs, henceforth).

Wealth data collection in LMICS

Despite the importance of this indicator for household well-being, vulnerability and the broad spectrum of its uses, data collection on household wealth is not universally implemented, particularly in surveys conducted in LMICs (the most notable exceptions are China and India). In many cases, household wealth data are collected only partially and in an unharmonized manner, which limits the comparability of results between countries.

Against this background, researchers from the World Bank, the Bank of Italy, and the Luxembourg Income Study (LIS), decided to prepare Guidelines on Measuring Household Wealth in Low- and Middle-Income Countries (referred to as LMICs throughout this report). The Guidelines aim at providing to National Statistical Office (NSO) experts, survey practitioners, and researchers mainly located in LMICs a comprehensive framework for organizing high-quality data collection process of household wealth in sample surveys conducted in LMICs.

The structure of the Guidelines

The Guidelines apply standard high-level wealth definitions and classifications. Wealth is defined as the value of all the assets held by a household after the deduction of outstanding liabilities; for this reason, it is also called net wealth or net worth. The assets can be real (or non-financial, i.e., houses, land, other buildings, livestock, business assets, valuables, and consumer durable goods) or financial (e.g., cash, bank accounts, bonds, shares). Negative components of wealth are debts and other liabilities.

However, with reference to LMICs, some aspects require special attention. On the one hand, the relative importance of the various components considerably changes across countries. In LMICs usually real assets (land, livestock, jewelry, and durables in particular) may assume a greater role compared to High-Income Countries (HICs), while that of financial assets and liabilities is correspondingly reduced. Moreover, as informal ownership plays a significant role in the economic landscape of LMICs, data collection must be carried out with more specific tools, which allow us to grasp the nuances concerning property rights. These aspects are particularly important when the main object of the analysis is the intra-household distribution of wealth and the gender gap, that are also of specific interest in LMICs.

The Guidelines offer a flexible approach with two possible solutions for collecting household wealth data in LMICs: a basic module and an extended module. The basic module enables the collection of the minimum set of information to estimate the net wealth indicator and to analyze its distribution, composition, and connections with other indicators collected in the survey. The extended module builds on the basic module by incorporating additional details about wealth components and their characteristics, significantly expanding the range of possible customizations to the country context and feasible analyses. The elements to be included in the extended module can be tailored to suit specific research interests.

In order to evaluate if the wealth data gap could be filled by designing a new self-standing questionnaire or integrating new questions into ongoing surveys while preserving the host survey's existing structure, we conducted an extensive review of what is already being collected around the world. The review encompassed the questionnaires of 149 countries, covering 95% of the world population across all regions and all income groups, making sure that virtually all the low- and lower-middle-income countries were included as well as all the high- and upper-middle-income countries with the largest populations, whenever possible.

The review has provided a starting point to design solutions for collecting wealth data based on what countries are already implementing. The Guidelines have then been discussed on several occasions with experts and officials of national statistical institutes coming from both HICs and LMICs and adjusted to take their comments and suggestions into account. The entire process led to the recommendations described below.

Key recommendations

Strategic considerations and analysis

1. Objectives, resources, and existing data. The scope of wealth data collection should be guided by the projected analytical needs, the socio-economic and legal context, other surveys or data sources in operation with overlapping content, and the costs of various options. Undertaking a preliminary gap analysis informs and guides the choice of topics to collect as well as the reference population and the way data are collected. Although the design of a new survey able to capture household wealth is an option that can be pursued, the added value of statistical information is enriched by the joint availability of data belonging to different related fields, especially income and consumption. This suggests conducting an analysis to evaluate the wealth data gap existing in current country statistics. Having examined many existing household surveys we have found that in many cases a reasonable strategy could be the integration of some new questions into an existing questionnaire. This may require mitigation strategies for the respondent burden. In other cases, linking data from different sources can be a viable option. How this operation could be conducted is something that needs to be assessed on a case-by-case basis. Whenever possible, we recommend pursuing a joint (or at least connected) survey strategy of income, consumption, and wealth data; the degree of detail on each should be shaped by the analytical needs.

Ensuring complete and relevant data collection

2. Wealth components completeness. It is important that the questionnaire allows an estimation of all the items included in the definition of wealth, collecting both the ownership and the market value. A concrete example of this is shown in sections 1.4.1 and 1.4.2. To ensure completeness, all the wealth categories listed in the proposed modules must be included, taking into account the socio-economic context of the country.
3. Context and institutional framework. Analyzing the economic conditions of households requires not only core indicators such as income, consumption, and wealth but also information on broader contextual and institutional factors. Key elements like pension entitlements, access to public services, and informal support networks are essential for understanding wealth accumulation. Moreover, the specific aspects that characterize the country in terms of tenure, formal/informal ownership, and use rights should be taken into account. If these aspects are important, we recommend including specific questions on these issues. In countries where ownership rights tend to follow customary norms, and in those where some vulnerable groups might have difficulties in exercising all rights associated with a property, the collection of the simple reported ownership can be supplemented by a more scrupulous exam of the de facto rights exercised on the assets (see Hasanbasri et al., 2021 and the questions reported in appendix B2).
4. Supplementary information. Wealth-connected factors such as financial literacy, risk aversion, and over-indebtedness are critical to explore alongside household wealth. We recommend incorporating questions on these topics into survey questionnaires whenever feasible, as they provide valuable context to complement standard economic data collection. Where respondent burden or practical constraints limit such efforts, alternative strategies, such as Split Questionnaire Design or integration with external data sources, can help ensure comprehensive data availability. Repeated cross-sections or panel surveys may also provide opportunities for occasional modules dedicated to these topics.
5. Individual ownership and respondent selection. The analysis of the intra-household allocation of wealth and gender gap can be conducted only if information on individual ownership is collected. This is a field that has been gaining recognition in recent years, and we recommend including the corresponding questions, at least for the most important items. Whenever intra-

household distribution is a target, consider using a self- rather than a proxy-respondent approach, which better captures information about more vulnerable individuals within the household (United Nations, 2019).

6. Sampling. It is important to adopt a random sampling scheme that includes useful information for identifying the poorest strata of the population and ensures adequate representativeness of the vulnerable population. Where sufficient data are available, oversampling the very poor may be desirable to offset expected nonresponse or to achieve greater coverage of a sometimes highly heterogeneous population. The growing practice in HICs of oversampling the rich to better capture the right tail of the distribution can improve the representation of the full distribution but is not the primary focus from a vulnerability perspective.

Data quality

7. Sensitivity. Wealth is a sensitive topic, so it is crucial to take precautions during data collection. It is important to clearly communicate all strategies implemented to protect respondents' privacy, ensuring that their responses remain confidential and anonymous. This kind of approach is usually favored by a face-to-face interview. In countries where adequate coverage of remote data collection tools can be ensured, alternative modes (such as Computer-assisted voice interviewing, CAVI) may also be considered. Additionally, when inquiring about the value of personal assets, we recommend using specific procedures that reduce the reluctance to provide accurate answers. These methods minimize item non-response and effectively capture as much information as respondents are willing to provide (Section 3.1.4).
8. Item disaggregation. Whenever possible, favor a disaggregated data collection approach for the main wealth items (dwellings, lands, debts). This implies making use of filter questions (e.g., "Does your household own any dwelling?"), and building rosters (e.g., "Please list all the dwellings that your household owns") to which small sub-questionnaires are linked. This method ensures higher data quality compared to relying on a single-aggregate question approach.
9. Validation. The Guidelines suggest collecting auxiliary information on assets and liabilities (e.g., the size and location of real estate properties). This both reminds the respondent of the characteristics that can affect the asset value and favors a post-survey treatment of incongruous responses. This strategy can also help address the issue of missing values due to the low literacy levels of respondents or the absence of a proper market, with limited transactions.
10. Treatment and dissemination. Particular attention should be paid to the distinctive characteristics of wealth that may affect standard procedures, namely the high degree of distributional asymmetry, the presence of extreme values, and the importance of using robust estimators (e.g., the median).

Suitably adapted to the specific country case, the above suggestions support the production of high-quality wealth estimates. These data are useful for studying household vulnerability, complementing income or consumption data used in traditional poverty analysis, and exploring various other wealth-related topics discussed in this document. Moreover, the convergence toward solutions that are widely accepted at the international level enhances the value of the collected data.

1. **Wealth and vulnerability**

The Role of Wealth in Household Well-being

Wealth is recognized as one of the three constituents of household economic well-being, together with consumption and income, to which it is strictly linked (OECD, 2013b; National Academies of Sciences, Engineering, and Medicine, 2024). Wealth usually generates returns, thus supporting the current income and consumption. It can be used as collateral for accessing to credit market and providing owners the opportunity to buy a home or start a business, which is practically precluded to those who lack sufficient capital. Moreover, wealth provides the owners with power, influence, and prestige within the community they belong to, especially when it is of considerable amount. Wealth may also play an important role in shaping the bargaining power among the members of the same household when it is unevenly distributed or controlled among them.

Wealth as a Buffer Against Economic Shocks

Wealth is also a reserve of resources for future consumption. From this point of view, its contribution to well-being is not limited to the actual transformation in consumption, as wealth also assumes the role of a safety net, able to contrast, when needed, unexpected negative events. In difficult times, the financial resources held can ensure that daily basic needs for food and water are met. Often rural areas have limited medical facilities, and having the financial means to travel to a healthcare center and afford medical treatments can be decisive for the well-being of the household. The buffer of wealth resources allows households to invest in education, a key factor in breaking the cycle of poverty. The pandemic experience has largely demonstrated the beneficial role of wealth in preventing episodes of destitution, not only in Low- and Middle-Income Countries (LMICs). All these examples show that even a relatively small amount of wealth can be important for the poor and less poor, both in terms of vulnerability and resilience to economic shocks.¹

It's this protective function of wealth and its ability to reduce vulnerability that is the focus of the recommendations brought forward in these Guidelines. The proposed methodology of data collection will focus on better capturing and evaluating the wealth of poorer segments of the population, for countries to be able to gain a clearer picture of vulnerability that not only takes into account the household's income but also their ability to withstand shocks through their wealth, ultimately allowing better design of anti-poverty policies.

The Importance of Wealth Data for Social and Economic Policy

A wide variety of studies conducted in recent years have demonstrated the importance of reliable micro statistics on household wealth. According to Durand (OECD, 2013a), "better information on the distribution of household assets and liabilities would arguably have allowed assessing the size of the imbalances that were accumulating (before the 2008 financial crises), putting policymakers in a much better position to anticipate and react".

A developed strand of literature has shown how information on household wealth significantly widens the study of poverty, complementing the traditional analyses based on flow indicators alone (consumption/income) with those combining flows and stock (wealth) indicators (see Appendix C). Wealth data also allow us to focus on some further important dimensions of economic discomfort, such as over-indebtedness and financial exclusion.

Interest in wealth data, however, is much broader. Wealth is one of the indicators used by governments to assess citizens' ability to contribute to public expenses. The taxation of wealth or

¹ Berdenguè et al. (2024) analyzing rural households in Chile, Colombia, Ecuador, Guatemala, and Mexico, show that the relative level of wealth, measured by households' asset endowment, is the factor that most influences both food insecurity and the strategies households choose for coping with shocks.

some of its components (e.g., real estate assets), carried out with the aim of reallocating resources to other public objectives, has always been a key concern for policymakers and in recent decades has returned to the center of the economic debate (e.g., see Maloney et al., 2024). The availability of certain levels of wealth or the ownership of specific assets (e.g., a primary residence or land) can also be used by public authorities as a criterion to more accurately identify households in greater need of support measures (Banerjee et al., 2024). This approach can be particularly effective where public authorities can easily verify the ownership of certain assets (e.g., land or vehicles), while the prevalence of informal employment makes it difficult to certify the income earned by a large share of citizens. In some cases, public support for disadvantaged families may involve the direct provision of assets rather than cash transfers. For example, a successful development intervention is to provide households with a productive asset (e.g., a plot of land to cultivate or livestock) and support them in managing it (Banerjee et al. 2015). This type of intervention can help some families achieve long-term escape from poverty. Understanding how wealth is held and distributed across different segments of the population helps in designing, evaluating, and fine-tuning tax or other policy measures while anticipating their outcomes.

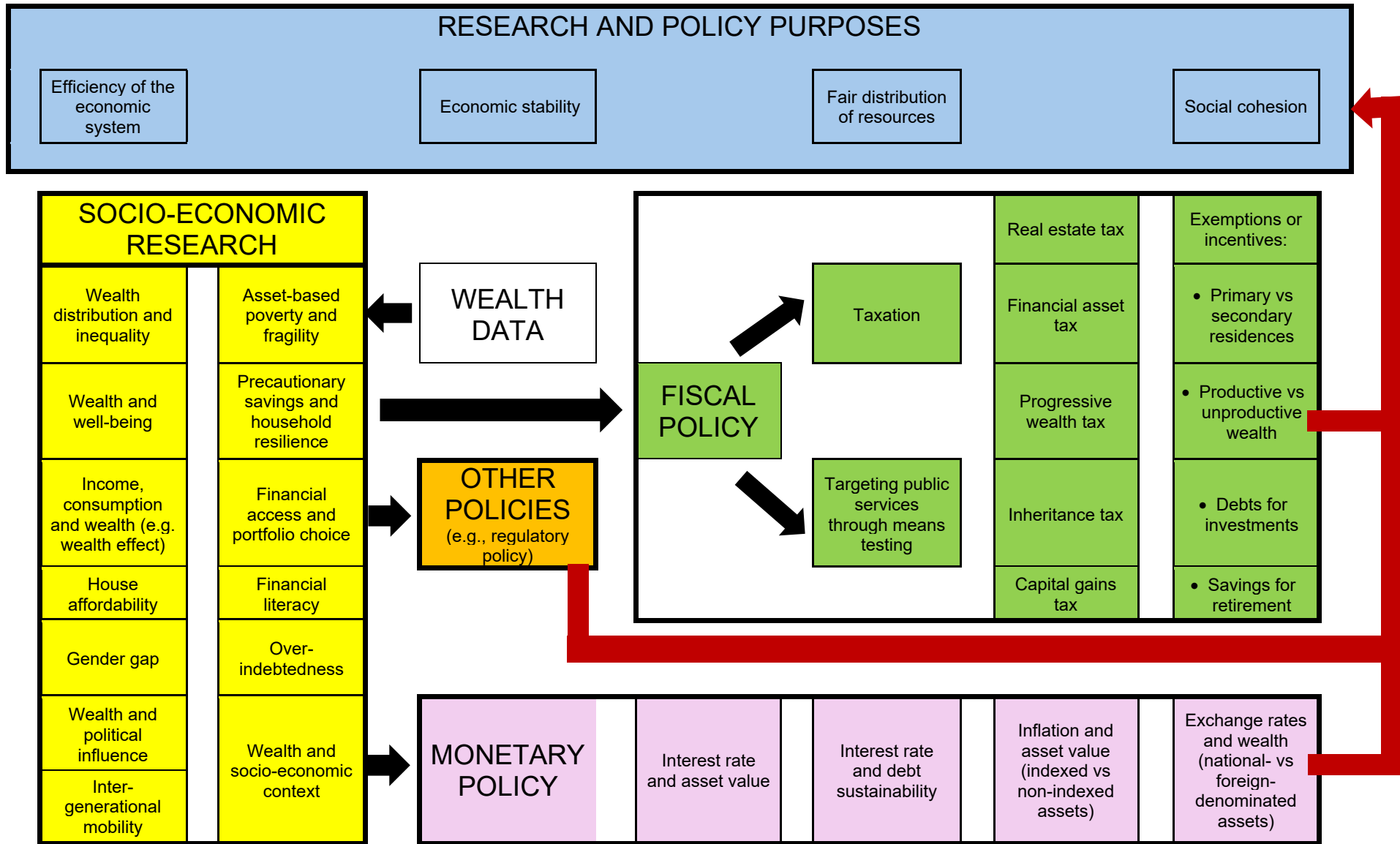
Surveys on wealth are becoming increasingly important for central banks, as they are responsible for preserving financial stability and need to anticipate responses to monetary policy and shocks. Some examples of the uses of surveys on households' wealth include a) to understand how changes in asset prices affect the real economy in different countries (Arnold et al., 2002); b) to estimate how many individuals have accumulated too much debt and what risks such over-accumulation poses to the economy (Rinaldi and Sanchis-Arellano 2006); c) to study households 'portfolio choices' (Carroll 2000); d) to gather a better understanding of what are the effects of different policies (such as financial regulation, the system of taxes, and pension systems) on different wealth classes of the population and among countries (Coromaldi and Guerrero, 2009); e) to investigate the resilience of households to economic shocks and, more recently, to the pandemic shock (Demertzis et al., 2020 and Gambacorta et al., 2021).²

Wealth data can also support analysis in several additional fields, such as social mobility, economic disparities, and intergenerational transmission of wealth. Moreover, data on wealth accumulation across different life stages can help assess retirement preparedness and the sustainability of pension programs. Wealth data can be especially useful in countries where aggregate wealth estimates are missing, which is often the case in LMICs.

Figure 1.1 provides an overview of the various possible uses of wealth data. Wealth data informs multiple fields of economic research, which in turn support fiscal, monetary, and other policy measures. Wealth is one of the indicators traditionally used by governments to assess citizens' ability to contribute to public expenses. The taxation of wealth or some of its components (e.g., real estate assets), carried out with the aim of reallocating resources to other public objectives, has always been a key concern for policymakers and in recent decades has returned to the center of the economic debate. In other cases, household wealth - or specific components of it - may be included among the eligibility criteria for social protection policies. These policies ultimately aim to achieve final goals such as system efficiency, economic stability, fair resource distribution, and social cohesion.

² Exchange rates and inflation also affect household wealth and indebtedness in various ways. Since these effects depend on the characteristics of the assets held (e.g., real or financial, indexed or non-indexed, denominated in national or foreign currency), obtaining an accurate picture of the distribution of wealth and its components among the population is crucial for assessing the impact of policy measures on these factors.

Figure 1.1 – Overview of the main economic uses of microdata on household wealth



The measurement of household wealth in LMICs

While the number of HICs conducting sample surveys on wealth has grown over the last decade (see for example the experience of the HFCS, the Household Finance and Consumption Survey, which has been conducted since 2011 by a group of European central banks and national statistical institutes), the practice of sample surveys on wealth is still limited among LMICs (e.g., Indonesia, India, China).

The lack of reliable and exhaustive information on household wealth in LMICs is a substantial limitation for effective policy design and economic analysis in these countries. Moreover, households who live in LMICs usually face greater uncertainties than those residing in HICs, both due to the generally lower extension of the welfare state in terms of education, health care, or pensions and to a greater impact of events like wars, internal conflicts, migration, and natural disasters, that climate change is making more frequent and more severe. In such conditions, data on household wealth are even more important, and the motivation for promoting surveys on wealth is strengthened.

The two topics 1) sample surveys on wealth and 2) sample surveys in LMICs already have guidelines and a vast literature from which to draw for designing best practices. Excellent examples are the Manual for Planning and Implementing the Living Standards Measurement Study Survey (Grosch and Munoz 1996), Designing Household Survey Questionnaires for Developing Countries (Grosch and Glewwe 2000), the UN study on Household Sample Surveys in Developing and Transition Countries (United Nations, 2005) and the OECD Guidelines (2013a, 2013b). However, none of these studies sufficiently explores the two terms at the same time, i.e., the specificity of conducting sample surveys on wealth in LMICs. More recently the United Nations Guidelines on individual asset ownership (United Nations, 2019) and the LSMS+ Program (Hasanbasri et al., 2021) have produced advice on how to collect micro statistics on asset ownership in LMIC contexts, with a focus strongly oriented to the individual data collection and the gender gap analysis.

While the above manuals and the vast literature available may contribute to shaping a general framework over which to build our Guidelines, several aspects are still unexplored and need to be carefully verified and specifically adapted when applied to LMICs.

In some cases, the attention will be devoted to specific items that, less important in HICs, assume great importance in LMICs. Typical examples are livestock and land, which constitute most of the wealth held by rural households in many LMICs. Also, durable goods, relatively less relevant in HICs (and not included in the definition of wealth of the System of National Accounts, SNA), are important for households living in LMICs. On the other hand, in LMICs the access to financial assets is lower than in HICs and may assume forms sometimes different. As wealth composition and features of how wealth is held are different between LMICs and HICs, the methods developed for HICs are only partly useful for LMICs, and the specificity of measurement issues requires that different solutions be devised. In many cases, the best ways for collecting data on the economic values of these components, in that specific context, need to be assessed.

Many other aspects are of interest when discussing household wealth in LMICs, for example, how to deal with properties shared by many households, or cases where property rights are only informally held. In some contexts, it is also important to analyze the occurrence of split property rights, as for example in the case of those who hold temporary use rights on properties while a bare owner – which is often the State – keeps some rights on the same asset.³ Of great importance is also the development of reliable methods for the collection and analysis of wealth data at the individual level, which allows to shed light on intra-household inequality and the gender wealth gap. This line of research requires the collection of data both on the formal ownership of real and financial assets

³ A bare owner refers to an individual who holds the legal title to a property but, for a period of time, does not have the right to use or enjoy it, as those rights are held by the usufructuary. When the usufruct ends, full property rights revert to the bare owner.

among the members of the households, on the actual control over the resources held, and on the distribution of benefits tied to the assets.

The Guidelines

This document contains guidelines for collecting wealth data in sample surveys conducted in LMICs. It includes a general framework of theoretical aspects, as well as the best practices for the collection of such data suggested by the literature, experts, and researchers. The purpose is to help those who decide to conduct this kind of survey by providing them with guidance and reference materials for data collection. The adoption of common guidelines has the positive side effect of improving the comparability of results across countries. The document also discusses problems arising from the potential need to collect wealth data in surveys devoted to income and/or consumption or otherwise in a multi-topic household survey.

While the importance of analyzing household information on income, consumption, and wealth simultaneously (see OECD, 2013b) is recognized, household surveys in LMICs are often called to support a wider set of information needs and may therefore be subject to greater financial and technical constraints that must be addressed.

Micro-level data derived from household surveys are a powerful tool that can be used for a variety of purposes. The first product is the report that is usually published after a survey is conducted, which summarizes the high-level results of the survey through descriptive tables and graphs. Although extremely useful for the general public and public authorities as well, often the report focuses only on the main results.

In fact, microdata can feed more specific studies and simulation models that are extremely useful for the design and evaluation of policy measures, whose impact is determined by how market institutions and individuals react. As individuals differ enormously not only in their economic conditions in terms of wealth, income, or consumption but also in their financial literacy, saving attitudes, risk aversions, intertemporal preferences, and other behavioral characteristics, the policy measures should account for such a variation across population segments and territories.

This is the reason why, in addition to wealth and its components, in this document, we also mention other related aspects that are important in the framework of the most extensive information set to be made available to the public authority. These phenomena should find some space in a general survey strategy to be displayed over time. A common practice is to juxtapose special modules devoted to these more specific aspects to the core permanent component of the questionnaire on wealth and the other main variables. Of course, many other strategies can be arranged to achieve the goal.

Microdata can also be used in connection with the compilation of financial and wealth accounts, once the problems arising from the comparison of micro and macro sources are taken into account. This is part of the more general strategic line of integration among the statistical sources, that is described in Section 5.8. and in Appendix D.⁴

⁴ Anonymized microdata provided to researchers is a further product of a survey that plays a fundamental role both in developing economic research and in stimulating the public debate on the methods employed in survey analysis.

2. Wealth surveys around the world: a short history

2.1 Experiences in High-Income Countries

The first modern surveys collecting information on household wealth (or part of it) in HICs date back to the 1960s.⁵ After some less comprehensive efforts,⁶ the Board of Governors of the US Federal Reserve published the results of the 1962 Survey of Financial Characteristics of Consumers and those of the 1963 Survey of Changes in Family Finances. Since then, the Fed has conducted many waves of what is now called the Survey of Consumer Finances (SCF), which collects information on US households' income, wealth, and saving behavior every three years.

The oldest household wealth survey in Europe is the Survey of Household Income and Wealth (SHIW), conducted by the Bank of Italy from 1961-1966. Although it was a household budget survey not focused on wealth only, the first waves extensively collected data on property wealth, the most common financial assets, and debts. Moreover, due to a large proportion of households in conditions of post-war deprivation, a vast space was devoted to collecting information on durable goods and the difficulty of making ends meet. However, significant inconsistencies between micro wealth estimates and aggregate estimates derived from different sources (e.g., bank deposits available from the bank reporting, number of houses derived from the census) delayed a more systematic data collection of wealth items, which came only at the end of the 1980s, together with some studies on under-reporting (Cannari and D'Alessio, 1990; 1993).

Since then, many other HICs have conducted wealth surveys. The French National Statistical Institute (Insee), which had conducted a survey on housing since 1955, started a regular wealth survey every 4-6 years in 1986. In Germany, the Income and Expenditure Survey (Einkommens- und Verbrauchsstichprobe (EVS)) included questions on household wealth since 1978, while the Socio-Economic Panel (SOEP) included the first wealth questionnaire in 2002. In 1984, the first wave of the Canadian Survey of Financial Security was conducted, regularly replicated since 1999. In the 1990s, Spain launched the Spanish Survey of Household Finances (EFF), providing detailed information on the income, assets, debt, and spending of Spanish households every three years.

The analyses of such surveys had a strong national focus with most historical comparisons. The differences between countries in terms of the definition of aggregates and data collection procedures made international comparisons rare and difficult.

At the beginning of the new century, the Luxembourg Income Study (LIS), building on its successful experience with income surveys, and the Bank of Italy, drawing on its long-standing expertise in the field, launched the Luxembourg Wealth Study (LWS), an international collaborative project aimed at developing a conceptual framework to bring together and harmonize existing wealth surveys for cross-country analysis (Sierminska et al. 2006). The number of wealth surveys that could provide the researchers with a complete picture of household wealth with detailed subcomponents of assets and debts collected was initially very limited (Australia, Canada, Cyprus, Finland, Italy, Norway, Spain, Sweden, and the United States). The most exhaustive, in terms of completion of microdata that would allow creating a total household net worth, were five surveys only: the US

⁵ Aggregate estimates of the wealth of nations were produced in England, France, and the USA since the eighteenth century; in the second half of the nineteenth century, there was an important increase in this line of research, as testified by the Dictionary of Statistics, edited by M. G. Mulhall in 1884, that reported wealth estimates for about twenty countries. Microdata on household economic indicators, such as income, consumption, or wealth, have been found since the eighteenth century in many parts of the world (A'Hearn et al., 2016); microdata from national sample surveys on households, however, after debated infancy in the first part of the XX century, have been developed only after WWII.

⁶ In the post-WWII period, the early University of Michigan Survey of Consumer Finances collected in various waves important aspects of the household balance sheet. But the 1962 survey is the major landmark, both in that it made an effort to be comprehensive and detailed and in that it was able to credibly address the upper tail of the wealth distribution, but using tax-based data.

Survey of Consumer Finances (SCF), the Italian Survey of Household Income and Wealth (SHIW), the Canadian Survey of Financial Securities (SFS), the Australian Survey of Income and Housing (SIH), and the Survey of Household Finances (EFF) conducted by Bank of Spain.

In 2007 the Luxembourg Wealth Study (LWS) pilot project officially started with the harmonization of original variables from 9 countries into a common set of wealth components aggregating to three different measures of total net worth comparable across countries. As a pioneer project, the LWS database has given researchers and data producers an overview of the availability and comparability of existing wealth variables.

In 2010, a project initiated by the OECD, consisting of an international group of experts, came into existence to write guidelines for producers and users of wealth data. The final product of this collaboration, "OECD Guidelines for Micro Statistics on Household Wealth," was published in 2013. Meanwhile, the European Central Bank initiated the Household Finance and Consumption Network (HFCN), which brought together experts from countries in the Eurozone associated with the Central Banks to collect data on household assets, debts, income, and other related variables.⁷

The LWS pioneer work in showing the world variation across wealth data sets in terms of availability and comparability of collected variables, the initiative of OECD and excellent work of the HFCN, the experience in gathering and providing the wealth data by the Board of Governors of the Federal Reserve System brought together a better conceptual framework for measuring and collecting surveys on household wealth. Even though in the last ten years or so, the HICs started having wealth-dedicated surveys, there are still some countries that have only special modules on wealth (e.g., Japan).

Table 2.1 reports the wealth data available for the 26 countries in the LWS database at the beginning of 2026. Most of these countries are HICs, with only Colombia, India, Mexico and South Africa belonging to middle-income countries.

The harmonization exercise conducted within LWS highlighted a wide heterogeneity of definitions, questionnaires used, and data collection methods.

In particular, the surveys that are not designed with a wealth focus suffer from the poor availability of detailed wealth subcomponents. For instance, in some surveys, all debts are included in one variable and cannot be separated by the purpose of taking the loan. Some surveys still collect only one variable for financial assets or split financial assets between cash and other financial assets.

⁸

⁷ The Household Finance and Consumption Survey (HFCS) is a harmonized survey on income, consumption, and wealth. It is a joint project of the ECB, the national central banks of the euro area (Eurosystem), some European countries outside the euro area (in 2020: Croatia, Hungary, and Poland), and several national statistical institutes. In its fourth wave in 2021, the survey covered over 83,000 households across 22 countries.

⁸ Surveys that are present in LWS, always have the major subcomponents (either in aggregated form or with detailed subcomponents) that constitute the measure of wealth.

Table 2.1 - LWS Database (countries and years)

COUNTRIES	WAVES II- IV	WAVE V	WAVE VI	WAVE VII	WAVE VIII	WAVE IX	WAVE X	WAVE XI	WAVE XII
Australia			2004		2010	2014	2016	2018 2020	
Austria					2011	2014	2017		2021
Canada		1999	2005			2012	2016	2019	2023
Colombia					2010 2011	2012 2013 2014	2015 2016 2017	2018	
Chile				2007		2014	2017		2021 2024
Denmark							2015 2016 2017	2018 2019 2020	2021 2022
Estonia						2013	2017		2021
Finland	1987 1988 1994	1998	2004		2009	2013	2016		
Germany		2002		2007		2012	2017		
Greece					2009	2014		2018	
India	1991	2002				2012		2018	
Ireland						2013		2018 2020	
Italy	1995	1998 2000 2002	2004	2006 2008	2010	2012 2014	2016	2020	2022
Japan			2004	2009	2010 2011	2012 2013 2014	2015 2016 2017	2018 2019 2020	2021
Luxembourg					2010	2014		2018	2021
Mexico								2019	
Norway					2010	2013	2016	2019 2020	2021 2022
Slovakia					2010	2014	2017		2021
Slovenia						2014	2017		2021
South Africa							2015 2017		
South Korea							2017	2018 2019 2020	2021 2022
Spain		2002	2005	2008	2011	2014	2017		2021 2022
Sweden	1997	1998 2000 2001 2002	2003 2004 2005	2006 2007					
United Kingdom				2007	2009 2011	2013	2015 2017 2019		2021
United States	1995	1998 2001	2004	2007	2010	2013	2016	2019	2022
Uruguay						2012 2013	2017		

Source: LWS website (<https://www.lisdatacenter.org/our-data/lws-database/>)

Further heterogeneity concerns some subcomponents of long-term savings, such as pension assets and the value of life insurance. While data on individual private pensions are mostly available, the lack of occupational and especially social security pensions poses a problem for the complete measurement of total wealth. This is particularly problematic in the case of pension assets that are not based on accounts and is the major problem in constructing the total net worth. As a result, additional measures of wealth are often juxtaposed to the ideal one to exclude unavailable subcomponents of

pension assets, so that they are comparable across all surveys. Even if pension entitlements are available in the microdata on wealth, the measurements of the amounts vary by the surveys.

Further important elements in the heterogeneity of surveys are the sample design and the treatment of unit and item nonresponse. In addition, the collection of information in the surveys differs across countries in some respects. Some surveys fully collect the information during personal interviews (CAPI or CATI) or self-filled mailed-in surveys (e.g., Japan). In some cases, there is also information on assets and debts coming from register data collected for administrative purposes and matched with survey data. The latter typically provide tax or purchase values rather than market values, calling for ex-post adjustment procedures.⁹

Most of the surveys that collect wealth information in HICs are designed in such a way that the many wealth components are asked of the most financially knowledgeable person in the household or the decision-making person and collecting assets and debts at the household level. Only a few surveys ask questions about the assets and debts of each individual in the family or household. The principal exception is pension assets, which are usually asked at the personal level.

All types of assets asked in the surveys are classified by the type of asset held in possession. The liabilities are usually grouped by the purpose of debt, which reflects the acquisition of particular types of assets. However, some surveys additionally collect data on liabilities by grouping them into debts that are secured against assets and the type of asset held as security. Additionally, the grouping of debts might involve the concept of non-guaranteed institutional loans that reflect, e.g., the outstanding balance on the line of credit, overdraft balance, or credit card borrowing. For example, the data producers associated with the network that conducts Eurosystem's Household Finance and Consumption Survey under the European Central Bank take such an approach.

Although the present Guidelines are expressly addressed to LMICs, they will prove useful also for HICs as soon as one wants to compare across LMICs and HICs countries. Sharing concepts, definitions, questionnaires, and data collection procedures may help in reducing the heterogeneity that negatively affects international comparability.

2.2 Experiences in Low- and Middle-Income Countries

One of the few, and probably the oldest, surveys on household wealth in LMICs is the All-India Debt and Investment Survey (AIDIS). The first survey was conducted by the Reserve Bank of India (RBI) in 1951-1952 in 75 selected districts spread across all over the country; this experience was followed by a similar survey, conducted in 1961-62 in rural areas only. However, it is only in 1971-72 that the survey, under the responsibility of the National Sample Survey Office (NSSO), assumed a shape, in terms of content and national representativeness (covering both rural and urban), similar to that of the current surveys.

Since then, many other surveys have been conducted by National Sample Survey (NSS) in India, viz., during 1981-82, 1992, 2003 and 2013. The latest AIDIS was conducted by NSS in India during 2019. During 2019 in the AIDIS detailed information was collected about the value of financial and real assets and debts owned by households, as well as information on financial inclusion. The nationally representative sample comprised more than 100,000 households in 2019, selected in about 6,000 rural villages and 4,000 urban blocks.

A wider interest in wealth measures in LMICs is quite recent. Rutstein and Johnson (2004) developed an index of wealth that summarizes the standard of living of individuals and households widely used in DHS surveys. The wealth index, despite its name, is not a direct measure of wealth;

⁹ These procedures are necessary due to the evaluation differences (current value on the market vs. historical value or cost). For instance, the real estate value for which the information is obtained from the register data based on tax values or purchase value needs to be adjusted. Both values with additional information on the real estate (e.g., location) provide enough information to approximate the market value.

however, it has been extensively used as a proxy measure for ranking households by the relative socio-economic status of households. It has also been used within the framework of the Demographic and Health Survey (DHS) Program, which collects and disseminates high-quality demographic, health, and socio-economic data.¹⁰

The growth of multitopic household surveys that began in many LMICs in the early 1980s, such as in Ivory Coast and Ghana, supported by the World Bank Living Standards Measurement Study (LSMS) technical assistance, marked the start of collecting nationally representative data on various components of wealth (e.g., land and livestock). While the main purpose of this data collection was to better describe household well-being and poverty, interest remained limited to certain aspects of wealth.

An important contribution to the development of surveys that have examined the main elements of wealth has been provided by the studies carried out by the United Nation's EDGE (Evidence and Data for Gender Equality) project on individual wealth and gender differences (see also United Nations, 2019). The project developed a wide cooperation with NSOs of several countries (Georgia, Maldives, Mexico, Mongolia, the Philippines, Uganda, and South Africa) to study and refine the methodologies for collecting good quality data on assets held by individuals.

The analysis was deepened with the collaboration of the LSMS team who conducted a series of experiments and evaluations on various aspects of the survey, for example, the relationships between the respondent and the reported ownership and control. The material developed under this project, known as LSMS+ (Hasanbasri et al., 2021), is at present the most comprehensive methodology if interested in asset ownership from a gender perspective. It will be treated in the report as a starting point for further analyses. Other surveys supported by LSMS have had modules on the values of household land ownings, and of financial accounts.

According to a review recently conducted (see Appendix A) and excluding the experimental surveys conducted under the EDGE and LSMS+ projects, the number of LMICs with a national survey collecting data on household wealth is quite limited: India, China, Mexico, Thailand, South Africa, Costa Rica, and Colombia among the Upper-Middle-Income countries and Indonesia among the Lower Middle-Income countries. However, mainly due to the above-mentioned projects, there are several countries whose household surveys, although focused on income and expenditure, have been recently extended to assets and debts. This makes the list of wealth surveys more nuanced, as will become clear from the analyses conducted further in section 4.1 and in Appendix A of this report.

¹⁰ The wealth index is based on a set of observable indicators such as household assets, housing characteristics, and access to basic services. The index is obtained using Principal Component Analysis (PCA), which is a statistical method that reduces a set of correlated variables into a smaller set of uncorrelated variables. The wealth index is the first principal component, i.e., the component capable of retaining the maximum information of the starting indicators. By design though, a PCA wealth index cannot provide a measure of wealth that would allow one to infer that one household is twice as wealthy as another (i.e., it is not a cardinal measure); it can only rank households. The values of the wealth index have no cross-country comparability (unless the index is constructed with data that has been pooled across countries). The same point holds for intertemporal comparisons as well. For these reasons, the index is substantially limited in its use as a proxy measure for household wealth. It has been shown to be a powerful covariate in survey data analysis. Filmer and Pritchett (2001) suggest that the index is able to represent long-term economic status even better than income and consumption. Its vast usage in more than 50 countries demonstrates the interest in statistical measures able to better represent the assets owned and their impact on the standard of living of the households.

3. Wealth in household surveys in LMICs

3.1 Wealth

3.1.1 Definition of wealth and its components

According to (OECD, 2013b), “*Wealth is the total stock of economic resources that is held at a point in time*”. It “*refers to the value of assets held after deduction of liabilities outstanding. Because the level of wealth is a net value, it is sometimes referred to as net worth*” (OECD, 2013a) or net wealth.¹¹

Positive terms of wealth are called assets. According to SNA 2008, “*An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.*”

Assets can be real (non-financial) or financial. Real assets have worth due to their substance and properties. Examples of real assets held by households are houses, land, and jewels. Financial assets represent financial claims on others; examples include money held in cash or in the bank account, or that invested in government bonds or shares. Liabilities are negative components of wealth, which consist of debts and other liabilities.

To be part of wealth, an asset must be – at least in principle - tradable or exchangeable for money or other goods; for this reason, for example, human capital is not considered wealth.¹² Assets are usually measured through their market value, i.e., the value the owner could obtain by selling them.¹³ Instead, potential assets (or liabilities) that may become real or available depending on the occurrence of a specific future event that is uncertain at the time of reporting (the so-called “contingent assets/liabilities”) are not usually considered to be part of wealth. In fact, these do not constitute assets or liabilities that are currently held with certainty, but rather contingent items that may materialize only under specific conditions.¹⁴

Wealth is a stock, i.e., the amount of resources held in an instant of time. Consumption, savings, and income (which is the sum of the first two) are instead flows measured over a given time interval (e.g., one year). Wealth is often referred to as the cumulative value of past savings. However, the relationships among these components (consumption, savings, income, and wealth) are more complex and will be explored later (see Section 3.3).

Household wealth is formed by positive and negative items (assets and liabilities respectively); thus, its value is typically positive, but it can be negative if debts exceed assets.

The System of National Accounts framework (SNA 2008) presents a long list of assets and liabilities within a hierarchical structure describing the various components of wealth (EC et al., 2009;

¹¹ In what follows, we heavily rely on SNA 2008 and ESA 2010 (Eurostat, 2013) macro accounting standards, and on OECD (2013a) and OECD (2013b) micro guidelines; limited differences, mostly due to specific conditions in LMICs, are specifically highlighted.

¹² In recent years, national accountants have proposed assigning an economic value to natural stocks (such as seas, rivers, and forests), even when they are not typically exchangeable on the market. However, these assets are mostly in public hands and fall outside the scope of household wealth.

¹³ In some cases, the market value of an asset is not easily determined (e.g., a family painting or jewelry). In other cases, households may have the right to privately use property resources (e.g., state-owned agricultural land), enjoying economic benefits similar to those of ownership in terms of current and future conditions, without having the right to sell the asset. In such situations, alternative approaches must be used to estimate their value.

¹⁴ Examples of contingent assets include an expected inheritance or a potential insurance payout for a damage claim that has yet to be approved. While the credible expectation of receiving these assets in the future might influence economic behavior, such “contingent assets” are not considered part of current wealth.

Eurostat, 2013). Although it can be useful to assume the SNA classification as a reference point, in what follows it will not be taken as-is in the definitions and the aggregation plans used in household surveys for several reasons. On the one hand, the SNA hierarchical classification assigns a high priority to the distinction between produced real assets and non-produced real assets, which would imply some unfortunate consequences, for example, the need to separate the value of the dwellings owned (produced real assets) from that of the land on which it is built (non-produced real assets), or similarly that of the trees and cultivated plants and that of the land below. Moreover, the list of items provided by SNA is much too detailed and includes many items that are negligible for households (i.e., Weapons systems or Mineral and energy reserves). For the purposes defined in these Guidelines, it is reasonable to simplify this classification.

On the differences between micro and macro estimates, we will come back in Section 5.9, when comparing estimates derived from surveys with those available in the aggregate accounts, which usually use different data sources. The above examples give an idea of the reasons justifying the departure from SNA classification, which will be as much as possible limited to the case where the complications in data collection, estimation, or interpretation of results prevail to the gains of convergence toward a widely shared framework that facilitates micro-macro comparison.

In what follows, we propose a simplified list of assets and liabilities, concentrating on the most relevant items whose questions needed for the data collection can be reasonably transferred into a survey questionnaire conducted in a LMIC (Table 3.1).¹⁵ Also, the structure of the aggregation tree is simplified compared to SNA, and is organized to provide useful aggregates for most analyses on household behavior. However, alternative analyses can be conducted using different aggregation schemes obtained by re-arranging the collected data.

It is worth noting that both the list of the items to collect and the aggregation scheme must be intended as a useful tool aiming at providing a framework for data collection as much as possible uniform across countries, thus improving the comparability of results obtained elsewhere on similar data. Of course, each country must take into account its specificities and build its own questionnaire, capturing adequately all the relevant forms taken by wealth in the specific social contexts analyzed. For example, different countries may have varying levels of participation in financial markets, and the way these items are captured in the questionnaire will crucially depend on this aspect. Missing Omitting a country-specific form of savings may lead to inconsistent wealth estimates. Too many details in the list of items covering all the possible cases may create unnecessary respondent burden whenever some occurrences are extremely rare.

In general, adhering to international standards is crucial as it facilitates comparisons and should always be taken as a starting point. Usefulness is increased when it is also possible to make comparisons across countries and time. What matters is that data collection enables obtaining an accurate estimate of wealth and its main components, useful for providing insights about its distribution in the population and potential policy actions.

¹⁵ The wealth concretely defined in surveys conducted in LMICs could require further simplifications of the picture described in the table, based on the prevailing household conditions in these countries.

Table 3.1 – Household wealth and its main components

Real assets (RA)
Dwellings and non-residential buildings (homes, attics, garages, shops, ...)
Land (agricultural and non-agricultural)
Machinery, equipment and inventories
Livestock
Consumer durables (vehicles, furniture, computers, mobile telephones ...) (*)
Valuables and other real assets (jewelry, gold, antiques, paintings, ...)
Financial assets (FA)
Cash and deposits
Government securities and other public or private bonds
Shares, investment funds and other financial assets
Financial Liabilities (FL)
Debts on properties
Debts on business investment and trade debts
Other debts (consumer credits, ...)
Household wealth = Real assets + Financial assets - Financial liabilities

(*) Within the SNA, consumer durables are not treated as a form of wealth but as a form of expenditure. However, in LMICs, the need to represent even small forms of accumulated resources suggests considering durable goods in wealth.

3.1.2 Valuation criteria

According to SNA 2008, assets and liabilities should be valued at market prices on the date to which the survey relates.¹⁶ A standard question is “*What is the value for which this asset could be sold?*”. When there are no observable market prices, which may be the case if there is a market but no assets have recently been sold on it, estimates should be made of what the price would be if the assets were sold or acquired on the market on the date to which the survey relates. If the market price is not available using the above criteria, real assets produced can be valued at market values of similar goods, or, if this is not possible, at production cost, taking into account their vintage.

In addition to observed market prices, values of real assets may be estimated by revaluing and accumulating acquisitions less disposals over the assets’ lifetimes.¹⁷

A different criterion for evaluating an asset relies on computing the present value of future economic benefits. This method relies on the stable relationship existing in competitive markets between the values of assets and the corresponding flows of expected returns. Any significant imbalance would trigger individuals to readjust the situation. For example, in the housing market, the relationship between the value of a house and its rental price is quite stable over time. If buying a home becomes more expensive, more people may choose to rent, increasing demand and thereby

¹⁶ In some countries informal markets might be very relevant and should be taken into account as well.

¹⁷ An entrepreneur that purchased business machinery for \$10,000 and that later disposed a part of it for \$2,000 has an estimated value of the machinery held, based on its lifetime acquisitions and disposals, equal to \$8,000.

driving up rental prices. Therefore, in cases where the market value of a property is difficult to obtain directly, one can exploit this approach to obtain an estimation starting from the rental price.^{18 19}

If these above are the general rules, when conducting a survey, it is necessary to choose a strategy that ensures both easy application and good quality of the collected data. For example, the house of residence can be valued in various ways. Usually, the subjective evaluation of these assets is the preferred choice; it is assumed that the owners know better than others the characteristics of their properties. If they also have information on recent similar houses sold in the area, they can provide a reasonable estimate of the value at which they could be sold.²⁰

Also for land, as for almost all the other assets, the simplest way to obtain a value owned is to directly ask the owner for an estimate, possibly based on recent sales prices of similar properties in the area. The similarity between the property sold and that object of evaluation should concern both the physical characteristics of the land and the tenure rights. This approach can provide an idea of the market value of the land and help establish a baseline price. In many circumstances, however, this estimation method could lead to limited reliability estimates and many missing values, due to the lack of knowledge by the owners of the various characteristics impacting the land's value.

Moreover, research has demonstrated a tendency of owners to overestimate their assets, probably due to the idiosyncratic features that are valued by the owner.²¹ A possible explanation of these results can be attributed to the so-called "endowment effect", i.e., the cognitive bias that implies the tendency of individuals to ascribe higher value to things they already own, compared to equivalent things they do not own (Kahneman et al., 1991). The results are quite convergent in indicating the presence of an overestimation of subjective estimations compared to actual market values, even if the size of the gap significantly differs across studies and is small in some studies.²²

Usual strategies applied to limit inaccurate evaluations rely on the collection of related information, such as the dimension and the location of the dwelling or land, as well as other characteristics that can affect the value of the asset (e.g. the number and the different types of livestock). This information is used both to remind the respondent of the characteristics that can affect the asset value and to favor a post-survey treatment of incongruous responses through a subsequent imputation procedure that combines the information collected and some evaluation procedure and

¹⁸ The present value of a flow of constant returns is determined by discounting them back to the present time, considering the interest rate and the time horizon. If the flow of constant returns extends over an infinite horizon, the present value (PV) is determined by applying a perpetuity formula, where the constant returns (e.g., rent) are divided by the discount rate (i), $PV = \text{rents}/i$. If the horizon is limited to n years, the present value of a flow of constant returns can be calculated using the following formula: $PV = \text{rent} * [1 - (1+i)^{-n}/i]$.

¹⁹ According to the United Nations (2019), the sales value method provides more robust estimates of asset prices than those based on rental values.

²⁰ In thin markets, the prices that can realistically be obtained depend on the time it takes to match a willing buyer with a willing seller. This price may differ from a "fire sale price", which represents the amount the owner could obtain if forced to sell quickly. Generally, it is preferable to let the owner determine the valuation, as it reflects the price they are willing to accept to sell the property.

²¹ In some cases, as recalled by HFCN (2020), from the point of view of economic behaviors, perceptions can be as much as important as real things.

²² According to Goodman and Ittner (1993) that use data from the 1985 and 1987 American Housing Survey, the average U.S. owner overestimates the value of his/her house by 6%; estimates obtained by Dreesen and Damen (2022) on more recent data (2001–2019) from the same survey find evidence that Americans overestimate the value of their homes by only 1.3% on average. Le Roux and Moreno (2019) find evidence that euro-area homeowners overestimate the value of their properties by around 9% while Tur-Sinai and al. (2020) show that self-reported estimates of Israeli dwelling values are, on average, 20% higher than the mean market prices of houses in the corresponding census tracts. Gonzalez-Navarro and Quintana-Domeque (2009) find that Mexican homeowners with long tenure significantly overestimate the value of their homes.

external information (i.e., unit values, regressions, ...). Of course, the higher the correlation between this side information and the aggregate of interest, the better the estimated value in terms of accuracy.

On the other hand, evaluations alternative to the self-reported estimate are not easy to obtain, in particular in LMICs where administrative or other external reliable sources are often unavailable.

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There are also cases in which the data collection of nominal values can be preferred to that of market prices (7.02 ESA 2010). For example, a certain amount of treasury bonds in the household portfolio may change its market value over time, depending on the current interest rate and the maturity of the bonds. As it's likely the owner does not know how this asset appreciates or depreciates for the sake of simplicity, it is usual to collect information on the nominal value along with the characteristics of the financial instrument. Possibly, *ex-post* adjustments can be conducted on the basis of more precise information that is available on the specific market dynamics.²⁵ Analogously, the value of financial instruments denominated in foreign currency can be collected at their nominal value; the conversion into the national currency, at the market exchange rate prevailing on the date to which the survey relates, can be carried out at a later stage.

A similar method that can be employed for some assets (e.g., jewelry, gold medals), considers the collection of the asset's value at the time of acquisition along with the year of acquisition. This allows for an *ex-post* estimation of the current value by adjusting the acquisition value through a price index.

If the asset is subject to depreciation over time, such as for consumer durable goods, one can obtain a reasonable estimate applying to the acquisition value some general rule. One possibility is to apply the very simple hypothesis of a linear depreciation of the value of the assets held by the household (e.g., the cars); once it is known the year of production of the goods (or the year of acquisition for those not acquired new) and its life span (i.e., the number of years after which the good has no more any value) one can easily derive the value at the end of the current period subtracting a constant share of its initial value. Another common approach uses a geometric rule through a constant rate of depreciation. The Canberra manual on Capital Stock Statistics (ECE et al., 2000) suggests that the method known as the “sum of the years digits” (SOD) more closely approximates the ways in which most capital assets lose their value over time. More suitable models can be applied, adapting to different depreciation profiles of durable goods (Amendola and Vecchi, 2021).

As to the time to which the wealth survey data refer, there are two main alternatives: the moment of the interview and the end of the previous year. Both options have pros and cons that deserve to be analyzed relative to the data needs and the constraints on data collection. Choosing to refer to the evaluation of assets and liabilities at the end of the year ensures the internal consistency among the items and the total wealth and full comparability of wealth figures across households. Moreover, this strategy makes easier the comparability with external data, such as National Accounts or other sources. On the other hand, it can be complex to keep the data collection of thousands of households

²³ The opportunities and challenges of matching survey data with more accurate information from external sources are discussed in Section 5.4.

²⁴ Administrative data can sometimes provide an inaccurate representation of market value. Nevertheless, collecting administrative values (e.g., cadastral property values) either from respondents or directly from registers can be valuable for several reasons. The joint availability of market and administrative values enables comparisons between the two measures and, where significant differences exist, can inform improvements in administrative assessments. Additionally, administrative data can support evaluations of the efficiency of policy measures, offering insights for refining targeting mechanisms.

²⁵ It is worth noting that if a treasury bond is planned to be held to maturity, then variation in its market value may be treated as irrelevant.

within a short lag of time; in the interviews conducted weeks or even months after the end of the year, there can be problems with memory in retrieving the needed information. This problem can be addressed by resorting to documents (i.e., account balances or other sheets) which, however, can make data collection more time-consuming and more intrusive for the respondents. The survey strategy of collecting wealth values at the time of the interview must deal with a lack of strict comparability of the provided answers when the fieldwork extends over several weeks or months. The lack of comparability becomes more serious when asset prices significantly vary over time. In such cases, there can be the need for an ex-post adjustment of the provided values using some price indices (i.e., real estate or stock market indices) in order to estimate the values of wealth items referred to some common point in time across the households (or the end of the year).

In any case, the choice of the reference point for assessing household wealth should be linked to the other variables being collected. In a survey that gathers information on income or consumption over the last 12 months, it seems natural to refer to wealth at the time of the interview. On the contrary, if income and/or consumption refer to the previous calendar year, it is in principle advisable to align the reference point for wealth with the end of that period. If this is unfeasible due to respondent burden or other considerations, asking for the valuation at the time of the interview may be acceptable, even when income and consumption are referred to the calendar year. In such cases, reporting the valuation at the end of the year should be carried out through an ex-post procedure.

3.1.3 Real assets

- *Dwellings and non-residential buildings*

The house held by the owner and used as a principal residence is one of the most common forms of real wealth all over the world. In many cases, it is the main form of investment for the household, that combines the function of storage of value with that of providing the owner and his or her family a residence. Households may also own houses for purposes different from their residence, for example for vacation, business, or rent.

The house is an investment characterized by low liquidity, i.e., it cannot be easily converted into cash and by high transaction costs; for these reasons, it is usually classified as a medium- or long-term investment. At the same time, in more formal credit markets the house can be used as collateral for obtaining liquidity. This aspect can be important when approaching the analysis of the household financial vulnerability, which is more easily contrasted by liquid assets.

It is usually considered a safer investment than most financial investments, although it also can be subject to capital loss due to a reduction of its price in the market, which only in very rare cases results in the total loss of value (i.e., earthquake, flood, ...).

Moreover, also attics, garages, shops, and other residential and non-residential properties owned by the households belong to this category. For these assets, the evaluation criteria discussed for houses can be applied.

As will be clear in section 3.1.6, also informal or partial rights on dwelling (e.g., the long-term use rights) are to be considered in this basket.

As mentioned in the previous section, it is highly recommended to accompany self-reported valuations with key property characteristics (e.g., square meters, number of rooms, bathrooms, location, etc.).

- *Land, trees, and plants*

In LMICs land is often a fundamental item of household wealth; its ownership can make the difference in terms of food security, economic development, and well-being. In these countries, many households heavily rely on agriculture, and land is necessary for farming and livestock rearing, which

often represent the main sources of food and income. Moreover, land is also an asset that can be used for the construction of a new home and can easily be passed down from generation to generation. For all the reasons above, the ownership of land and its value should be carefully assessed by household surveys on wealth.

As for dwellings, before asking for the self-reported evaluation, the main characteristics affecting the value of the land should be asked.

Location is a key factor influencing the value of the land. Usually, land located in areas with high demand, such as urban centers, is more valuable than land in remote areas; access to water or the proximity to amenities like schools, hospitals, and shopping centers can drive up the value. Moreover, zoning and land use regulations can limit how the land can be used and seriously have an impact on its value. In rural areas, cultivable land can also determine higher values.

A further crucial factor affecting the value of the land is its size. All other things equal (e.g., soil quality, accessibility, drainage, and potential for flooding or erosion that can also affect the land's value) larger pieces of land are more valuable than smaller ones. However, obtaining an accurate value of land area during an interview is not always so simple. In designing the collection of self-reported land data, special attention should be devoted to the measurement units, leaving the interviewees the possibility of providing the answer in the units they are more comfortable with and planning ex-post appropriate conversion factors.²⁶

Moreover, the diffusion of the informal economy observed in LMICs calls for a careful evaluation of the degree of ownership of land, which can be more loosely codified than in HICs. The issue of informality not only for land but for other assets too will be discussed in detail in Section 3.1.6 According to Hovhannisyan et al. (2022) who have deeply investigated the measurement of individual rights to land in LMICs, in some circumstances it is preferable asking a more general set of questions about the use and the rights on the land rather than a single and direct question on the tenure of the property. This kind of questionnaire more accurately captures the different nuances that the ownership can take on in an informal setting. There may be an exclusive use of the land without, for example, the possibility of selling it, or inheritance rights that can be secured only informally, without any documents attesting the property. All these aspects need to be evaluated, and the corresponding information collected.²⁷

The process of evaluation can be more complicated when the land tenure differs from full ownership. For example, if there is a right to use the land but not the right to sell it, it's difficult for the respondent to provide a selling price, because no (or only very few) market exchanges exist for that kind of property. In such a case, one can resort to one of the valuation criteria recalled in Section

²⁶ Carletto et al. (2016) evaluate 3 different methods for determining the land area: 1) the self-reported area; 2) the compass and rope method; 3) the GPS-based measurement. The self-reported is the most common means of collection of this kind; it is quick and inexpensive because it does not require any equipment. However, as already recalled for the values of the plots, the figures provided by the respondents can have some problems in terms of accuracy and bias. The compass and rope method, consisting of physical measurement conducted by the enumerator on the ground, is traditionally considered the gold standard for this kind of measurement in terms of accuracy. It is however much more cumbersome and time-consuming than the other two methods and cannot reasonably be adopted in large-scale surveys. GPS measurement is becoming increasingly popular, proving to be a cheap and accurate alternative to more costly methods. In large-scale surveys, however, these measures are plagued by a significant missingness rate (15-30%). Thus, it is suggested to ask for both the self-reported measures and then the GPS measures; the former is not the primary measurement method, although it can help as a baseline for imputation whenever objective measurements are missing.

²⁷ The need for data collection of information on ownership documents and rights, and tenure security of land is explicitly recalled within the SDGs framework (Brunelli and Gourlay, 2022; United Nations, 2016). In particular, the SDG indicators 5.a.1 and 1.4.2 suggest measuring respectively the "(a) proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure" and the "proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure.

3.1.2. For example, if a yearly rental value can be obtained from similar neighboring land, the value can be derived as the present value (calculated using a reasonable real discount rate) of this flow (the rent) over a finite or infinite horizon, depending on how long the household (and the heirs) can continue to freely use that property. Information about the expected future availability of the land and about the probability of leaving the right to descendants should be collected.

Although SNA considers trees and plants assets in a different basket from the land they sit on, it can be complex to separate their values. It is thus preferable to collect data on the value of the land, inclusive of trees and plants it hosts. The same can apply to some rural buildings, that cannot be sold without the plot of land they have around them. In such cases, it is crucial the enumerator provides enough instructions to the respondent to avoid double counting of assets.

- *Machinery equipment and inventories*

This item includes both agricultural and non-agricultural assets used for “self-employment” business like instruments, inventories, farm equipment, and any other tangible or intangible (i.e., goodwill) value belonging to the business directly owned by the households. Non-self-employment business wealth (i.e., the shares publicly traded) is considered among the financial assets. This approach allows for a clear distinction between “direct” investment in businesses controlled by household and “portfolio” investments in securities, which typically involve different degree of control, liquidity, and risk.

- *Livestock*

Livestock, together with land, which we have already discussed, represent the most important assets in rural areas of many LMICs. Collecting data on the animals held by the household is fundamental for the evaluation of its well-being and wealth. Owned livestock, due to its divisibility, can be sold more easily than other assets (e.g., property) in case of need, thus providing a more effective safety net in the face of unexpected events that require access to quick financial resources.

It is cognitively burdensome to ask respondents to provide a total value of the livestock, as they need to sum animals with very different unitary prices. Usually, it is preferred a more gradual approach (Zezza et al., 2016). A list of animals is presented to the respondent; the list can include cattle, sheep, goats, chickens, pigs, and so on, and will be adapted to the specific country in which the survey is conducted. For every animal on the list, at a minimum it should be collected data on the number held; moreover, other characteristics relevant for a more accurate evaluation (e.g., age, maturity, sex, breed) can be asked if their values significantly change correspondingly. For example, in some societies, male animals may be valued less than females because they cannot produce offspring on their own. Male animals may be raised primarily for meat production or used for other purposes, such as plowing fields or providing wool.

Then, for every item on the list, questions on the number and value of animals held, or bought and sold over the previous months should be asked. This information can be used (together with the same information provided by other farmers of the same area) to determine a unitary value of each item and thus that of the livestock held by the household.

- *Valuables and other real assets*

The item includes goods whose primary role is the storage of value. Examples of valuables are jewelry, gold medals, antiques, paintings, and other works of art. However, the list should suitably be adapted to the social context, including the most representative items of this kind among the local population. One could also consider, for example, fine dishes, embroidered sheets, and other items used for the bride's trousseau.

These items can represent an important share of household wealth, mainly in LMICs where the role of financial markets in the allocation of the flow of savings is reduced.

Among the other real assets, SNA mentions the ownership of tradable licenses that confer the right to work in a specific market (e.g., for taxi drivers) or forms of intellectual property (e.g., copyright). The amount of these items can be in some cases remarkable.

In this basket, SNA also includes the rights to use land, or other properties held by the households, an item that - as it will be explained in Section 3.1.6 - can be remarkable in some LMICs. However, for the disaggregation of household-level wealth, it would appear more intuitive to keep similar assets together, regardless of the form of property (e.g., counting the value of the land held by usufruct with the rest of the land fully owned). Thus, we recommend classifying real estate over which households hold long-term rights of use together with the corresponding type of owned real estate.

- *Consumer durables*

A durable good is a consumption good that delivers useful services over an extended period of time (Diewert, 2009). Although SNA does not classify durables as wealth items (they are only a memorandum item; see point 7.94 at pag. 180 of ESA 2010 Eurostat Manual), their inclusion in wealth is widely supported by researchers. Durables can be a very important item for households residing in LMICs, for those with low levels of total wealth. Different values of durables held can indeed help identify various well-being conditions, particularly for those who do not possess more significant forms of wealth.

They are usually divided into vehicles (cars, motorcycles, bicycles, boats, ...) and other durables (kitchen and laundry appliances, furniture, computers, mobile telephones, and other household items) that could provide their services over the years.

For these goods, it is relevant the distinction between the expenditure, i.e., the amount spent for the purchase, and the consumption, i.e., the share of the value that can be imputed to a given period.

As to wealth, the starting point for estimating the value of the stock of household durable goods is a list of goods (vehicles, electronic devices, furniture, ...) on which acquiring information on the ownership. If the data collection is done within an expenditure survey, it is useful to recall that the durables bought during the reference period usually represent a subsample only of the durables held at the end of the period, either because some of them have been bought in a previous period or because some may have been acquired differently (e.g., received as a gift). Moreover, cases of goods bought during the reference period and no more owned at the end of the period are possible. These notes imply that the questions on the expenditures and those on the ownership should be asked in the same module of the questionnaire but independently of each other.

Once information on the ownership of durable goods and, when available, on the number of items held has been collected for a given point in time, it is necessary to proceed with the valuation of these goods.

As for other assets, the first option is to ask the respondent to provide an estimate, good by good, of the amount that he/she could receive by selling it (in the condition it is at the moment of the interview, or it was at the end of the reference period). This evaluation process can be less problematic for the goods that are frequently changed on the market (i.e., cars, tuk-tuks, motorbikes). The respondents may probably have difficulty in providing the answer for all the goods for which the market exchanges are rare. Asking about the value the household could get if they sold their washing machine bought many years earlier can be highly demanding for many respondents and can result in a high rate of missing or inaccurate values. On the other hand, asking for a replacement value, i.e., the cost of replacing the good with a similar item to be bought in the present market entails the risk of losing the characteristics of the specific asset to be evaluated.

More reliable evaluation alternatives are based on the collection of further information, such as the initial cost and the year of acquisition, and on the application of some depreciation models

describing the average loss in value that durable goods experience with age due to their physical deterioration and market value change. It is worth noting that the loss of value during the reference period can also be used for the construction of the consumption indicator.

3.1.4 Financial assets

According to the Global Findex Database (Demirgüç-Kunt et al., 2022), the financial inclusion in LMICs is much lower than that observed in HICs, although that is bound to change with economic growth and financial sector development.²⁸ The number of financial instruments for which is reasonable to expect a diffusion among the population is thus correspondingly reduced. Nonetheless, financial assets are a fundamental component of wealth that needs to be analyzed.

In sample surveys, the collection of data on financial assets is usually carried out by identifying a list of financial instruments to ask for the ownership and possibly the amount held. The list must be adapted to the local context and, as said above, can be simplified by grouping the instruments. The list should include: a) Cash, deposits (current accounts, saving accounts, and similar financial instruments characterized by high liquidity), b) Government securities and other public or private bonds, c) Shares and other equity (possibly, excluding the shares of companies whose workers are mostly members of the same household, that can be included in the business assets), investment funds (investment tool that pools money from many individual investors to purchase a diversified portfolio of stocks, bonds, or other securities, that offers small investors access to professionally managed portfolios and a way to diversify their investment holdings). For those who are involved in a business, also the credits from customers should be considered and included in the category of “other financial assets”. In many countries can be of interest also distinguish between domestic and foreign financial instruments (currency, deposits, government bonds, shares, ...).

Moreover, in many LMICs, especially in rural areas, financial resources can be managed by associations that assume the form of savings clubs or Rotating Savings and Credit Associations (ROSCAs), i.e., groups of people pooling their money together to make loans to members who need it both for production and consumption purposes. It is an easy alternative to the risky habit of keeping savings at home as currency and allows access to microfinance also to people who in the formal financial system would be considered uncreditworthy, due to lack of formal guarantees. Likewise, informal credits to relatives (excluded members of the same household), friends, and other people should be considered and reported among the “other financial assets”.

Some further items could be considered in the residual item of other financial assets owned by households, depending on their diffusion among the population: a) Life insurance funds, i.e., some types of life insurance, such as whole life insurance, that have a cash value component that grows over time and can be used as a source of savings or investment for the policyholder (the amount included in the household wealth is the current value of the life insurance policy, that can be computed taking into account the present value of the policy's future benefit, the policyholder's age, gender, health, the current interest rate, and the cash value component if any);²⁹ b) Pension funds, i.e.,

²⁸ In recent times, the wide access to mobile phone financial payments and other remote services (i.e., money transfers), has largely developed access to virtual deposit accounts that do not need an office nearby and frequently allow small savings. This has widely favored financial inclusion in LMICs (Ahmad et al., 2020). These amounts should be recorded as a form of deposit.

²⁹ Life insurance policies which pay a benefit only if the insured person dies and otherwise have no value should be excluded.

accumulated private savings up to the time of the interview for future supplementary pensions;³⁰ c) a residual item including other financial assets (i.e., big sellers vouchers, crypto assets, ...).

In conducting household surveys in LMICs, it seems reasonable to devote more attention to the primary elements of the above list (i.e., currency and deposits), collecting data on their characteristics (i.e., formal/informal, mobile or not), and use. More sophisticated instruments could eventually be grouped, in order to capture their entity, even if with less accuracy. The extent to which owning a formal financial account (e.g. a deposit account) is a prerequisite for accessing more advanced financial instruments may vary by country. To avoid asking irrelevant questions, a specific section of the questionnaire—accessible only to those who meet these prerequisites—could be introduced.

As to the collection of the values held, Carletto et al. (2022b) recall that questionnaire design matters in reducing the extent of under-reporting. The authors cite some field experiments conducted in Albania and Pakistan demonstrating that more detailed requests of data increase item recall and in this way tend to reduce income under-reporting.

The under-reporting behavior can also be determined by the reluctance to provide accurate answers to a question perceived as sensitive. In this regard, when inquiring about the value of personal assets, we recommend using specific procedures that reduce the respondent's reticence. For example, the unfolding bracket procedure proposed by Juster et al. (1999)³¹ aims to reduce respondents' reluctance to disclose accurate financial asset amounts. In the absence of a precise answer provided by the respondent to a direct question, the procedure presents respondents with a series of brackets or ranges representing different levels of financial holdings and asks them to choose the bracket that includes their actual level of holdings. Then, more precise indications about the amounts held are progressively asked with further questions. This procedure reduces item non-response and captures as much as information the respondent is willing to provide from sensitive questions. Other simpler procedures based on range data collection are possible, as those used by the Bank of Italy (2015) or Kennickell (2017). If the respondent's literacy is not an issue, allowing them to fill out the questionnaire (or its most sensitive sections) independently during an in-person interview using the Computer-Assisted Self-Interview (CASI) methodology, or through a web-based data collection mode, can alleviate pressure and potentially elicit more truthful responses. The application of this method should be evaluated in relation to the specific context in which it is used.

3.1.5 Financial liabilities

LMICs usually have a relatively low level of household debt-to-GDP ratio compared to HICs, due to the lower level of economic development, the less developed financial system, and cultural attitudes toward debt. On the other hand, informal debts, such as those obtained through borrowing from family, friends, or other informal lenders, may play an important role in LMICs. It is thus very important also collect information about the type of agency providing the resources (institutional/non-institutional/relatives and friends), as for example, the All-India Debt and Investment Survey does.

A piece of information usually collected for the debts and used for classifying the debts concerns the destination of the received amount, as for example: a) debts for constructing/purchasing the principal residence, other residences, or non-residential properties owned b) debts for business investment and trade debts (for self-employed); c) other debts, that include debts for vehicles, other consumer durables, and other purposes (e.g., food, health, and rent emergencies). The classification

³⁰ Entitlements of pensions provided by the government, both related and not related to the work history of the citizens, including the social security pensions, should be conceptually included in the wealth aggregate (Feldstein, 1976, Feldstein and Pellechio, 1979, Wroński, 2022). However, these items are usually excluded from household wealth because difficult to compute and often not known even to the respondent.

³¹ The unfolding brackets technique has been used in various surveys to collect data on household financial assets, including the SCF conducted by the U.S. Federal Reserve, the China Family Panel Study, and the Italian SHIW.

of debts by purpose tends to follow the data collection of the related assets; for example, the interviewer, when talking about the principal residence, can ask about the related debt; similarly, while asking questions about vehicles and other consumer durables the interviewer can ask about - corresponding loans.

The form assumed by the debt (i.e., mortgage, personal loan, credit card debt, current account overdraft) and other specific characteristics (short- and medium-term vs long-term debts, collateralized vs non-collateralized, fixed vs variable interest rate) can also be important for the analysis (i.e., in terms of the exposure of households to interest rate shocks or financial risks assumed by intermediaries) and for alternative classification criteria. In some cases, it can be useful to distinguish between cash and in-kind debt or acquire information about the institutions behind the debt.

The interest rate applied is another important information that can be important to collect. The interest rates are often influenced by the creditworthiness of the borrower, the level of risk associated with the loan, and the prevailing market conditions. Interest rates on informal loans from non-household lenders (moneylenders, pawnshops) are often higher than those charged by banks or microfinance institutions whereas loans between households, especially between relatives, often have little or no interest. This is because informal lenders often operate in environments where there is limited access to formal financial services, and where borrowers may be perceived as high-risk due to a lack of credit history or collateral and inadequate legal frameworks for debt collection and recovery. When the characteristics of debts are numerous it can be useful to build a roster while the interview goes on and then organize a specific module where all the information is collected debt by debt.

It is also important the data collection of information about the possible delays in the payment of the installments and the possible consequences that borrowers face (i.e., legal, social pressure, debt trap).

A further field that in some contexts may be worth exploring is that concerning usury. When households have few options for obtaining credit, they may resort to usury which refers to the practice of charging excessively high interest rates on loans to compensate for the risk of default and to earn a profit. In some cases, creditors may resort to violence or intimidation to recover their money, particularly in situations where there is no legal recourse available or where the creditor has significant power or influence over the debtor. It can be a very sensitive topic and must be dealt with caution.

Usury can have negative consequences for borrowers, who may find themselves trapped in a cycle of debt with little hope of escaping. High interest rates can make it difficult for borrowers to repay their debts and can lead to financial hardship, loss of assets, and even social exclusion. Usury can also undermine economic development by discouraging people from using formal financial systems. In addition, the use of violence and intimidation to enforce repayment can contribute to social instability and insecurity.

In some countries, practices more extreme than usury may still be present, such as debt bondage and other forms resembling indentured servitude, in which individuals are required to work to repay a debt under conditions that substantially limit their ability to exit. In such contexts, it may be important to assess their prevalence and to examine their link with the indebtedness of the individuals involved.

3.1.6 Forms of ownership: full, partial informal, and common property

The notion of real asset – i.e., going beyond the claims and the obligations which make up the financial assets and liabilities - is inherently linked to the rights over tangible resources with an economic value.

Usually, the ownership of real assets assumes the form of property rights, which are defined as the most absolute form of ownership of goods. It means that ownership encompasses the full set of rights that can be defined over a good, as the right to use, to sell, to bequeath, to use as collateral, to make other use, free of any encumbrances or deficiencies.³²

However, there are cases in which different people (or economic entities) hold different rights on the same asset. From the economic point of view, all these cases can be included in the notion of wealth as well.

A common example is the separation of use rights from bare ownership. For instance, in a usufruct agreement, the owner of a property sells the bare ownership to another party while retaining the right to use the property for a certain period (often for the duration of their lifetime), thereby becoming the usufructuary.³³ The usufructuary can use the good (without altering its substance) and derive profit from that possession; if not stated differently, she can also transfer the right to others. The bare owner will acquire again the full ownership only at the end of the defined period of time (or at the death of the usufructuary). Although the usufructuary has only a temporary right on someone else's property, from the economic point of view the full value of the property is shared between the two contractors. The valuation of the two parts is usually obtained through an actuarial formula that combines interest rate and life expectancy information which defines the probability distribution of the bare owner of acquiring the full property over the future horizon.³⁴

A similar example of "split property" is provided by the "rule of 99 years" in England and Wales where purchasing a leasehold property means buying the right to live in and use the property for the duration of the lease only (typically 99 years). As the lease term decreases, also the value of the property tends to decrease. The value of the property can be obtained by computing the present discounted value of future benefits (or cash flows) from using the property, adjusted to today's value based on a discount rate, minus the present discounted value of all future lease payments.³⁵

Sometimes, especially in LMICs, the rights associated with ownership are not limited by private contracts but by law and social context. For example, in China, the property of urban land belongs to the State in a way similar to that described above for England; the property of rural land belongs to collective entities (i.e., groups of farmers). A farmer with a stable and undisputed right to privately use land for cultivation, and who can rely on this right over a long-term horizon (e.g., until death), holds a valuable asset. Analogously, in some contexts, land is held by the community, but households can use part of the asset exclusively. In such cases, the household owns a right of use, which usually extends to the future and that can be considered an asset. In fact, its economic conditions are better than those of a household that doesn't have that right, and the difference between the two can be

³² Although the full property remains the benchmark for any analysis, in practice the legal systems rarely ensure absolute control over the resources held. Limitations on the use of the assets held are often provided by laws and regulations, for example those regulations that limit the possibility of building a house over an owned land. Moreover, limitations to the owner's rights may arise from the interdependency of human actions. In the example provided by Alchian (1998), the owners of two neighboring plots of land cannot have at the same time the right to plant a new tree and the right to enjoy the panorama free from visual obstacles. The emergence of a controversial joint claim like this reveals the undefined nature of some rights, that a court or other authority may be called to solve *ex post*.

³³ In a rental contract, the renter pays for the right to use the asset as it is being used. In contrast, under a usufruct contract, both parties agree upfront on the transfer of the right to use the asset for an extended period. This distinction classifies the former as consumption behavior and the latter as an investment.

³⁴ In Italy, official tables are currently being published which show how the value of an asset can be divided between bare ownership and usufruct, according to the legal interest rate and mortality tables. In 2023, a 73-75 year old owner could sell the bare ownership of a house for about 65% of its full value. The value that remains in the hand of the usufructuary (35% of its full value) corresponds to the right to use that property until death.

³⁵ Another example of rights to someone else's property is the right of way that a landowner is obliged to grant to the holder of such a right. In other situations, assets obtained from donations or inheritances may entail - at the will of the donor - limitations in the use of the property, which may affect the value of the asset as well.

quantified considering the present value of the rents that the household that does not have that right would have to pay to use that land.³⁶ Sometimes the household who owns the use rights has not also the right to sell them. The possibility of assigning a value to such a condition may depend on the residual rights owned, like for example the right to rent the property or to leave the use rights to descendants.³⁷

The above examples show that even an incomplete set of rights has a value that can be considered wealth and – at least in theory – can be priced on the market. If the household interviewed has sold or granted for future years the use rights to someone else, without any future returns, the value of such a right must be subtracted from the full value of the property (or, in other words, the valuation of the property must take into account the missing use rights). If the interviewed household instead has the use rights (bought or received for free, it does not matter), the capital value of such rights should be considered as a form of license, together with other real assets.³⁸

Of course, there are contextual or institutional differences among countries that cannot be easily accounted for. There may be cases in which property rights are not fully secured due to conflict situations and/or de facto violations of formal rights. In countries where this phenomenon is widespread, the questionnaire should be adapted to gather information on the extent of loss of access and on other elements of uncertainty characterizing the owned assets. Moreover, the relationship between private and public property may vary greatly according to the country's political system or local norms. Although public goods can be considered indirectly owned by citizens, they do not grant exclusive use of the asset and are not included in the definition of household wealth. Similarly, assets indiscriminately shared by the community (e.g., pastureland) do not constitute private wealth. International comparison of the amount of wealth and its composition should consider the peculiar characteristics held by the public wealth in each country and the institutional differences that may affect the comparison. A good practice for the data producers is to complement survey microdata with a description of the institutional framework characterizing both the country and the local areas where respondents live.

Where the legal framework is sufficiently developed, the formal ownership of a wide class of assets is usually unequivocally stated in official documents or registers. This can be the case for real estate assets, cars, and other vehicles or bank deposits. In such cases, the law explicitly defines which individuals own the asset, which are the rights (and the fiscal or administrative duties) that are associated with the ownership, and the time span (usually indefinite) over which the property rights are recognized. For some other assets, like jewelry or durable goods, the legal ownership coincides with its possession, unless it is differently demonstrated.³⁹

³⁶ The SNA (2008) explicitly mentions the case of a property owner that allows “the resource to be used for an extended period of time in such a way that in effect the user controls the use of the resource during this time with little if any intervention from the legal owner”. This “leads to the creation of an asset for the user, distinct from the resource itself but where the value of the resource and the asset allowing use of it are linked.” (Part 5. Contracts, leases and licences”, section Q - Licences and permits to use a natural resource, p. 385).

³⁷ Cheng (2023), analyzing the phenomenon of Small Property Rights Housing, shows how incomplete property rights associated with informal housing in China lower the market price compared to analogous houses with complete property rights.

³⁸ In cases in which the use rights of a property are obtained at the cost of a payment lower than that present on the market (i.e. a subsidized rent), the present value of this difference could be considered part of the household wealth as well. In practice, this can be the case only when the actual rent paid is largely lower than the market value and when the contract extends for a considerable period of time.

³⁹ The fact that the formal owner is not necessarily the person who exerts effective control over the asset cannot be overlooked, although usually this represents an illegal practice (e.g., the Indian Benami Transactions Prohibition Act, 1988). It can be especially common within the family, which can adopt strategies aimed at limiting the tax burden. In such cases, for economic analysis, the de facto ownership needs to be known aside from the formal one. However, such information may be challenging to obtain from households who use such practices to engage in tax avoidance.

Due to historical and cultural reasons, informal ownership of land and other properties is widespread in many LMICs and can make the definition of the terms discussed above more complex. Formal legal frameworks in LMICs are usually relatively recent and often have failed to recognize the traditional land tenure system in place for centuries. Moreover, formal land registration may imply expensive and time-consuming activities that, for many people, are not balanced by tangible benefits. Thus, many households and communities in LMICs continue to rely on informal land ownership. Informal property may also affect the dwellings or at least the land on which the dwellings are built. In fact, the rapid urbanization that has characterized many LMICs has driven a large number of migrants toward urban areas, increasing pressure on land, informal settlements, and communities in the outskirts of major cities.

In the absence of formal registrations, the ownership and/or use rights of household properties need to be more carefully defined, capturing the different nuances it can assume in the specific analyzed country. Several questions can be included in the questionnaire to acquire information that helps identify who holds ownership or use rights, which are its rights, and how long she can reasonably exercise these rights. A questionnaire should verify whether the land or property is registered with the formal legal system, if the owners have legal documentation, such as a title deed that proves their ownership, if the land or property was acquired through customary or traditional practices rather than through the formal legal system, if they are held and managed by a community rather than by an individual. A further aspect that can be useful to define is the presence of conflicts or disputes over land use or ownership.⁴⁰

Given a certain degree of indeterminacy inherent in informal property, the collected information on the ownership can even be blurred; in particular, when information is asked at the individual level (see Section 3.2), incoherent answers across individuals of the same household should sometimes be interpreted more as a genuine echo of an ambiguous situation rather than as an inconsistency (measurement errors).

In the case of informal property, the rights usually associated with the ownership can have varying levels in the absence of definition. Informal property may contain several *de facto* combinations of the rights usually associated with property that are important for defining the level of control over the property. These questions help to identify whether the ownership right of land or property is full or not.

All the aspects mentioned above can make the evaluation process more complicated than in a fully legal property framework. Usually, survey questions on the value refer to the market value of the assets at the time of the interview. Asking what the respondent could get in selling the specific property owned requires that her condition - inclusive of the missing rights associated with the ownership - is sufficiently widespread in the community and that other sales of the type recently occurred in the same area. It is even more complicated for the respondent to provide an answer if the owner does not have the right to sell.⁴¹ However, as already said in Section 3.1.2, if a rental market exists, one can resort to the data collection of the “imputed rent”, i.e., the amount that the owner could obtain by leasing the asset, and then exploiting the approximate equivalence between the value of an asset and the discounted value of future rents, over the corresponding time horizon on which the

⁴⁰ The effect of informality on land price is discussed in Deininger and Ayalew Ali (2024).

⁴¹ According to Davies and Shorrocks (2005), “Valuing land is difficult in countries where there are government-imposed restrictions on buying or selling land, as in China, or where land rights are complex or communal, as in areas of Africa (see e.g., Delaine et al., 1992)”.

ownership is defined. Of course, in some informal environments, also the time span can be uncertain, and some further questions can help in defining more precisely this point.⁴²

In general, it is necessary to consider the general framework that characterizes the forms of the property in the country, acquiring the information that can help in their evaluation. Where property rights are limited by private contracts, as for example a contract of usufruct, information should be collected both from the households who have the rights to use and from the bare owners. For the former the value of their use rights is added to their wealth, net of the present discounted value of future payments; for the latter, the same amount must be subtracted from their wealth (see for example, D'Alessio et al., 2024). In particular, if the right to use is concerned, it is necessary to collect information on the imputed rent of the asset and on the time over which the right is defined. In the case of usufruct, the latter information can be derived from the gender and age of the use holders, which are crucial for an estimate of their life expectancy. This information, combined with a discount rate (where available, a legal discount rate is suggested) provides a reasonable estimate of their right.⁴³ Where the property rights are limited by law and the bare owner is the State, only the information from those exercising their use rights is needed.

3.1.7 Excluded items and alternative aggregations in sample surveys

As previously mentioned, pension wealth—defined as the present value of the income stream an individual is entitled to receive throughout their lifetime after retirement—is conceptually considered part of financial assets. When the pension flow is governed by a private contract, such as an insurance policy, it can typically be quantified quite easily. The terms regarding contributions and benefits are clearly defined, making it straightforward to assess the value of the pension wealth based on past payments. In contrast, public pensions present a different challenge. The future benefits from these programs are generally much less certain and are heavily influenced by the economic context in which they will be paid out. This uncertainty makes precise quantification difficult, particularly for younger generations who are asked to make forecasts for the distant future. Similar issues arise with occupational pensions.

As a result, it is common for wealth surveys to focus primarily on private retirement wealth only, overlooking the less tangible expectations associated with public pension income and occupational pension. More generally, the definition of wealth excludes contingent assets and liabilities, which are potential wealth items that may arise in the future depending on the occurrence or non-occurrence of specific events. The expectation of a pension based on future occupational status involves uncertain future events (e.g., the attainment of a minimum threshold of years of work or age). Although pension expectations can be interesting for understanding household economic behavior, they are conceptually similar to other expectations (e.g., inheritance) and fall outside the scope of wealth definitions. For this reason, the HFCS wealth aggregate excludes from financial assets the public and the occupational pension plans that are very difficult to estimate and includes only the amount of voluntary pension and whole life insurance. The LWS database defines a further aggregate, the Disposable Net Worth, which excludes all the forms of pension and life insurance wealth from the aggregate. However, this remains an open issue, mainly when comparing countries with completely different pension systems.

⁴² According to actuarial calculations, the present value of a flow of resources of a fixed amount over an infinite horizon can be approximated by a limited number of years. Adopting a 5% interest rate, the cumulative flow of 50 years of returns of an asset represents more than 90% of its value. The discounted value of the flows after 100 years and more is less than 1% of the total value of the asset. In other words, the value of a property defined over an infinite horizon does not differ too much from that of a property limited to the first 50-75 years; the property rights over a period far more than 100 years from now are almost negligible.

⁴³ D'Alessio et al. (2024) show how the full value of a property can be divided into the value of bare ownership and the value of a lifelong use right according to a table that takes into account the age of the use right holder (which implies a corresponding life expectancy) and an interest rate.

The literature (see for example World Bank, 2021) is currently debating the inclusion into the wealth aggregate of further elements, as for example human capital. However, this form of wealth differs markedly from the traditional ones both because before being available for consumption it must be earned by selling work on the market, and because it is incorporated into the single individual. Moreover, as also happens for some forms of pension wealth, its value is subject to wide margins of uncertainty, being dependent on numerous factors beyond the control of individuals (job opportunities, luck, health conditions, etc.). For these reasons, it is generally not included in standard survey definitions of wealth.

Other items are often recalled in connection with wealth. Some authors (e.g., Fessler and Schurz, 2018) have observed that the degree of welfare state spending across countries is negatively correlated with household wealth because social services provided by the state are substitutes for private wealth accumulation. For example, if households can rely on stable and efficient public health care, are also less exposed to the corresponding shocks and do not need to own resources for this kind of emergency (e.g., see Rapp and Humer, 2023). Even though these aspects are important to vulnerability, the quantitative estimation is complex, and they will not be considered further in this text. Nonetheless, a more precise comparison across countries with substantial different economic regimes should take into account these aspects (e.g., Christelis et al., 2013).

In more informal social contexts that usually characterize LMICs, the local community may also provide services and assistance in case of emergency, playing a role similar to that of the State and of wealth, when coping with the effects of unexpected shocks. The data collection of such conditions, even when concerning the hypothetical use of these potential benefits, can be very useful in understanding how wealth distribution relates to household needs (see Section 4.5).

As to the aggregation of the wealth items, to build an indicator that measures the resources invested in household business—defined as one where at least one member is self-employed or actively involved in management—it is essential to group all related assets and gather pertinent information. Non-residential properties connected to the household business (e.g., a plot of land, an office, or a shop) can be added to the value of machinery, equipment, and inventories while being subtracted from the corresponding property aggregate, provided that information on the use of the asset is collected. This also applies to livestock, debts, and certain durables that may be owned for either business or personal consumption. Grouping “self-employment” business assets is also suggested by LWS and some European surveys within the HFCS. Given its relevance, the suggested modules collect the necessary information to support this classification.

3.2 Household and individual wealth

The analysis of wealth distribution is usually conducted at the household level, considering attributes such as region and area of residence, type of household and number of members, household income, consumption, or wealth bracket or quintile. Usually, wealth data are also analyzed according to some individual characteristics of the member able to represent the socioeconomic status of the household. In some cases, the “reference person” is defined as the most knowledgeable member (identified before the interview), in some other cases it is defined according to some objective rule (e.g., the adult with the highest income). This makes it possible to analyze wealth by age, professional status, or education according to the reference person characteristics, under the implicit assumption that the reference person is able to represent the whole household.

When the ownership of an asset is shared among different individuals or households it is important to acquire information on the share of the property of the assets belonging to the specific individual/household we are interviewing; the value of its property will be estimated by dividing to total value among the owners, according to the corresponding shares of property. When this

information is not collected, one can only resort to per-capita household wealth (i.e., household wealth divided by household size), or some form of equivalized wealth.⁴⁴

However, the assumption of equal intra-household distribution has proven to be a poor approximation of actual conditions in many cases. According to Deere and Doss (2006a), the unequal intra-household distribution of wealth is a primary topic in LMICs, where women face culturally and socially disadvantageous factors as well as less egalitarian laws than those of other countries, particularly as regards inheritances, separations, and divorces, and access to education and professions. Large gaps are found in developed countries as well (Deere and Doss, 2006b, Sierminska and Girshina, 2017; D'Alessio, 2018). Moreover, the intra-household distribution of wealth can be important from several points of view; many studies have shown that the ownership of resources implies an imbalance in the relationships between household members and produces effects in terms of its members' behavior that can be measured (Thomas 1999, Beegle et al., 2001, Duflo 2003). Individual ownership of some assets can be seen as an empowerment indicator: e.g., the SDG indicator 5.b.1 suggests measuring the "Proportion of individuals who own a mobile telephone, by sex" (United Nations, 2016).

The collection of data on individual ownership and values should encompass all components of wealth, including real assets, financial assets, and financial liabilities.

For financial and cultural reasons, in LMICs it is somewhat common for households to consist of multiple generations of family members or extended family members, such as grandparents, uncles, aunts, and cousins. The prevalence of households made up of many generations can create problems in data collection of wealth items, as it increases the probability of unequal distribution of assets and liabilities within the household, and the need for individual data. Moreover, it reduces the probability for proxy respondents (i.e., the most knowledgeable person) to accurately know and provide the information required in the questionnaire related to other family members, thus introducing measurement errors. In part for these reasons, Hasanbasri et al. (2021) recommend acquiring data on wealth through independent, individual interviews.

Recent studies have emphasized the need to collect individual data on asset ownership, to highlight the intra-household wealth distribution and, in particular, the gender gaps. According to these researchers (Kilic and Moylan, 2016; Doss, et al., 2020; Hasanbasri et al., 2022; Joshi et al., 2022), it is important to investigate both the rights that individuals have over the properties, as the right to transfer (e.g., sell or bequest), to manage (e.g., to plant, to build) or to access, and who makes decisions regarding property. The overlap between ownership and actual management is not necessarily full (47% in Malawi, 84% in Niger) and a more precise acquisition of such information can shed light on the welfare and bargaining power of each member of the household.

⁴⁴ While the most common choice is the analysis of the household wealth indicator, the literature is not unanimous as to the necessity and the way in which equivalized wealth should be computed. Equivalized income or consumption are standard indicators used to account for the economies of scale arising from a certain number of persons, with some characteristics, who live together. Wealth constitutes a form of potential consumption available in the future to the owners, but it is not clear if and when it will be used by them. A part could be used for consumption by the present members of the household, a part could play its role as a protection net for future household contingencies or foreseeable health needs of the adult members (and thus used just in case), the remaining part could be left to future generations in the form of inheritance or donations. Although it is possible that the household has some idea, at least in broad terms, of the possible future uses of the wealth they possess, it is not possible to define precisely how wealth will be used in the future and by whom it will be used. According to OECD (2013a), the use of equivalence scales for wealth depends on the purpose of the analysis. Research analyzing income (or consumption) and wealth at the same time could use for wealth the same equivalence scale adopted for income (or consumption). It is also observed that "failure to equalize could provide a misleading picture of the distribution of wealth, for example by overstating the share of single-person households at the bottom of the distribution" (p. 169).

Moreover, the property rights concerning ownership, control, and use can be held exclusively or jointly, and in the latter case in equal shares or not, all aspects that can deserve special attention when the object of the analysis focuses on the intra-household distribution.

Some research has also demonstrated that the data collection strategy resorting to the proxy respondent (i.e., the most knowledgeable individual) provides unsatisfactory results in terms of bias and precision of the individual wealth owned (Kilic et al., 2020; Doss et al., 2023). Although a share of incongruences between the answers provided by the members of the same household can be attributed to respondent fatigue or other behaviors connected with the interview (i.e., the lack of interest in listing additional assets), also emerged a significant role of asymmetric information about assets, which also includes the case of hidden assets, i. e., assets of which one of the partners or other members are totally unaware. Collecting data at the individual level may also give rise to a risk of double counting, which should be carefully addressed both in the questionnaire design and during the data cleaning phase.

An interesting approach in the analysis of gender gap and intra-household distribution of resources in LMICs where the above phenomena are important is data collection through individual interviews, in order to avoid contamination of the answers provided by the interviewees. This strategy provides the individual point of view, that can be of great interest in intra-household analysis as it allows a more accurate analysis of the vulnerabilities hidden within the households.

On the other hand, asking each member for information about her can introduce some fatigue and complications for the respondents, with some possible drawbacks in terms of data quality (Ambler et al., 2021). Also, the organization of the field and the cost of the survey can be affected by this strategy, for example requiring the presence of more interviewers at the same time. Moreover, the comparison of the different views of family members on the same properties can reveal inconsistencies, that require further treatment.

A compromise between these two needs is often required, with the adoption of fieldwork protocols maximizing the rate of self-reporting among adults that provide personal information, at least for all the aspects that can more likely involve misreporting by the proxies, trying to adopt, at the same time, strategies able to reassure and involve the interviewees (Carletto et al., 2022a).

The analysis of intra-household wealth distribution in LMICs may require special tools, both in terms of questions to be asked, that go beyond the mere observation of the legal owner and for the data collection strategy.⁴⁵

3.3 *Wealth dynamics*

In many economic analyses on wealth, the focus is not on its composition or its distribution among the population but rather on the dynamics (e.g., is household wealth growing or not?) and on the factors explaining these changes, which in turn can help in understanding why some are rich, and others are poor. Therefore, it assumes primary importance to understand how wealth changes over time and what are the tools offered by statistics that can favor this type of analysis.

In National Accounts, changes in wealth are recorded in the Accumulation Accounts, an ordered set of flow accounts describing “the various causes of changes in the assets and liabilities of

⁴⁵ At the household level, imputed income and consumption from capital are usually linked to property ownership. For example, the house of residence produces an (imputed) income that is consumed by the household itself. Within the household, this association can be less defined, due to the informal use that some members of the household can do of properties belonging to other members. A possible way of formalizing these flows is considering the capital income accruing to the owners only and then – in case other members use the asset - an implicit current transfer from the owner to the other members financing their consumption. Under this scheme, any asymmetry in the ownership among household members is transferred to income but not necessarily or entirely to consumption. The computation of individual consumption of the service provided by assets would require further data on their actual use.

units and the change in their net worth (ESA2010 §8.44)”. NA identify four basic sources of variations in the wealth of households from the end of the period t-1 to the end of the period t, ΔW_t : savings, S_t ; capital transfers, T_t ; capital gains, CG_t ; and other volume variations VV_t :

$$\Delta W_t = S_t + T_t + CG_t + VV_t$$

Savings are traditionally the main component of this equation and represent the residual part of national disposable income which is not used for final consumption expenditure; it is the final balancing item in the *current accounts* that records the production of income and its use for final consumption. Savings are used to increase wealth by purchasing fixed or financial assets or to extinguish liabilities. When consumption exceeds income, savings are negative (in such a case, sometimes the term dissaving is used). Dissaving will cause the liquidation of assets or the increase in liabilities that compose wealth.

The definition of savings strongly depends on the definition of income. In NA, income is defined as “the maximum amount that a household or other unit can afford to spend on consumption goods or services during the accounting period without having to finance its expenditure by reducing its cash, by disposing of other financial or non-financial assets or by increasing its liabilities (SNA 2008, §8.25)”.

In the micro framework, savings have a meaning comparable to that described in NA, although referred to the household only. This indicator is rarely computed through survey data, as its measure would require both income and consumption data in the same survey. Consequently, the analysis of factors impacting wealth dynamics often focuses on the remaining items.

NA define Transfers as transactions in which one institutional unit provides a good, service, or asset to another unit without receiving from the latter any good, service, or asset in return as a direct counterpart (SNA 2008, §8.10). The capital transfers, mostly identified as large and irregular transfers, involve wealth variations such as inheritances or substantial gifts or grants; current transfers (i.e., the pensions or the alimony to the ex-spouse) are part of income and are destined for either consumption or savings during the accounting period.

Applying the macro definition of transfers to households involves a significant change in the observed perspective. In fact, while at the macro level, we refer to cross-border capital transfers, which represent a quite residual share of the total wealth change, at the micro level, they assume the form of inheritances and inter-vivos donations, whose occurrences are not so frequent on a yearly basis but are very important in terms of amount in a lifetime perspective.

Capital gains and losses are the changes in wealth due to variations in the prices of assets or liabilities. Nominal capital gains can be divided into neutral capital gains, for the part due to the variation of the general price level, that allows for recovery purchasing power, and real capital gains, reflecting changes in the relative prices of assets, for the residual part.

Variation of net worth is also attributable to “other wealth variations due to volume variations” which are all the changes in the volume of assets and liabilities not due to transactions. These variations are the effect of catastrophic losses, uncompensated seizures, and other changes of volume in assets and liabilities that cannot be otherwise classified. At the micro level, the household composition changes may cause substantial variation in household wealth and must be accurately taken into account when analyzing wealth variations over time (usually by using panel data).

In sum, many factors play a role in wealth dynamics, highlighting the complexity of a full reconstruction of the household wealth variations over time, even when accurate panel surveys are conducted (see Section 5.5).

4. Survey items for measuring household wealth

4.1 Wealth items in existing household surveys

Income and consumption surveys are widely conducted around the world and, although they are not specifically designed to capture the full set of information needed to estimate wealth, they generally collect some of it, as well as other data that touches on similar issues. We conducted an extensive review of the wealth, income, and consumption surveys that provided an overview of what is already being collected around the world. The objective of this review is twofold, on the one hand, it allows us to evaluate systematically the wealth data gap in existing income and consumption surveys; on the other hand, it provides a starting point to design solutions for collecting wealth data based on what countries are already implementing (more detailed results are provided in Appendix A).

In this review, we have analyzed the questionnaires of 149 countries⁴⁶ covering 95% of the world population across all regions and all income groups, making sure that virtually all the low- and lower-middle income countries were included as well as all the high- and upper-middle income countries with the largest populations, whenever possible.⁴⁷

As a first step, we assessed for each country whether they collected wealth surveys, and if not, we identified any income and/or consumption survey that could potentially collect some of the data needed for wealth estimation.

Then, we identified 10 categories of assets and liabilities, namely principal dwelling, other dwellings, land, livestock, business assets, durables, bank account, other financial assets, mortgage or other debts on the principal dwelling, and other debts. For these categories, we assessed whether the identified surveys collected ownership and value information, as well as further information, such as whether the ownership is at the individual or household level. In some cases, we found that ownership was not directly captured with a dedicated question, but it could be deduced from other questions. For instance, the interest received in the past 12 months from financial assets signals the likely ownership at the moment of interview of some financial asset; similar cases apply for rents received and properties held.

Figure 4.1 shows that most surveys already collect the direct or indirect ownership of a high number of categories of assets and liabilities: 129 out of 149 surveys (87%) capture 6 or more categories. Although surveys in LMICs largely focus on income and consumption items, a significant amount of information on the ownership of many categories is also collected.

The same cannot be said for the collection of values, as only 46 (31%) collect this information for at least 6 categories; more than 20 surveys do not collect information about any value. The rate of collection of values shows the biggest gap between HIC surveys, which are almost always designed to capture wealth, and LMIC surveys, which are not wealth-specific and usually don't collect monetary values.

Figure 4.2 shows that the categories most frequently collected are estate properties (dwellings, land) and durables; other dwellings, financial assets, and liabilities are often collected through indirect questions only. Although livestock is consistently collected in LMICs, the overall result is lowered

⁴⁶ Over 85% of surveys we selected were carried out in the last 10 years, and 95% in the last 15. Only four surveys were conducted more than 15 years ago. For more details on the selection criteria and the results of the review see Appendix A.

⁴⁷ We used the World Bank country classifications by income level for FY23 (available at: <https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html>) and downloaded in May 2023.

by its absence in the surveys of HICs; in some cases, its value is implicitly included in business agricultural assets.

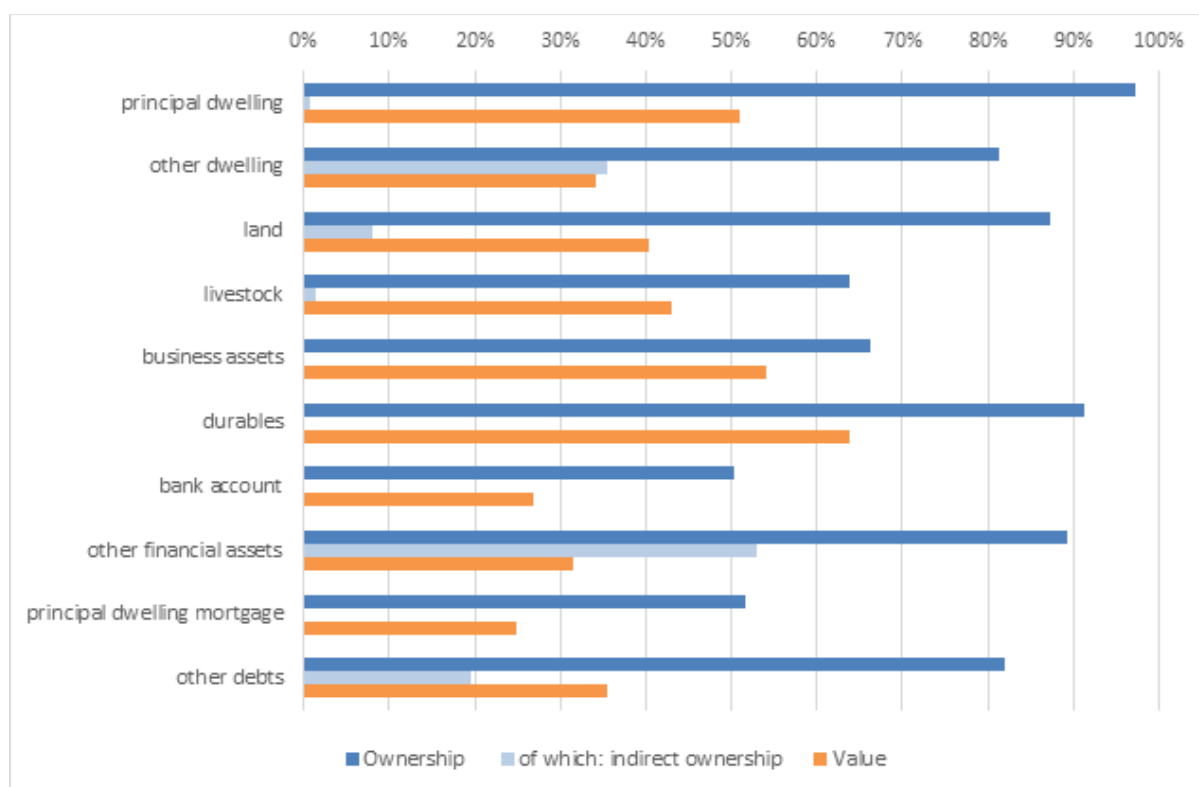
Overall, this review suggests that to collect wealth data properly and to increase the quality of estimates and their international comparability in existing surveys that are not explicitly designed to do so, three actions are needed: 1) expand the list of assets and liabilities owned through direct ownership questions, especially for financial assets and debts; 2) integrate systematically the collection of values of the assets and liabilities held. In many of the surveys reviewed, these integrations would entail a limited number of supplementary questions; 3) check that the definitions of assets and liabilities are coherent with the ones proposed in the present Guidelines (Table 3.1 and Section 3.1).

In some cases, a tentative estimate of a wealth aggregate can already be performed, as discussed in the next section.

Figure 4.1 - Distribution of surveys by number of asset/liability categories collected



Figure 4.2 - Percentage of surveys collecting ownership and value, by asset/liability category



4.2 Examples of wealth data collection in existing surveys in LMICs

To assess the possibility of deriving reliable household wealth estimates in existing surveys in LMICs and measure the gap from a standard definition of wealth, we have conducted an in-depth evaluation of a selection of six survey questionnaires. We considered some surveys that, according to our first screening, have different levels of detail in the collection of wealth data and are conducted in countries located in various parts of the world and characterized by different contexts. ⁴⁸

India

The first survey we looked at was the 2019 All-India Debt and Investment Survey (AIDIS). This survey collects detailed information on the value of properties, in the form of residential buildings used as dwelling (by household members), rural and urban land (by plot), residential and non-residential buildings within and outside the village/town (not by property), value for properties under construction, and other constructions. Business assets are collected in detail and include farm business buildings, agricultural machinery and implements owned (by item), non-farm business (building used for non-farm business, equipment) (by item). Livestock and poultry are collected in a specific module. The list of durables is limited to the transport equipment owned while the valuables include the value of bullion and ornaments (jewelry, gems and precious stones, paintings, and artistic originals).

As to the financial side, information is collected on the value of cash in hand, the amount in the current bank account, other deposits or financial savings and life insurance. Loans refer to

⁴⁸ Two of them (India and China) are surveys specifically designed to collect wealth data. The others are focused on income or consumption and collect some wealth items but can be potentially expanded to collect the full set.

institutional and non-institutional agencies (by loan) and include business loans, mortgages, and other debts. The outstanding amount of "in-kind loans" from input suppliers, relatives and friends, professionals, and others (by loan) is also collected.

In summary, the AIDIS collects detailed information on real and financial wealth items; moreover, it covers many aspects that characterize its socio-economic context, like the role of informal credit and debt or that of cash savings and valuables. From this point of view, this survey can be considered as a benchmark for household-level data collection. Although there are some questions related to gender gap, all the wealth items are collected at the household level.

China

The China Family Panel Study collects the ownership and value of the home of residence and the value of other dwellings (taken all together). The questions on land reflect the specific context of the country and concern whether the family has access to any collectively distributed land, without collecting any reference to a value. Business assets are collected in the form of agricultural farm machinery and total assets of individually operated businesses or private enterprises. The value of consumer durables and valuables are captured in a single question which includes automobiles, computers, jewelry, and so on. Income from livestock is collected but not the value of owned animals.

As to financial assets, the survey collects information on the ownership and value of 3 categories: cash and bank deposits; fixed-term deposits; and a large category including stocks, funds, government bonds, trust products, foreign exchange products, and other financial products. The values are collected using the "unfolding brackets" procedure proposed by Juster et al. (1999), which takes into account the sensitivity of the question.

The questionnaire also covers mortgages, bank loans, and other loans (including non-bank loans), as well as credits with other families or institutions.

Overall, the survey collects information on all categories except for livestock and land (due to the particular tenure system of China)⁴⁹; and its approach favors aggregate questions on related assets.

Uganda

We have then checked the possibility of building the wealth aggregate using the data from the National Panel Survey 2019-2020 conducted by the Uganda Bureau of Statistics contained in the Microdata Library of the World Bank. The survey, which is part of the Living Standards Measurement Study - Integrated Surveys on Agriculture (LSMS-ISA), sampled around 3,000 nationally representative panel households.

The questionnaire includes a highly detailed module collecting information on the assets held. In this module, the estimated value of the home owned is collected at the individual level (up to 2 codes) as well as that of all the other buildings. For the latter, however, only the total value of all the other buildings is collected. The value of agricultural land is collected parcel by parcel, and at the individual level too, while that of non-agricultural land is collected at the aggregate level, and for the household only. Thus, the property values can be reasonably estimated, although for a couple of items (other buildings and non-agricultural land) a more detailed data collection (asset by asset) would provide better quality estimates. As to the business assets, only the value of farm implements and machinery are collected, while non-agricultural business assets are missing. The number (and much other information) of each type of livestock owned is collected but not current values. At the moment, only some imputations of these values based on the prices of the livestock bought or sold over the

⁴⁹ In China there is no private property of land.

last 12 months are possible; a direct question on the value of each type of livestock held at the moment of interview or some indirect method of evaluation could be alternatively tested.

The value of consumer durables is collected through a long list of items that are valued one by one, and some of them at the individual level. A single question, instead, is devoted to valuables and is related to the total value of jewelry and watches.

The situation appears incomplete with reference to financial assets and liabilities. In fact, the questionnaire collects information only on the income earned from financial assets in the past 12 months (considering current accounts and shares), without any reference to the amount owned at the time of the interview. As to liabilities, the questionnaire collects information solely on the ownership of loans, mortgages, and other debts, but not on the outstanding amount.⁵⁰

All in all, in the Uganda survey most of the real assets are already captured by the questionnaire and some limited changes could provide a good quality estimate of this component. However, to allow an estimate of the wealth aggregate in a comparable definition, information on the stock of financial assets and liabilities held should be included.⁵¹

Tanzania

Further analysis has concerned the Tanzania National Panel Survey 2020/2021, conducted on a sample of 4,709 panel households.

The questionnaire contains a section for real assets, among which one can find houses, farm business assets, livestock, vehicles, and other durables. As the module does not separate the value for the house of residence from that of other properties, the separation between the two components can only be roughly estimated based on the corresponding rents (imputed rents for the first component, actual rents for the second). The value of farmland is collected in a specific module of the questionnaire, plot by plot. No specific information is collected on valuables while the list of durables is quite long. The data collection of business assets is completed through various questions included in the section on non-farm enterprises.

As to financial assets, the ownership of bank deposits is collected in a section dedicated to finance; however, it does not include a question on the amount held. In a different section, the questionnaire collects information on the presence of savings in the form of contributions to a savings group and the amount held. As to debts, the questionnaire collects information on the ownership and value only with regard to those borrowed by the household in the last 12 months. This does not allow an estimate of the stock of the debts held by the household.

In summary, the real assets are already captured by the Tanzania NPS questionnaire and some limited changes could allow a reasonable estimate of this component. Instead, some more important integration is needed for financial assets and liabilities.⁵²

Pakistan

The Pakistan Social and Living Standards Measurement Survey 2019-20 collects the total value of a list of real assets in a specific asset module, namely residential buildings, non-residential buildings, agricultural land, livestock (by type), non-agriculture land, and other property. For each of these categories, the total value is collected at the household level. No further information is collected

⁵⁰ Information is collected on the interests paid over the past 12 months.

⁵¹ According to a very preliminary estimate, the interaction between consumption and wealth in Uganda is not trivial; one-fifth of the households considered poor according to the consumption indicator, has wealth, adjusted by the equivalence scale and prices, higher than the poverty line for a period of 3 years.

⁵² In the previous 2019-2020 extended panel on sex-disaggregated data, a special module on financial assets was included in the questionnaire.

for business assets, such as agricultural machinery or non-agricultural business equipment. The ownership of durables (including vehicles) is collected, however no value is asked. No information is collected on valuables and any type of financial assets or liabilities.

As the surveys described above, this survey covers a high number of real assets that contribute to household wealth. Some integrations, mainly concerning the ownership and value of financial assets and liabilities, would allow the capture of the full set of wealth items.

Paraguay

The Encuesta Permanente de Hogares Continua 2017 in Paraguay is very detailed on the collection of the characteristics of the ownership of the residence since it collects both the ownership of the house and that of the land where it is built, while the estimated value is collected for the house. The possession of agricultural land and agricultural machinery, equipment, and implements is captured without the asset value. The ownership of some of the other properties can be deduced by the question on the rents received. Information on the ownership of livestock is collected without its current value; however, the questionnaire asks for information on livestock bought or sold in the last 90 days.

The ownership of a list of durables is collected without values. Indirect information on financial assets is collected (i.e., interests, dividends) while some information on liabilities is collected in the form of the existence of a principal dwelling mortgage.

To be able to estimate the household wealth this survey should be expanded to include the values of many items. On the financial side, also integration regarding the ownership would be needed.

General considerations

Overall, the comparative analysis among the six surveys conducted in this section shows a large heterogeneity in the data collection of wealth items.

The surveys of India and China cover virtually all the wealth items and capture both ownership and value; however, they adopt two different strategies in the way they collect such information. The Indian survey is more detailed and collects quite disaggregated data both in real assets sections and in the financial section (including private and occupational pension assets), while the Chinese survey tends to ask for larger aggregate values.

In the other four observed surveys, financial assets and liabilities are often omitted, both in terms of ownership and value. Real asset ownership is more commonly collected, although their valuation is rarely required.

The category showing the highest variability in terms of the collected items is that of business assets. It probably suffers from the lack of consistent definition and from being related to different dimensions scattered throughout the surveys. For instance, buildings used for business could be collected in the real estate section, machinery of non-agricultural business might be found in the self-employment section, and agricultural machinery is typically collected in the agricultural section; all three are sometimes collected in the section on durables.

The heterogeneity across the surveys is also evident in the structure of the questionnaires and the phrasing of the questions. On the one hand, this reflects the different emphases of the surveys analyzed; on the other hand, it results from a lack of standardization, which creates significant challenges for conducting comparable analyses.

In some cases, we have found an asset module that covered in a standardized way many assets held by the household. In other cases, we have found recurrent questions spread across the questionnaire.

Some surveys make use of rosters to list all the assets of the same kind and then collect information for every element in the roster, while some others capture aggregate values for all the elements belonging to the same category. For most assets, the first approach is generally recommended, both for its greater accuracy and for the ability to consider additional characteristics defined at the asset level, which can enrich the analysis or facilitate quality control of the responses.

We have also found heterogeneity in the data collection of information related to the intra-household allocation of wealth items. In recent years this topic has gained relevance and individual ownership has been used for the gender gap analysis. In countries where property rights are less formally defined, some surveys have adopted the EDGE methodology which allows the capture of informal ownership rights.

4.3 Minimum set of data items for the collection of household wealth in LMICs

In previous paragraphs we have shown the heterogeneity of approaches and of structures of different surveys around the world, and, when it comes to adapting existing non-wealth-specific surveys to the collection of the full set of wealth items, there is no single solution that is universally valid. Thus, we propose here a flexible solution in the form of a minimum set of data items for the collection of household wealth in LMICs that can be integrated into surveys following their existing structure.

Although wealth data can vary in detail and comprehensiveness, it should aim to meet specific analytical needs. The proposal outlined here is designed to cover at least the minimum core wealth information required for a range of analyses, particularly those relevant to LMICs.

The starting point of this minimum set of data collection items has been the list of items presented in Table 3.1, which has been adapted based on the modalities we have observed in the surveys that we have analyzed in paragraphs 4.1 and 4.2. By disaggregating the items that are most commonly collected on their own, e.g., principal dwelling, and aggregating others that are often collected together, e.g., valuables and durables, or financial assets (collapsing all the financial assets different from cash and deposits into a single item), the final list of the minimum set of data items includes 8 macro categories of assets and 7 of liabilities, as shown in Table 4.1. These are categories of items that should be collected for purposes of estimating household wealth, and they encompass a wide range of assets that can be customized according to the country context. In this case, wealth is evaluated at the household level only.

Table 4.1 - The minimum set of data collection items for household wealth

	Assets and liabilities	Ownership and value of asset	Ownership and outstanding amount of debts	Business use
Real assets and associated liabilities	• Principal dwelling.....	✓	✓	-
	• Other dwellings and non-residential buildings.....	✓	✓	✓
	• Land (agricultural and non-agricultural).....	✓	✓	✓
	• Machinery, equipment and inventories.....	✓	✓	-
	• Livestock.....	✓	✓	✓
	• Consumer durables, valuables and other real assets.....	✓	✓	✓
Financial assets and liabilities	• Cash and deposits.....	✓	-	-
	• Government securities and other public or private bonds, shares, investment funds, and other financial assets,.....	✓	-	-
	• Other debts.....	-	✓	-

Six categories of real assets are proposed along with their associated liabilities, two financial asset categories, and a category to collect other debts not associated with any real asset.

In addition to ownership and value of both assets and liabilities, for (1) principal dwelling, (2) other dwellings and non-residential buildings, (3) land, (4) machinery, equipment, and inventories, (5) livestock, and (6) valuables and durables, we recommend also collecting a question on whether they are used for business or not. This is necessary for allowing the disaggregation of wealth into business and non-business wealth, where business wealth can be obtained by aggregating machinery, equipment, and inventories with other dwellings and non-residential buildings used for business, land used for business, livestock used for business, durables and valuables used for business.⁵³

In the module (Appendix B1) we propose to collect the main household assets and liabilities in a disaggregated form. Disaggregated data (i.e., building by building, plot by plot, debt by debt) usually allows more accurate estimates of the aggregates; moreover, this approach allows the data collection of various characteristics (i.e., the size of dwellings, the interest rate of the debts) that can be important both for imputing values where self-reports are missing and for further classifications and analyses. Therefore, it is highly suggested to collect the value of properties owned one by one (together with other information if needed) rather than the sum of the values. Often the increase of the respondent burden is limited because a household usually owns a few assets only, and asking for the sum requires the retrieving of all the single values and their sum, compared to the gains of obtaining more detailed information.

This approach implies making use of filter questions (i.e., "Does your household own any dwelling?"), and building rosters (e.g., "Please list all the dwellings that your household owns") to which small modules are linked.⁵⁴

However, the module operates some exceptions to this general rule when two or more assets are bundled together and cannot be easily valued separately. In such cases, the total value is asked when talking about the primary asset. For example, when collecting data about the main residence, the value asked the respondent should also include that of the land below and around it, with the plants and garage, box, attics, or warehouse directly connected with the dwelling. Analogously, when

⁵³ The classification of business items can sometimes be blurred, such as in the case of a taxi driver who uses their car for both work and family purposes, or a self-employed professional who works from their home office. From the perspective of total wealth measurement, it is crucial to avoid double counting during data collection. To achieve this, it is sufficient to make both interviewers and respondents aware not to count the same asset twice. However, while the analysis of business assets is the focus, a clearer understanding of these mixed uses of assets can be beneficial, and it may be necessary to flag such cases.

⁵⁴ It is advisable to associate each record in the list, in addition to the code of the household to which it refers, also with a unique identification code, to be used in the case of repeated surveys over time or for linking with external information.

talking about plots of land, the respondent is asked to include the value of the plants or rural buildings directly connected to the land.⁵⁵

This approach is adopted under the hypothesis that it would be too complicated for the respondents to provide separate values for the single connected items. It implies a reduced possibility of classifying separately the items (e.g., land and buildings), but the total value of household wealth is not affected, as far as the instructions provided to the respondents are clear and the enumerators are warned in avoiding double counting. Of course, more scrupulous and detailed data collection can be organized whenever deemed feasible.

The questions in the module refer to the values of assets and liabilities at the time of the interview, which makes the data collection easier, reducing the demands on the respondent's memory.

4.4 Extended set of data items for the collection of household wealth in LMICs

Keeping the broad asset and liability categories of data collection items set out above, we suggest in Table 4.2 a list of items for an extended set, where other characteristics of the assets are collected alongside the minimum set.

The extended module collects information useful for quantifying the value of the long-term use rights on land and other properties. Information on this issue can be provided both by those who have the right of use so that a value can be added to their wealth, and from the bare owners, that subtract the value of the use right from their wealth. In the first case, information is collected on the use rights of the interviewed household, using wider filter questions than those usually defined for the property (“Does your household own or hold use rights ...” rather than “Does your household own ...”). In the case of use rights granted to others, instead, information on the use rights holders should be collected to estimate the value to be subtracted from the full value of the property.

Documented ownership could be asked for estate properties and business assets whenever relevant; in case no documentation is present for estate properties, informal ownership rights (i.e., the right to sell and to bequeath) help capture the de facto ownership in contexts where documentation is not widespread. Information on tenure security is collected for dwellings and plots of land through a question asking about the perception of an involuntary loss of ownership or use rights in the next 5 years.

Whether the ownership is exclusive, or joint can also be collected for most real assets, and individual ownership questions can be added for all the assets and liabilities and are crucial for intra-household analyses as well as for gender disaggregation.

In this module we do not collect information on the owners of debts connected to real assets under the hypothesis that these debts are owned by the same individuals and in the same proportions as their ownership of the assets (D’Alessio, 2018), thereby requiring individual information only for debts unrelated to real assets. A more scrupulous data collection approach might involve independently inquiring about the ownership of debts, separate from the associated assets.

Finally, other information regarding the mode of acquisition of all real assets can be collected if relevant, whether it was purchased, inherited, received as brideprice or dowry, and so on, for analytical purposes (see Section 3.3).

⁵⁵ According to the United Nations (2019, p. 27), in contexts in which the dwellings and the land below can be owned separately, “provision needs to be made for a separate measurement”. The problem, however, may lie in the respondent's ability to provide accurate answers regarding the value of the two components.

Table 4.2 - An extended set of data collection items for household wealth

Assets and liabilities		Ownership and value of asset	Use rights values	Ownership and outstanding amount of debts	Business use	Documented ownership and tenure security	Informal ownership rights	Shared ownership	Individual ownership	Origin (purchase, inheritance, dowry...)
Real assets and associated liabilities	• Principal dwelling	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Other dwellings and non-residential buildings	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Land (agricultural and non-agricultural)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Machinery, equipment and inventories	✓	...	✓	...	✓	...	✓	✓	✓
	• Livestock	✓	...	✓	✓	...	...	✓	✓	...
	• Consumer durables, valuables and other real assets	✓	...	✓	✓	...	...	...	✓	✓
Financial assets and liabilities	• Cash and deposits	✓	...	...	...	...	...	...	✓	...
	• Government securities and other public or private bonds	✓	...	...	...	...	...	...	✓	...
	• Shares, investment funds, and other financial assets	✓	...	...	...	...	...	...	✓	...
	• Other debts	...	...	✓	...	...	...	...	✓	...

4.5 Further questions on wealth-related topics

A survey on the economic conditions of households is greatly beneficial if, together with the main indicators (income, consumption, wealth), information is also collected on other connected aspects. This information enriches the picture of the information gathered on the households, fueling economic research and contributing to determining the shape of policy measures. In the following, a brief discussion of these indicators is provided.

Context and institutional factors

The wealth held by households is closely linked to the broader context and institutional environment governing property framework. The presence and the structure of public pension systems or public services (e.g., housing, health care, education), as well as access to common property, significantly influence the need for private wealth. In some cases, these factors vary at the subnational level.

Additionally, informal networks providing reciprocal support can play a similar role. For example, in many LMICs, it is common for communities to support families during difficult times, such as after a death or job loss, thereby reducing reliance on precautionary savings and the need to access formal credit markets.

It is recommended to investigate these contextual factors before data collection and make them accessible to data users. Relevant data items (e.g., the expected pension entitlements, access to common properties, public services, or informal support networks) should also be incorporated into the questionnaire. This will enable a deeper understanding of wealth estimates and improve international comparability.

Financial inclusion

Financial inclusion is an important component of well-being (Demirguc-Kunt et al., 2022). Access to financial services and products, such as transaction accounts, payments, savings, credit, and insurance, provides a significant impact on people's lives, facilitating day-to-day living, helping households and businesses to plan long-term goals, and reducing the possibility of crisis in facing unexpected emergencies. It has been identified as an enabler for 7 of the 17 Sustainable Development Goals and a key to reducing extreme poverty and boosting shared prosperity. The SDG indicator 8.10.2 specifically suggests measuring the "Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money service provider"(United Nations, 2016).

Furthermore, it is important to collect data on both the potential access to financial services (e.g., asking if there is a bank or other credit providers, an ATM, or a mobile money agent accessible within a convenient distance) and their effective ownership and use (e.g., bank accounts, and digital payment systems). Moreover, for those who do not use these services, it is important to understand any perceived barriers — whether legal, cultural, or practical. Given the growing importance of smartphone-based financial services in some LMICs, it would also be helpful to understand attitudes toward using technology for financial transactions.

The World Bank sustains various initiatives to promote financial inclusion. In 2011, and every 3-4 years since then, it has conducted a worldwide survey to create the Findex Database, in which comparable estimates of several indicators of financial inclusion are provided. The material of this survey can be taken as a reference point whenever this kind of information is needed in surveys, together with other information.⁵⁶

Financial literacy: knowledge, behavior, and attitude

Financial literacy is the ability of individuals to understand and use economic and financial matters. It is a field related to financial inclusion that is attracting a growing interest among economists and policymakers; in fact, several studies have demonstrated the positive impact of financial literacy on individual behavior, suggesting that it can support more conscious economic decisions, exploiting the opportunities offered by a developed financial system, while appropriately taking risks into account (Lusardi and Mitchell, 2011 and 2014). Therefore, assessing the levels of financial literacy in the population is a key component for identifying the gaps and promoting policy measures.^{57 58}

In the last decades, a framework widely shared at the international level has been developed by OECD. It increases the value of such an assessment by enabling countries to benchmark themselves with other countries.

According to OECD methodology, the measurement of financial literacy (FL) score is the sum of three components:

- (i) Knowledge (FK): the score is computed as the number of correct responses to the seven financial questions, and ranges from 0 to 7. The questions concern the understanding of the basic relationships useful for making financial choices: inflation, interest rates, the difference between simple and compound interest rates, and risk diversification.

⁵⁶ The questionnaire and many other documents on the survey are provided here: <https://www.worldbank.org/en/topic/financialinclusion/overview#1>.

⁵⁷ According to Koomson et al. (2022) who analyzed survey data in Tanzania, Kenya, and Uganda, entrepreneurship and financial inclusion act as mechanisms of change through which financial literacy can contribute to decreasing poverty.

⁵⁸ A survey on wealth and financial literacy (Encuesta de Carga Financiera y Educación Financiera de los Hogares) is conducted by the Central Bank of Colombia (Banco de La República).

- (ii) Behavior (FB): the score, ranging from 0 and 9, counts eight “financially savvy” behaviors, consisting of seven dummy variables (0/1), and one variable with a scoring system of 0/1/2. The questions refer to the management of financial resources in the short and long term: setting financial objectives, planning resources to be used for consumption, bill payments, and savings in recent months.
- (iii) Attitude (FA): the score, ranging from 1 to 5, is computed as the average response across three attitude questions (codes of the degree of accordance 1-5) revealing the orientation of individuals toward saving, precautionary saving, and long-term perspectives.

The financial literacy score $FL = FK + FB + FA$ takes values between 1 and 21 (though sometimes it is normalized to range from 1 to 100).

Drawing on various questions used in the questionnaire, financial inclusion indicators can be created. In particular, these indicators allow the estimation of the share of the population holding payment products such as prepaid cards, current accounts, saving investments, retirement products, insurance, credit products, and so on.

The complete questionnaire and all the instructions for collecting data coherently with the framework above are contained in OECD (2018) and OECD (2022).

Lusardi and Mitchell (2011) proposed a more concise set of questions to assess financial literacy, focusing on three fundamental economic concepts essential for informed financial decision-making: interest compounding, inflation, and risk diversification.

Financial fragility and over-indebtedness

Over-indebtedness is a structural lack of resources needed to meet household financial commitments without lowering its standard of living below what is regarded as the minimum acceptable. It thus involves both a disequilibrium between debts and assets (i.e., the debts cannot be simply repaid by selling assets) and a lack of current resources to face the costs of the debts and other commitments (Bridges and Disney, 2004; European Commission, 2008; BIS, 2010; D’Alessio and Iezzi, 2013).

The analysis of over-indebted households is of interest for many reasons. On the one hand, over-indebtedness is a social issue; it is thus important to evaluate the number of people who live in a condition of economic distress due to their debts and the extent of their difficulty. On the other hand, it can be an issue for financial intermediaries, and more in general for the stability of the financial system as a whole. Consequently, public authorities need to estimate how the phenomenon is widespread and the amount of collateral provided to guarantee the loans in order to define possible policy measures (i.e., providing assistance, moratoriums) and anticipate the effects of maneuvers on interest rates).⁵⁹

Several indicators are used to capture over-indebted conditions in surveys.

⁵⁹ There are many reasons why households may accumulate more debt than they can repay. The first driver of over-indebtedness is financial imprudence, i.e., poor financial decisions caused by an inadequate understanding of the real cost of repaying the loan. This factor may be linked both to the issue of the transparency of lenders’ terms and conditions and to borrowers’ financial literacy and ability to manage their finances correctly (plan expenses and income). Over-indebtedness may also arise when unexpected events modify the initial conditions in which the contract between the creditor and the debtor was concluded. An unexpected reduction of household income (e.g., a crop loss or a job loss), an unforeseen expense (e.g., expensive medical care), and an increase in the cost of debt (e.g., a rise in interest rates) are all events that can lead to over-indebtedness. Unexpected changes in family structure may also affect the ability to repay the debt (e.g., the death or birth of a family component or divorce). In some cases, the condition of over-indebtedness derives from poverty, which pushes individuals incapable of coping with their expenses to ask for a loan that has little chance of being repaid; this mainly happens when creditors are unable to select the right debtors.

Two commonly used indicators refer to the burden imposed by debt repayments and put a limit on repayments relative to gross income, beyond which they are thought to represent a significant burden for households. The limit is 30% (or sometimes 50%) for the ratio of the cost of debt to income beyond which repayments are a major burden for households. When considering only unsecured loans, the limit drops to 15% (or 25%), because the risks connected with these debts are not covered by real assets.

A further indicator considers the situation in which the income available (or the consumption level), after paying the debt servicing costs, is not sufficient to meet the basic needs of life. In other words, the household is over-indebted if it is poor due to its debts, i.e., because the spending on total borrowing repayments takes it below the poverty line.

For the estimation of these indicators, both the income indicator and the cost associated with debts are required. While the cost of debts requires only a limited supplement of information to the questionnaire (a question on the amount yearly or monthly paid for each debt), a reliable income indicator requires a high number of questions. If the survey does not permit estimating household income, respondents can be asked directly to quantify the portion of their income allocated to debt repayment. While less precise, this measure offers insight into the debt burden.

A simple indicator of financial distress linked to debts refers to the arrears only (usually for more than 2 or 3 months) in the payment of all forms of debt and household bills. The cut-off is chosen in such a way that households simply forgetting to pay a bill or debt for 1-2 months are not considered to be over-indebted (Oxera, 2004). Another indicator asks people directly whether they are facing debt repayment difficulties (Betti et al., 2007). The drawback with such a subjective indicator is that it inevitably depends on individuals' interpretation of terms such as "heavy burden".⁶⁰

Risk aversion

The attitude that individuals have toward risk is an important determinant of economic behavior. According to a vast literature (Binswanger, 1980; Gloede et al., 2012; Guiso and Paiella, 2005), risk aversion – i.e., the tendency to prefer choices characterized by low uncertainty – differs significantly across individuals: whenever it has been studied, a vast majority of the population is risk averse and dislike uncertainty, while a minority is risk neutral and even a smaller fraction is risk loving.⁶¹

The degree of risk aversion has an impact along different economic dimensions (Dohmen et al., 2011). Risk-averse individuals have a significantly lower probability of becoming entrepreneurs rather than employees with a fixed wage and tend to invest their wealth in less risky assets; their demand for insurance coverage is higher while their investment in education – that can be considered a long-term investment with uncertain returns – is lower. Some authors also found links between risk attitude and migration or job change.

In LMICs various authors (Yesuf and Bluffstone, 2009; Gloede et al., 2012) showed how investment decisions are made in environments that are very risky (i.e., droughts, pests, flooding, livestock diseases) and suffer from the inability of households to shift the risks toward third parties (insurances, credit market). Risk aversion is intensified in conditions of poverty, thus limiting the possibility of approaching innovative investments and taking advantage of profitable but risky

⁶⁰ Sometimes also the number of credit loans is considered, although it is only a signal of possible over-indebtedness.

⁶¹ An individual is risk averse when his utility function attributes larger importance to the negative outcomes over the positive outcomes, thus preferring not to risk even if this attitude prevents him from possibly higher earnings. The risk-loving is in the opposite condition because he/she likes uncertainty, while the risk-neutral does not attach any importance to it.

opportunities, thus reinforcing a poverty trap⁶². Moreover, risk aversion is not an invariant personal characteristic but depends on past experiences, i.e., negative shocks increase risk aversion on subsequent occasions.

In economic studies risk attitudes have been measured in many ways, that can be categorized into three groups: a) asking individuals to rate themselves on a scale of risk attitude; b) asking for a reservation price of a hypothetical lottery ticket; c) asking about risky behaviors.⁶³

A simple question of the first group, drawn from the German Socio-Economic Panel Study (SOEP), asks respondents to classify themselves on a scale between 0 and 10; the larger the number the weaker the tendency toward avoiding risk. The exact formulation is the following: “*Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks? (Please choose a number on a scale from 0 - unwilling to take risk - to 10 - fully prepared to take risks)*”.

The risk attitude is not necessarily uniform across the domains it can be referred to (finances, leisure, career, health, education). The same question as above but replicated for the specific domains shows positive (but far from unitary) correlations with the general risk attitude (from 0.3 to 0.7), suggesting the adoption of domain-specific indicators (Dohmen et al., 2005).

Another example of a question specific to the finance domain is adopted in the 2020 Italian SHIW: “*In managing your financial investments, would you say you have a preference for investments that offer:*

- 1) *very high returns, but with a high risk of losing part of the capital*
- 2) *a good return, but also a fair degree of protection for the invested capital*
- 3) *a fair return, with a good degree of protection for the invested capital*
- 4) *low returns, with no risk of losing the invested capital.”*

The questions of the second group usually ask the respondent the maximum price he would pay for participating in a hypothetical lottery. A formulation proposed by Ding et al. (2010) is the following: “*Suppose in a lottery game, the possibility to win 1,000 yuan is 10%, then how much would you pay at most to buy a lottery ticket?*”. The price reveals the risk aversion of the individual.⁶⁴ A similar question was asked in the 1995 SHIW: “*We would now like to ask you a hypothetical question which we ask you to answer as if this situation was real. You are presented with the opportunity to purchase a security with which you can, with equal probability, earn 10 million (about 5,000 euros) or, if not, lose all committed capital. How much are you willing to pay, at most, to buy this stock?*” (Guiso and Paiella, 2008). Holt and Laury (2002) suggest reaching the maximum price through a sequence of binary alternatives, that slightly simplifies the choice.

Although questions based on hypothetical lotteries could conceptually provide a precise measure of risk aversion, they may be difficult to understand by some interviewees, especially those with low education. This lack of comprehension often results in a high number of missing responses and high measurement errors. For these reasons, such questions are not recommended in many LMIC contexts.

⁶² According to Yesuf et al. (2009), from one-third to two-thirds of Ethiopian households are severely or extremely risk averse.

⁶³ In psychology there is a long tradition of measuring risk attitudes in surveys (see, e.g., Weber et al., 2002).

⁶⁴ Ding et al. (2010) test a different formulation, that seems even more complicated for the respondents: “*Now we change the conditions of the choice. Suppose you are offered 100 yuan in cash. Instead, however, you may choose a lottery ticket. The lottery has a prize of 2000 yuan, but the probability to win has not yet been determined. We want you to think about different probabilities to win the prize of 2000 yuan. How high should this probability be at least for you to take the lottery ticket rather than the 100 yuan in cash?*”.

In summary, in general surveys conducted in LMICs, it may be preferable to collect information on risk aversion using simpler indicators, such as those that ask individuals to rate themselves on a risk attitude scale.

Inheritances and donations

The observed structure of wealth may not be fully explained by the accumulation behavior of households, in that households that appear similar in terms of demographic and employment characteristics have very different wealth patterns. Understanding the role of inheritances and other substantial transfers can help to understand their role in wealth differences, the extent to which they enable other activities (such as business formation), and the effects on inequality.

A first approach relies on the collection of retrospective data on inheritance or gifts received or given. However, specific problems arise in dealing with the collection of past data. The main obstacle accrues to defects in memory: data quality may be low when one tries to record events that happened in the distant past. Specific interviewing techniques can be applied in order to help the respondent retrieve the year in which the transfer occurred and the corresponding amount: the year in which the transfer took place may be conveniently connected to specific events in the respondent's life (e.g., marriage, the birth of a child...).⁶⁵

A simpler way to collect data on the role of inheritance and donations on household wealth is to ask, for the assets held, if their acquisition is due to an inheritance or a donation. This solution was adopted in the extended module for the main assets⁶⁶. Although this method does not collect information on the inherited properties that are no longer owned by the household, an estimation accounting for this lack can be obtained, under quite mild hypotheses (see Barca, Cannari, and Guiso, 1994). The above approach is quite easy to adopt for the main properties (i.e., houses, land) and also requires a limited number of questions, but it can reveal insufficient in the estimation of inheritance and donations that occurred in different forms.

Transfers other than inheritances may also assume a very important role in many countries. In many countries a very important form of donation assumes the form of a dowry (or brideprice), i.e., a transfer of a sum of money, jewelry, or other gifts (i.e., livestock) from the family of the bride (groom) to the family of the groom (bride) at the time of marriage. Due to its social importance, the set-up of a significant dowry can be a strong saving motive for the household. Moreover, under the pressure of providing a large dowry to ensure that their daughter is accepted into a good family, families are sometimes forced to take out loans or sell assets to pay for the dowry. This can have long-term consequences for the family's financial stability.

In countries where dowries and brideprice are an important issue, some specific questions (or response items) could be included. For example, one could consider the dowry as one of the possible response items to the question about the origin of the assets held, or as one of the motives for saving or taking a loan. One could ask if someone in the household has ever given or received a dowry (brideprice) or if the household has ever experienced financial hardship due to the pressure to provide a dowry. Moreover, further questions to better understand the prevalence, attitudes, and impacts of dowry practices in a particular region or community can be considered.

⁶⁵ From an analytical point of view, it is worth noting that bequests typically occur in specific cohorts of age. The comparison of the wealth of individuals at different ages can be affected by the sequence of events that already have taken place in their lives. The analyses trying to explain the origin of personal wealth or the impact of inheritance on wealth distribution should take this point into account.

⁶⁶ The question about the origin of the asset – i.e., how was acquired that asset – may also be important for assessing the legitimacy and the degree of formal ownership.

5. Data collection strategies for measuring household wealth

5.1 *Strategies: an overview*

In this section, we are going to describe the possible strategies that can be applied by LMICs interested in acquiring information on wealth through household surveys. The various options offered to the readers reflect the assumption that a single solution cannot fit all the different conditions in terms of the objectives of the survey, already available household surveys, and availability of administrative data.

As we have shown in the previous sections, most countries already run a survey on households, collecting data on at least some items related to wealth. In LMICs, the collection of wealth-related data is predominantly framed around consumption, whereas in HICs, wealth is more commonly associated with income. The analysis has shown that almost all the surveys conducted in LMICs tend to lack at least some items and that in some cases only the ownership is collected while the associated values are missing.

When the objective of a harmonized estimation of the household wealth aggregate is achievable through some limited additions of the missing items in the questionnaire, without significantly affecting the respondent burden, it can be a reasonable strategy to pursue (Section 5.2). A simple integration of the questionnaire with the missing items is not however a straightforward strategy in all the conditions, because existing household surveys often have many topics to deal with and those who are responsible for the data collection are reluctant to give room to further questions that could affect the participation in the survey and the quality of responses. Moreover, the informal institutional setting that characterizes many LMICs may require a more detailed analysis of wealth items that can hardly be integrated into already complex surveys. Much depends on the range of analytical uses required of the data.

In the following, we also describe some possible strategies aiming at combining the purpose of harmonized wealth data collection and keeping the respondent burden within reasonable limits (Section 5.3). First, we explore the possibility of splitting the interview into several days or occasions. Then we examine the possibility of collecting wealth data by devoting to this topic a special module of a panel or a repeated cross-section survey. Last, we describe a tool for splitting the questionnaire into modules to submit to sub-samples, reducing the overall respondent burden. Moreover, whenever administrative data on wealth components are available and reliable, their use to complement survey data is a very efficient strategy to use (Section 5.4).

Section 5.5 discusses how panel data can expand the scope of wealth analysis by capturing changes over time in the amounts held and enhancing the quality of collected data. Section 5.6 focuses on sampling, suggesting sampling strategies that include information useful for identifying all the strata of the population and ensures adequate representativeness of the vulnerable population. Sections 5.7 and 5.8 outline key measures that can be implemented to ensure high-quality wealth data collection and estimates, while Section 5.9 illustrates how comparing survey data with macro-level sources can serve both analytical purposes and as a validation tool for survey-based wealth data.

5.2 *Adding wealth items to existing household surveys*

After having identified the questions that would need to be introduced in a survey to obtain estimates of a sufficiently comprehensive measure of household wealth, it is useful to evaluate which data collection strategy to employ to achieve the goal. The choice of strategy should take into account several factors, like the available financial resources, which may affect the choice between setting up a new survey or supplementing an existing survey, the coverage of wealth items in the existing surveys carried out in the country, the presence of other data sources with pieces of information on wealth, which could complement survey data.

From an analytical point of view, the opportunity to collect data on income, consumption, and wealth (ICW) at the same time is very promising. OECD (2013b, p.148) explicitly mentions the joint ICW framework: *“Collecting information on household income, consumption and wealth simultaneously is a challenge. However, it has been successfully undertaken by some statistical agencies. The benefits are far-reaching, in terms of better understanding the relationships between income, wealth and expenditure for individual households and groups of households, and for enabling analysis that provides a more complete picture of the economic well-being of households”*.

As we have seen, in most LMICs, there are available multipurpose surveys mainly focusing on income, employment, and/or consumption. In recent years, since the increasing interest in the role of wealth in the study of households’ economic conditions, several countries expanded existing surveys to include information on assets and liabilities. In such conditions, a limited expansion of the already running income/consumption surveys, to reach a complete coverage of the main wealth items described in the basic module, seems a feasible strategy, with limited impact on financial resources and respondent burden.⁶⁷

When adding questions to existing surveys, it is important to ensure that those questions are asked to the entire relevant population. For example, questions about the ownership of agricultural land should not be asked only to farmers, because this would fail to capture landowners who are not active in agriculture. Similarly, questions about financial assets should not be directed only to bank clients, unless banks are essential intermediaries for holding those assets (i.e., bank deposits). In general, the temptation to simplify the interview by excluding from certain questions those households for which, based on specific characteristics or simple assumptions, the ownership of a certain type of asset is deemed unlikely should be carefully weighed. A modest gain in interview time may be outweighed by the introduction of an irreparable bias in estimates referring to the whole population. In some cases, consolidating the filter questions on the ownership of all assets and liabilities may facilitate the organization of the interview, since each filter question guides the respondent to a dedicated in-depth section.

This strategy can exploit a certain degree of intersections in data collection between wealth and income or wealth and consumption (see Appendix A in OECD 2013b). Some questions are often present in all three surveys; in many other cases, the questions needed for the construction of wealth indicators can be built with a limited extension of the sections already present in the other two surveys. For example, in the surveys on income and consumption, information on the properties held by the household is usually collected; this information is used for estimating both the actual and the imputed rents. Asking for the value of the properties owned is not such a significant increase in burden, at least where conditions of ownership are not complicated. Equally, items on agricultural and non-agricultural business are usually collected in income surveys while the list of durables acquired by the household is almost always collected in consumption surveys. The ownership of financial assets is often collected in income surveys, needed for the estimation of interests and dividends; also, the mortgages and debts are used for defining (negative) components of capital income. In many cases, the data collection only adds a few questions, to capture the market value of assets and liabilities.⁶⁸

⁶⁷ OECD (2013b) reports the case of Australia, which regularly conducts integrated household surveys on income, wealth, and consumption in order to obtain – within the framework of the National Accounts - a complete picture of the distribution of income, consumption and wealth (ABS, 2022).

⁶⁸ According to Hasanbasry et al. (2023) who analyze the paradata of several LSMS surveys, the length of the average household interview for the socioeconomic household questionnaire ranges from 80 to 120 minutes, depending on the country, and the length of the average adult interview for the individual questionnaire is from 13 to 25 minutes. Moreover, the household interview duration estimates are not inclusive of the time that was spent (in the case of Ethiopia and Tanzania) on the agricultural questionnaire that, on average, takes a further 60 minutes. On the other side, a tentative evaluation of the average time needed to fill the basic module is around 20 minutes. Considering that some of the questions included in the basic module can already be present in the running surveys, the additional impact can even be lower.

We have seen both in analyzing the expanded module and the wealth-related topics that there are many further aspects that can be worth exploring together with wealth, and that significantly enrich our understanding of household economic conditions and behavior. However, if all these topics were inserted in an existing household survey (HBS or HIS) the burden might exceed the limits of feasibility. Where analytical interest is sufficient and resources are available, a new survey constructed around expanded measures of wealth and relevant household conditions might then be appropriate. Below, we outline some tools that can help meet knowledge needs in different ways.

5.3 Tools for reducing the respondent burden in household surveys

Keeping together the benefits in terms of data analysis of having a simultaneous data collection of income, consumption, and wealth on one side, and the data collection needs on the other, may require the use of incentives or the adoption of data collection strategies, able to tackle the burden on respondents and support the quality of the information collected.

A possible solution is splitting the interview into several days or occasions. This is what is usually done in the case of consumption surveys: considering the initial interview, the interactions for the assistance provided in compiling the diary, and the final interview, the data collection from a household takes place over a rather long period, a week or more.

Alternatively, one could submit some modules related to wealth (e.g., the intra-household control over the resources held by the household, or the financial education,) on a different occasion after the main interview, as sometimes happens in a panel framework. In such a case, the advantage of reducing the burden of the single interview is obtained at the cost of additional organizational charges for two data collections and the possibility that there might be nonresponse for the additional interview attempted. There can also be a lack of consistency between the information collected on the two occasions due to the time lag between the two occasions, which is however usually limited, as wealth is a structural component of well-being.

If splitting the interview is not considered a good option, one can try to split the questionnaire. The literature on Split Questionnaire Designs (SQDs) (Axenfeld et al., 2022; Peytchev and Peytchev, 2017) provides several solutions for collecting a wide number of topics while keeping the questionnaire length for each respondent below a defined limit. The idea is to split the questionnaire into several parts and then randomly assign each household a fraction of the full questionnaire (modules). The missing values that derive from the design can be subsequently imputed (or the units with missing values can be dismissed for that estimate).

A very simple SQD scheme provides alongside the main interview module (A), two alternative modules (B and C) dedicated to different special topics. The respondent is asked to answer the questions of the main module (A) and of one of the two modules (B or C), according to a random event (e.g., the questionnaire used for the Bank of Italy's SHIW in 2016 considers whether the respondent's day of birth is odd or even).⁶⁹ The length of the interview is thus reduced (A+B or A+C rather than A+B+C) because each household provides the answer only to one of the two special modules (B or C). Imputation is not needed in this scheme because missing data are completely random, but the cost is a smaller sample size for the two special modules (in the example, A+B and A+C have approximately one-half of the overall sample size of A). Moreover, by design, the questions belonging to B and C are never collected together. More complex SQDs could address this drawback, albeit at the expense of increased complexity in both questionnaire design and data analysis.

5.4 Using external sources to complement wealth data in household surveys

⁶⁹ See the questionnaires at: <https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/documentazione/index.html?com.dotmarketing.htmlpage.language=1>.

Combining reliable information from different data sources to compute the desired statistics can be a very efficient strategy to adopt (OECD – EUROSTAT, 2023). The optimal approach may vary, depending on the country’s circumstances, privacy laws, availability, and quality of survey and register data. The range of supportable uses also depends on whether such information can be matched exactly to survey participants or whether the information is available only in a form that can be addressed using characteristics that are also present in the survey. Different techniques are available for combining multiple archives, depending on the information available and on the institutional conditions.⁷⁰

The preliminary and necessary step to combine information from different data sources is to deal with possible differences in concepts and definitions. This is especially the case when survey data and registers are used but may also be an issue when combining information from two different types of surveys. Differences may also concern the population of interest, the data collection method, the definition of corresponding items, and the valuation applied.

In some cases, it is possible to integrate data through exact matching. This approach requires the presence of a unique code (e.g., a fiscal number) in the two databases (administrative and survey data) or at least a number of characteristics (name, surname, birth date, ...) whose combination provides a high probability of correct matching. In many countries, dwellings, income sources, financial assets, and debts must be registered, either for fiscal purposes or for other reasons. Other wealth items – such as savings held in foreign currency or in specific financial instruments – are sometimes available. This operation may be straightforward if all the archives are held by the same institution which has the right to collect, store, and use identifying information. Otherwise, matching tends to be difficult to carry out, because privacy laws often prevent different data producers from exchanging identifying data about individuals or households.

When combining survey and administrative data one must consider that each source has its advantages and drawbacks. Household surveys are flexible and in principle can be easily adapted to collect the required information. Moreover, they often collect a set of demographic and socio-economic information relating to all the members of the household. This information can be used to classify households in order to compute the distributional indicators of interest. On the other hand, surveys are likely to be affected by quality issues such as the under-representation of some groups of the population (e.g., rich households) and various types of reporting errors, such as under-reporting of monetary values. Administrative records, when available may represent a cheap source of distributional information, in particular at the level of small geographical areas. They are free from survey errors although they can contain different measurement errors, depending on the selection, reporting, and processing of the data. Some countries already use them for sampling purposes or editing and processing survey data; in other cases, they replace the information collected in the survey. On the other hand, using administrative records also has the caveat of lacking information that can only be collected through surveys.

If exact matching is not a feasible approach—due to the absence of a unique identifier, differences in the units covered by the two databases (administrative or survey data), or legal and administrative constraints on data linkage—statistical methods can be employed to combine information from the sources (D’Orazio, Di Zio, Scanu, 2006).

To combine two different probability samples, two kinds of approaches are available. The first one is a micro approach which aims to construct a synthetic dataset combining all the available information at the individual level. It is based on imputation methods. The dataset can then be used for any analysis of interest. An example of such an analysis is provided by Lamarche et al. (2020) who combine data from 3 European sources, the Household Budget Survey (consumption), the EU-

⁷⁰ For a review of statistical methods to combine survey data with other sources, see Lohr and Raghunathan (2017) e Yang and Kim (2020), and Rao (2021).

SILC (income), and the HFCS (wealth), using a non-parametric statistical matching approach. The second approach is the macro approach which uses statistical models for the direct estimation of the variable of interest without the need for imputation at the individual level (Merkouris, 2004).

In some cases, information on variables of interest, such as wealth, may be available through non-probability samples. In these samples, the selection mechanism of households is unknown, and the results based only on this data can be biased because the sample could not represent the entire population. Nevertheless, if a probabilistic sample of households is available, it may be possible to use auxiliary information on the population to adjust results from non-probability samples; the effectiveness of this approach depends on whether the covariates available for adjustment are sufficient to account for the selection bias, an assessment that must generally be based on judgment, rather than a transparent statistical protocol.

The statistical techniques used are mostly based on weight adjustment (for example, using a propensity score or calibration weighting technique) is intended to reduce the bias in the estimates and to align the distribution of the probability sample to that of the target population along the dimensions of the adjustment variables. Another technique to combine these sources of data is based on mass imputation in the probabilistic sample of the variable coming from the non-probabilistic survey (say households' wealth), where observations in the latter survey are used as a training dataset to impute values to households in the probabilistic sample (Chipperfield et al., 2012). But because such imputation rests on only the correlations of the conditioning variables with the variables to be imputed, there is no guarantee that the correlations between the imputations and the other survey variables are correctly represented; such issues may call for greater attention in analytical uses involving multivariate analysis of the survey data.

One extension of this approach relies on the use of big data sources as non-probabilistic samples. With respect to the previous case, it combines survey data with a very large non-probability sample with either a large sample size or many covariates (Tam and Clarke, 2015; Tam and Kim, 2018). These data may come from administrative records, such as tax data, or remote sensing data, such as those that can be derived from satellite images. Both these sources may be extremely useful to gather information about household wealth, though they are generally also subject to the same limitations.

The main disadvantage of the statistical combination of different sources lies in the uncertain nature of the process. The quality of the results is strictly related to the assumption that variables used to combine the sources are strongly associated with household wealth (Conditional Independence Assumption, CIA) (Donatiello et al., 2016). This assumption may often not hold in practice and is at best difficult to test. However, an accurate choice of the variables used for the matching between the two sources (i.e., those able to explain the largest part of the target variable variability) may significantly improve the effectiveness of these procedures. In particular, CIA can be a sufficiently valid assumption if one of the matching variables is a proxy that is closely correlated with the target variable. The statistical matching of multivariate distributions (such as income, expenditure, and wealth) is particularly challenging and still in its infancy (Donatiello et al., 2014). Whatever the method used, it is important to be transparent on the methodology used and to define criteria to assess the quality of results in the context of the analytical approach.

In general, it is advisable to adopt a proactive strategy—known as integration by design—that relies on the use of common identifiers, harmonized definitions, and aligned reference periods across sources, in order to facilitate more efficient and reliable data integration while preserving data quality and consistency. When a specific statistical source is intended to be integrated with the survey data, it is useful to maximize the inclusion of variables that are consistently present in both sources—particularly those with high explanatory power for the target variable.

5.5 Panel data and wealth dynamics

Panel data may be used to estimate wealth changes at the micro level, i.e., gross flows over time. A typical table of such information obtained using panel data combines the distribution of the households by wealth brackets obtained in a survey with the corresponding distribution obtained in the previous wave. Along the diagonal are the households that keep the same class over time while the off-diagonal units represent the changes that occurred over the period. Similarly, the correlation coefficient between the measures in the two waves provides a simple index of persistency of the phenomenon, which for wealth is usually highly positive, due to the structural nature of household wealth.

Nonetheless, the comparison of household wealth values over time often shows a certain number of big changes, that are difficult to attribute to saving, which is usually believed to be the main source of wealth variation. Such changes need to be investigated and correctly interpreted.

The first aspect to consider is the household demographic composition. Any demographic change may cause substantial variation in household wealth and must be accurately considered when analyzing wealth variations over time. For example, if a member of a sample household, who owns a part of the household wealth, leaves the house of origin to form a new household, the wealth of the household of origin decreases; the opposite occurs when a member of another household, owner of some wealth, joins the household we are observing. Also, the death of household members who own part of household wealth may cause a decrease in the household wealth, if some of the heirs are outside the boundary of the household; conversely, the death of individuals outside the household can cause an increase in the household wealth, when the heirs are members of the observed household. Other exceptional events (e.g., thefts, accidents, earthquakes, floods) may significantly modify the amount of the wealth held.

A further important source of variation of wealth is connected to the evaluation process of assets held. Capital gains or losses, which respectively refer to positive and negative differences arising from pricing differently the assets held, may bring about significant wealth variations. It is worth noting that, from the economic point of view, it's not relevant that the increase or decrease in the value is realized through the actual sale of the revalued or devalued asset. A consistent amount of literature supports the idea that even non-realized changes in wealth due to prices affect household behavior through the so-called "wealth effect" (Peltonen et al., 2009). Other elements of windfall income, such as proceeds from a lottery or the sale of an unusually good harvest, may also be the source of unusual wealth changes.

An accurate comparison of household wealth over time needs flagging these aspects in the questionnaire (e.g., demographic changes, inheritances and donations received and given, exceptional events occurred, and changes in prices during the period from one wave to the next) to ensure that the corresponding variations in the household wealth are correctly interpreted and can be examined as true changes rather than as the effect of some measurement errors.

A further solution for acquiring information on these changes and limiting the amount of spurious change is adopting dependent interviewing, which uses the information collected in previous waves of a longitudinal survey to shape the current wave's interview (Jackle, 2008; Hurd et al., 2019; Jackle and Heckman, 2020; Pankowska et al., 2021).

The literature mentions two different approaches to dependent interviewing. In the Proactive Dependent Interviewing (PDI) the interviewer uses the information from previous waves to shape the questions directly, often using it to skip certain questions that are already answered or to remind respondents of their previous answers. This approach implies a significant burden reduction, concentrating the interviews on changes only. However, it may introduce bias, increasing the tendency to confirm the previous information, and is not a usually suggested strategy.

In the Reactive Dependent Interviewing (RDI) the previous information is not immediately recalled to the respondent but is used only to check important inconsistencies. If there is an important discrepancy in the ownership or in the value of assets compared to those reported in the previous wave, the respondent is prompted to clarify or correct their answer. Usually, the respondent is confronted with both values and asked whether they are correct, and if not, what their values should be. This strategy increases the respondent burden (clarifying discrepancies requires time) and it may make respondents suspicious of the security of their information. Of course, there is a trade-off between the threshold for defining a significant discrepancy and the respondent burden; in general, it is better to limit the requests for clarifications.

This approach can also imply the revision of past data and some additional costs for CAPI/CATI programs. However, as far as there are no privacy limitations, it is recommended as it can significantly improve the quality of panel data for the analysis of changes.⁷¹

5.6 Sampling the wealthy, sampling the poor

In wealth surveys, specific attention is often paid to the theme of sampling the rich. In general, wealth is more concentrated than income, especially when financial assets are considered⁷²; according to the Global Wealth Databook (Credit Suisse, 2022), wealth concentration in LMICs tends to be higher than in HICs. Moreover, rich households are generally challenging to enroll in a survey and even to contact to negotiate the interview because they are usually absent from their main residence for extended periods and own more than one residence that is surrounded by security measures such as doormen or guards. In addition, the reduced availability of free time, the high cost of that time, and the sensitivity of revealing their wealth tend to make wealthy individuals less willing to participate in an interview. Affluent households have thus a lower propensity to participate in the survey and have socio-demographic characteristics that are very different from the average (Lynn, 1996; Korinek et al., 2006).⁷³

The concentration of wealth and income among very rich households, combined with the difficulty of collecting information on these households, implies that tail-sensitive estimates—such as averages, aggregate measures, and many inequality indicators—will be biased. In such cases, it is common to rely on more robust statistics, such as the median or quantile-based inequality measures (e.g., P90/P10), which are not affected by extreme values.

When the purpose of the survey is to obtain a reliable picture of how wealth is distributed it is quite common to consider techniques to include in the sample households belonging to all the different parts of the wealth distribution or to apply statistical techniques in analysis to compensate for under-representation of the wealthy. In line with Neyman's optimal allocation criterion, a higher sampling rate in predefined strata where rich people can be more easily found reduces the variance of wealth average estimates. Of course, the application of this criterion crucially depends on the ex-ante availability of information on the wealth of households or on some indicator highly correlated

⁷¹ An example of Reactive Dependent Interviewing is provided in Section U - Asset Verification of the 2020 Health and Retirement Survey. Any time the respondent provides a value of an asset or debt in the current wave that differs greatly from that provided in 2018, the respondent is asked to confirm or correct the values. The check is activated only when the respondent's current net worth differs by more than \$150,000 or when one of the respondent's specific type of assets or debt differs by more than \$50,000. In these cases, the respondent is asked to reconcile current and past answers. In particular, for every asset is asked: According to our records in the previous wave you had ... now you have ... Does this sound right? Yes / No / DK / RF. If No: Which record is wrong? Previous wave / Current wave / Both / DK / RF.

⁷² According to the Keynes "psychological law" of savings, as income increases, people tend to save a higher proportion of their income (decreasing marginal propensity to consume). Individuals with lower incomes spend a larger portion of their earnings on basic needs such as food, housing, and clothing than more affluent individuals. This implies a positive but non-linear relationship between income and savings (and thus wealth).

⁷³ Households at the bottom or the top of the wealth distribution are rare populations and very difficult to contact even only to negotiate an interview (D'Aurizio et al., 2006, Sánchez Muñoz, 2011).

with wealth. The most effective strategy would be to use, if available, personal wealth data or proxies for wealth, such as household-level electricity consumption, the estimated value of the dwelling, or personal income data. In Appendix E we provide some details about some cases of over-sampling the rich.

However, the focus of these guidelines is mainly on the collection of wealth data for better designing social policy with emphasis on the less well-off. Data collection of wealth components is primarily intended to reinforce the criterion used for poverty definition; in such a case, the researchers are more interested in describing the wealth of the lower and middle classes rather than providing an accurate picture of the right tail of wealth distribution.

From a vulnerability perspective, a specific sampling strategy driven by the presence of the wealthy in the sample is unnecessary. It is rather of interest that the most impoverished populations are appropriately represented in the sample, along with an acceptable range of the middle-to-upper-middle class. The poor face barriers to participation in research studies, even when efforts are made to include them in the sample. The accessibility issues can be both practical (e.g., difficulties in interviewing the homeless, the nomad populations, the refugees) and cultural (e.g., lack of a common language, low literacy, reduced trust or interest in research). Moreover, poverty often intersects with sensitive and stigmatized issues such as homelessness, substance abuse, mental health problems, and experiences of violence which can make it hard to obtain an interview. The use of some ad-hoc strategies (e.g., community engagement, tailored recruitment material, and flexible interview methods) usually can only mitigate the greater tendency to unit non-response among the poorest segments of the population.

Where possible, it is preferable to use sampling schemes that incorporate information useful for identifying the poorest strata of the population (e.g., see Betti et al., 2023). This helps ensure adequate representation of these groups in the sample and serves as a basis for statistical adjustments to survey weights to compensate for nonresponse, for example, through post-stratification methods. When sufficient data are available, oversampling the very poor may be desirable to offset expected nonresponse. Additionally, specific strategies should be implemented to ensure adequate coverage of hard-to-reach segments of the population (e.g., refugees) (Eckman and Himelein, 2022).

The data used for creating the strata greatly vary across different experiences and countries. Any information available for the entire population that is correlated with the household economic status can be used for this purpose; the higher the correlation of the available indicator with the economic status (or wealth itself), the greater the gain in terms of reduction of the standard errors and bias of wealth estimators. In case household administrative records (e.g., fiscal archives or lists of utility users) are not available or do not adequately represent the most vulnerable and marginalized segments of the population, one could make recourse to spatial stratification. Nowadays it is possible to resort to low-cost information available for almost any territory on earth, which combines satellite imagery (e.g., night lights), connectivity information (e.g., smartphones, computers), geographic data (e.g., agriculture info), and demographic administrative information (Chi et al., 2022; Engstrom et al., 2017; Zheng et al., 2025). This approach is usually less powerful than that based on individual information (i.e., it is only known how the area in which the household resides is rich or poor rather than knowing specific information on that household); nonetheless, it may prove sufficiently useful.

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It must be recalled that a further layer of fragility and inequality is found within households. As already reported in Section 3.2, the procedure often adopted for data collection, which consists of acquiring the information of all the members of the household from the most knowledgeable

⁷⁴ The application of some form of oversampling should also take into account that usually wealth is not the only indicator the researcher is interested in. Most of the time also income or consumption are objects of analysis, and some compromise in the sampling design should be found.

individual (i.e., proxy respondent), may significantly bias the picture of the conditions of those within the household who are more vulnerable. To reduce this bias information about each household member can be collected through self-reported data. However, this approach may face limitations related to budget, respondent burden, and cultural norms.

Alternatively, a random selection of one or more individuals to interview within the household, e.g., adopting the Kish grids or the “closest birth date” method, may provide direct individual information also from a sample of the most vulnerable components. This approach does not allow an estimation of household-level wealth, unless all members are interviewed, or these members are also used as proxies. In such a case, household wealth estimates may have a reduced quality when less knowledgeable respondents are selected.

5.7 Improving the quality of wealth data

The collection of wealth data poses several challenges to household surveys beyond those concerning the sample composition examined in the previous section. The first threat to data quality comes from the fact that questions about wealth, and financial matters in particular, can be perceived as highly confidential. Respondents may be reluctant to disclose accurate information because of privacy concerns or skepticism about the legitimacy or relevance of the survey (see, for instance, Neri and Ranalli, 2011).

To prevent non-response at the contact stage and inaccurate responses during the interview, it is essential to address people's concerns about the potential disclosure of private information. First, it is vital to communicate all the strategies adopted to protect the privacy of the respondents, guaranteeing that responses are confidential and will be kept anonymous. It may be especially important to explain what is done to ensure that the interviewer maintains the confidentiality of all information revealed during the interview. Moreover, the merely statistical scope of the interview needs to be clearly stated. A good reputation of the institutions involved in the data collection and some material to be used before the interview, showing examples of possible use of the data that may be appreciated by the respondent, may help in reinforcing the motivation for participating and providing reliable answers.

In some circumstances, the involvement of people who carry out a recognized function within the community (e.g., the head of a village) can be very useful. These measures can be more effective in the case of panel samples, where it is possible to build a climate of greater trust with the interviewees over time.

Specific methods of data collection can also be helpful in reducing respondents' reluctance, such as procedures based on range data collection or the unfolding brackets method, as it has already been discussed for capturing financial activities (Section 3.1.4).

Errors may also result from difficulty remembering or estimating the requested information. Respondents might not know the current market price of certain assets leading to inaccurate responses or high nonresponse rates for specific items. When possible and appropriate, respondents can be asked to support their answers by consulting relevant documents. In some cases, it may be useful to precede the question asking the value of an asset with another question that assesses the level of (self-reported) knowledge of market values. This information can be useful for calibrating the level of intervention in assessments and in editing the data provided by respondents (e.g., outlier detection), with more impactful interventions for those who report lower knowledge and less impactful ones for others. In any case, the “don't know” answer should always be allowed and imputed ex-post with some models, provided that the main important features of the assets are collected in the questionnaire. This information may also be used to favor a post-survey treatment of incongruous responses through a subsequent imputation procedure that combines the information collected and some evaluation procedure and external information. This strategy can help address when value information is missing

due to the low literacy levels of respondents or the absence of a proper market, with limited transactions. In some other cases, average values for some assets (e.g., the market value of livestock) can be collected from local experts or computed from the averages of the purchases or sales and used for the imputation of missing answers.⁷⁵

Asking respondents to estimate the total value of a set of assets (e.g., multiple properties owned) through a single question is generally not advisable. This is a cognitively complex task that requires not only assessing the value of each asset but also performing mental calculations to sum them, often leading to inaccurate responses. In general, especially when the number of assets is limited—as is typically the case for major wealth items such as dwellings, plots of land, bank accounts, and debts—it is preferable to first determine the number of items held and then proceed to ask for single valuations. These can then be summed afterward, resulting in a more accurate total value. Moreover, as previously mentioned, more detailed data requests improve item recall, thereby helping to reduce income under-reporting (Carletto et al., 2022b).

During fieldwork, it is also advisable to collect information beyond that in the survey, about respondents and nonrespondents, which could be used ex-post to assess the data quality and adjust survey estimates. The ideal case for a wealth survey would be the availability of administrative records with wealth proxies. When this is not possible, it can be useful to approach nonrespondents with a very brief questionnaire on some key variables (demographics, employment, ownership of main wealth components), eventually offering significant incentives for participation; even where such information cannot be used directly in adjusting for nonresponse, it can support confidence in the adjustment methods applied. In addition, in the case of in-person surveys, interviewers should be used to collect information about the neighborhood before contacting the household (such as whether it is a rural or urban area or about the type of building and the security measures).

Moreover, at the end of the interview, interviewers should be asked to provide their assessment of the respondents' reliability on different items (such as the difficulties in giving answers and perceived truthfulness when answering income and wealth questions). Such information could provide valuable insights during the final stage of estimation, when the collected data must be checked and imputed, and when the survey weights are built. In this phase, the socio-demographic information in the survey should be compared with external statistics generally produced by the National Statistical Offices, to make sure that the sample composition reflects the main characteristics of the population. Such information usually includes geographical distribution of population, ethnic and age composition, household size structure, labor status, and level of education, factors that are usually applied in the calibration of the survey weights. Where other common variables are available, but not used in calibration, comparisons may help to build confidence in the survey results.

Given the critical importance of ensuring full over-time comparability of the estimates derived from a wealth survey, it is essential that data collection and estimation methods be kept constant. The introduction of new procedures aimed at ensuring higher data quality should be approached with caution. When changes are necessary or desirable, appropriate measures should be implemented to assess and quantify the effects of the new methodologies on the resulting estimates; for instance, this can be achieved by splitting the sample, with one part surveyed using the new method and the other using the previous methodology.

5.8 Treatment of wealth data

Once the data have been collected, it is standard practice to perform consistency checks on the responses, aiming to ensure the production of more robust and reliable estimates (de Waal et al., 2011; de Jonge et al. 2018). While this activity applies to all variables collected through a questionnaire, in

⁷⁵ All the values provided by the respondents should be subjected to a thorough data cleaning, which includes identifying and correcting errors or inconsistencies and treating outliers (see, for example, Belotti et al., 2022).

the case of wealth data it is particularly focused on identifying excessively high values of assets and debts (outliers). The distribution of wealth is typically highly skewed, and reviewing extreme values is essential to distinguish between genuinely high amounts and measurement errors, such as those deriving from misunderstandings about units of measure or the low ability in estimating a market price of an asset.

This checking process usually begins already during data collection, especially when using CAPI instruments, which can be programmed to prompt the interviewer to confirm or correct any value falling outside predefined ranges. Although real-time validation during the interview is more effective than post-survey editing, it is important not to overload the interview with too many checks, as this could increase the respondent burden and affect respondent cooperation and willingness to complete the interview.

Validation efforts are often facilitated by the availability of auxiliary variables that can serve as consistency checks. For instance, the reported value of a dwelling may seem reasonable on its own but may prove implausible when cross-checked against its size, location, or other benchmark variables. In the case of panel data, it is generally efficient to use also information from previous waves to assess the consistency of current responses (i.e., automatic checks can compare current responses with those provided in previous waves and detect implausible changes and flag them for further review).

This example illustrates that verifying data on wealth can be a complex and time-consuming task and—when done *ex post*—does not always lead to a definitive conclusion about the accuracy of the single response. Some cases may remain ambiguous.

Regardless of whether a single value is judged accurate or not, it is advisable to treat outliers detected with some standard practice in a way that minimizes their impact on results (e.g., see Belotti et al., 2022 and 2024; Cowel and Flachaire, 2007; Cowell and Victoria-Feser, 1996a and 1996b). Common approaches include replacing the outlier with a missing value to be subsequently imputed or reducing the sampling weight of the statistical unit. The pros and cons of each approach should be carefully considered, taking into account their impact on estimates.

5.9 Micro-macro comparison of wealth data

In recent years there has been a growing interest deriving from the comparison and the integration of microdata collected from surveys and those from macro sources, such as totals from National Accounts, which provide an internationally agreed accounting framework for compiling and reporting macroeconomic statistics, or other external sources.

As far as these sources are at least partly independent of survey data and capable of providing accurate estimates of the totals it is advisable to conduct a comparison between aggregate estimates and survey estimates for quality control of the survey data (Andreasch and Lindner, 2014). This comparison can help assess the accuracy of survey estimates, which are subject to various types of measurement and estimation errors. Although macro estimates can also be subject to measurement errors, they typically rely on a range of sources (e.g., census data, tax registers, real estate transactions, administrative data, bank reports, satellite imagery) that, while not enabling detailed analysis by household characteristics, help to prevent major errors in the estimates.

As already noted, wealth surveys may have difficulty in representing specific subgroups of the population such as very rich or very poor households (e.g., Chakraborty and Waltl, 2018). Moreover, since information on household wealth is generally perceived as very sensitive, some respondents may decide to misreport their true holdings, by under-reporting them or otherwise disguising the true values. For all these reasons, wealth totals estimated using the survey are generally lower than the corresponding figures from National Accounts (e.g., HFCN, 2020, p. 66). When the gap between the

two sources is sizable, data producers should investigate the reasons behind such discrepancies, in order to improve survey data quality or to qualify the range of analysis that can be supported by the data.

The preliminary step of the comparison should focus on the differences between the two sources in terms of concepts, population coverage, and methods. SNA and wealth surveys generally present different aims and set-ups. The aim of the survey is to gain more insight into the economic behavior of households and into the distribution of wealth and liabilities among households and household groups. Information is collected directly from households via personal interviews. The aim of the SNA is to provide timely macroeconomic information on the balance sheets and on the financing and investment of the entire household sector. The SNA does not exclusively focus on the household sector but rather describes relationships between all institutional sectors. For the household sector, National Accounts are usually based on counterpart data, i.e., data reported by financial corporations, under regulatory frameworks.

In addition to the generic differences mentioned above, the two data sources may also present some item-specific definitional differences. A particularly notable example refers to the concept of business wealth. Surveys collect information on the assets and liabilities that refer to the private business, including ones that may be intermingled with other personal finances. In contrast, in the SNA there is no “business wealth” concept. If a household runs a business, either the business is recognized (according to certain criteria) as a corporation or so-called quasi-corporation, or it is not, and the household is simply regarded as a “producer household”. In the first case, in the SNA the net value of the business held by households in corporations and quasi-corporations (but not the single components) is recorded as shares on the asset side of the household sector. In the second case, the assets identified as business wealth in the survey are available in the SNA as financial and real assets of households, not distinguishable from “non-business” assets and liabilities.

Another difference generally refers to the valuation of households’ assets and debts. Conceptually, both surveys and the SNA rely on market prices. In household surveys, however, valuations are based on households’ perceptions of market prices. This is usually a deliberate choice in survey design, as the self-assessed value of personal wealth is what influences households’ economic decisions. These perceptions may diverge from actual market values, and this discrepancy can become even greater when asset prices are changing rapidly.

In addition, the two data sources may have slightly different definitions of a household. In the survey generally, a household is defined as “a person living alone or a group of people who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living”. Persons living in institutions, e.g., in prisons or retirement homes, as well as homeless people, are excluded from the definition of a household in most countries. In the NA, households have a similar definition but are regarded as an institutional sector, which covers the whole resident population and does not exclude any groups per se. Moreover, in the NA the household sector also includes non-profit institutions serving households such as charities, trade unions, religious organizations, political parties, and universities; in some countries, it is possible to remove the non-profit institutions from the totals.

In conclusion, comparing surveys and National Accounts can help assess the accuracy of survey estimates, but it is important to keep in mind that the two data sources are built for different purposes and therefore generally present differences in concepts, population coverage, and methods, that should be accounted for.

To fill the gap in terms of definitions that sometimes characterize micro and macro data, some further integration of the questionnaire is needed to establish a fuller connection between the two sources. Sometimes a few questions may significantly improve the comparison between the two sources and open an entire field of research.

The link established between micro and macro data can also allow a wider use of the survey data in the economic analysis, through the so-called Distributional Wealth Accounts, as described in Appendix D.

6. Dissemination of wealth data

Wealth data generally follows several dissemination channels, similar to those used for income and consumption data, although with some specific features, which we outline below.

6.1 The report

Typically, the data producer releases a descriptive report presenting the main findings of the survey. Examples include the report produced in India for the AIDIS survey, the Bank of Italy's publication on the SHIW, the Federal Reserve's Survey of Consumer Finances, and the HFCS by the European Central Bank.

Statistical reports usually include a summary section that highlights the main findings. In this context, it is crucial to combine language suitable for the media and general public—who are often the primary audience—by clearly and accessibly highlighting the key elements needed to understand the content. This includes explaining what is meant by “wealth,” a term that in many languages carries broader connotations, and clarifying what is included and excluded in its measurement.

The availability of wealth data enables a range of standard analyses in these reports. These often include statistical tables showing the distribution of various real and financial assets and liabilities across the population, the median or mean amounts held, and the percentage breakdown of total net wealth by component. Results are usually disaggregated not only for the overall population but also across several relevant dimensions, such as geographic area, municipality size, household size, and other household characteristics like income or wealth classes.

When wealth data are collected at the individual level, results can also be disaggregated by individual characteristics such as gender, age, education, and employment status. If only household-level statistics are available, indicators can still be presented by the characteristics of a reference person—typically selected based on objective criteria, such as the member with the highest labor or transfer income. This practice relies on the assumption that certain individual traits (e.g., education or age among spouses) tend to be highly correlated within households.

In addition to tables, reports often include a rich set of figures (e.g. histograms, pie charts) and visualizations (e.g., maps) that can more effectively summarize key findings.

Given the strong asymmetry of the wealth distribution (and of most of its components), the use of robust statistics is generally recommended. For this reason, medians or other percentiles are often preferred over mean values both in tables and regression analysis. When results from different percentiles converge with those obtained using means, this can support the robustness of the findings.

As with income data, wealth data are often analyzed in relation to inequality. It is important to note that net wealth typically includes a share of negative values; therefore, it is recommended to use appropriate inequality measures, such as the extended Gini index (citation needed). Since the Gini index is sensitive to extreme values, it is generally advisable to conduct thorough sensitivity analyses to support the key findings on inequality presented in the report. In this context, percentile-based indicators (e.g., P75/P25 or P90/P10) can also be useful to validate cross-country or over-time comparisons.

The simultaneous availability of data on both income/consumption and wealth provides the opportunity to conduct joint analyses of these distributions, particularly focusing on their lower tails.

This may allow for the definition of multiple forms of poverty, capturing different dimensions of economic vulnerability. As we have already discussed, individuals or households who are simultaneously in the lower percentiles of both income and wealth distributions may be considered as facing more severe forms of deprivation, compared to those poor in income but with some asset buffer. Such multidimensional approaches can provide a more nuanced picture of poverty and economic insecurity.

In the case of panel data, cross-tabulations of wealth levels observed in one wave of the survey with those from the previous wave are often of particular interest. These tables provide useful indications on the temporal mobility of wealth and allow researchers to assess the extent to which households or individuals move across the wealth distribution over time. Such descriptive evidence can be complemented with summary mobility indicators (e.g., the Shorrocks index), to provide a more systematic assessment of wealth dynamics.

The survey results report should always include, or at least provide a reference to, methodological notes describing the main features of the survey. These notes should cover, at a minimum, the sampling design, the actual outcomes in terms of completed interviews and nonresponse (e.g., refusals, non-contacts, etc.), a comprehensive description of the questionnaire used—including filters, conditions, validation checks, show cards presented to respondents, and interviewer instructions—details on the editing and imputation of key variables, and the standard errors of the main estimates presented in the report.

As to wealth data, it is also advisable to include the definition of various components and the aggregation scheme that explains how the indicators (e.g., real assets, financial assets, financial liabilities, net wealth) are constructed starting from the questionnaire. Additional elements that can help readers interpret the results and assess data quality—such as comparisons with other survey sources or macro-level estimates—should also be considered.

6.2 Microdata

Microdata, properly anonymized and accompanied by all necessary methodological notes and metadata, constitute a fundamental tool supporting economic statistical research (Dupriez and Boyko, 2010). It is considered good practice for statistical data producers to make microdata available for further statistical research (e.g. see the [World Bank's Microdata Library](#)). They enable researchers skilled in statistical and econometric methods to independently carry out their analyses. Moreover, microdata can feed additional databases, such as those underlying public policy microsimulation models. The use of microdata by researchers and third-party organizations for scientific research purposes should be allowed as much as possible, while making clear that it is done under their full responsibility.

The availability of microdata beyond the institution producing the statistical reports is also a form of transparency, allowing external users to reproduce or expand upon the reported results. Moreover, it helps engage new researchers in the survey project and subjects the data to critical scrutiny, ultimately contributing to improved survey quality in the medium term.

The presence of extreme values in wealth microdata suggests the need to mask them to prevent potential identification of respondents, a risk that can be increased by the availability of additional variables. This can be done either by suppressing the few extreme records or by applying top- or bottom-coding, where values above (or below) a certain threshold are set equal to that threshold.

In some cases, when addressing an audience less expert than researchers but still interested in obtaining further insights from the survey (e.g., journalists), it may be appropriate to provide the possibility of querying the microdata database online to generate and visualize statistics beyond those

included in the standard reports. Tools that facilitate these activities on web platforms are readily available.

7. List of recommendations

Accurate measurement of household wealth is crucial for policymakers, researchers, and development practitioners to identify vulnerable populations, design effective poverty reduction strategies, and track progress. Conventional income- or consumption-based measures may fail to capture all the main dimensions of the economic well-being of households. Reliable microdata on wealth can benefit fiscal and monetary policy, as well as other public policies. Therefore, we propose to collect wealth data using household sample surveys. The proposed modules are highly customizable, and the specific strategy needs to be assessed on a case-by-case basis. However, some general recommendations can be formulated.

Strategical considerations and analysis

1. Objectives, resources, and existing data. The scope of wealth data collection should be guided by the projected analytical needs, the socio-economic and legal context, other surveys or data sources in operation with overlapping content, and the costs of various options. Undertaking a preliminary gap analysis informs and guides the choice of topics to collect as well as the reference population and the way data are collected. Although the design of a new survey able to capture household wealth is an option that can be pursued, the added value of statistical information is enriched by the joint availability of data belonging to different related fields, especially income and consumption. This suggests conducting an analysis to evaluate the wealth data gap existing in current country statistics. Having examined many existing household surveys we have found that in many cases a reasonable strategy could be the integration of some new questions into an existing questionnaire. This may require mitigation strategies for the respondent burden. In other cases, linking data from different sources can be a viable option. How this operation could be conducted is something that needs to be assessed on a case-by-case basis. We recommend whenever possible to pursue a joint (or at least connected) survey strategy of income, consumption, and wealth data; the degree of detail on each should be shaped by the analytical needs.

Ensuring complete and relevant data collection

2. Wealth components completeness. It is important that the questionnaire allows an estimation of all the items included in the definition of wealth, collecting both the ownership and the market value. A concrete example of this is shown in sections 4.1 and 4.2. To ensure completeness, all the wealth categories listed in the proposed modules must be included, taking into account the socio-economic context of the country.
3. Context and institutional framework. Analyzing the economic conditions of households requires not only core indicators such as income, consumption, and wealth but also information on broader contextual and institutional factors. Key elements like pension entitlements, access to public services, and informal support networks are essential for understanding wealth accumulation. Moreover, take into account the specific aspects that characterize the country in terms of tenure, formal/informal ownership, and use rights. If these aspects are important, we recommend including specific questions on these issues. In countries where ownership rights tend to follow customary norms, and in those where some vulnerable groups might have difficulties in exercising all rights associated with a property, the collection of the simple reported ownership can be supplemented by a more scrupulous exam of the de facto rights exercised on the assets (see Hasanbasri et al., 2021 and the questions reported in appendix B2).

4. **Supplementary information.** Wealth-connected factors such as financial literacy, risk aversion, and over-indebtedness are critical to explore alongside household wealth. We recommend incorporating questions on these topics into survey questionnaires whenever feasible, as they provide valuable context to complement standard economic data collection. Where respondent burden or practical constraints limit such efforts, alternative strategies, such as Split Questionnaire Design or integration with external data sources, can help ensure comprehensive data availability. Repeated cross-sections or panel surveys may also provide opportunities for occasional modules dedicated to these topics.
5. **Individual ownership and respondent selection.** The analysis of the intra-household allocation of wealth and gender gap can be conducted only if information on individual ownership is collected. This is a field that has been gaining recognition in recent years, and we recommend including the corresponding questions, at least for the most important items. Whenever intra-household distribution is a target, consider using a self- rather than a proxy-respondent approach, which better captures information about more vulnerable individuals within the household (United Nations, 2019).
6. **Sampling.** It is important to adopt a random sampling scheme that includes information useful for identifying the poorest strata of the population and ensures adequate representativeness of the vulnerable population. Where sufficient data are available, oversampling the very poor may be desirable to offset expected nonresponse or to achieve greater coverage of a sometimes highly heterogeneous population. The growing practice in HICs of oversampling the rich to better capture the right tail of the distribution can improve the representation of the full distribution but is not the primary focus from a vulnerability perspective.

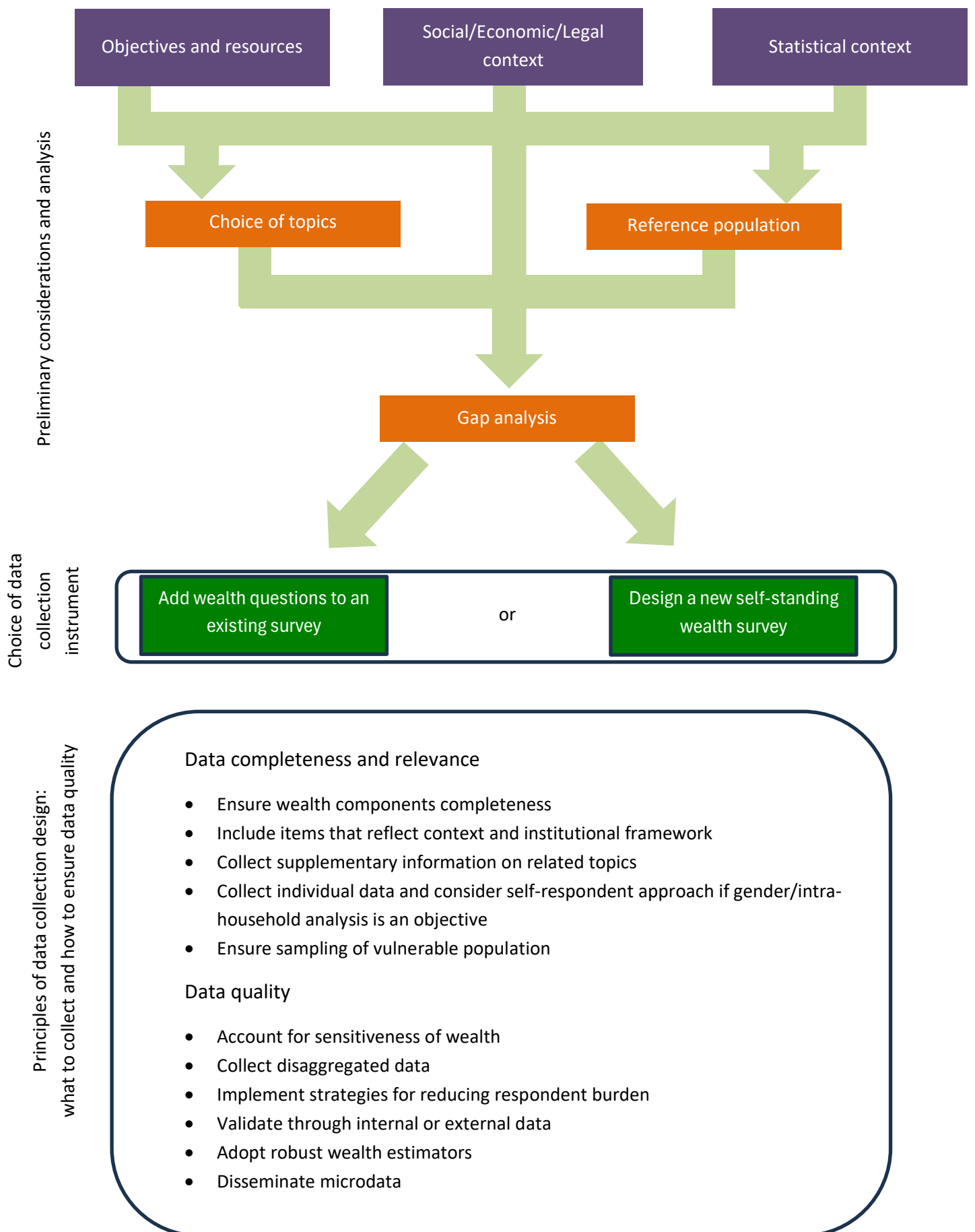
Data quality

7. **Sensitivity.** Wealth is a sensitive topic, so it is crucial to take precautions during data collection. It is important to clearly communicate all strategies implemented to protect respondents' privacy, ensuring that their responses remain confidential and anonymous. This kind of approach is usually favored by a face-to-face mode of interview. In countries where adequate coverage of remote data collection tools can be ensured, alternative modes (such as Computer-assisted voice interviewing, CAVI) may also be considered. Additionally, when inquiring about the value of personal assets, we recommend using specific procedures that reduce the reluctance to provide accurate answers. These methods minimize item non-response and effectively capture as much information as respondents are willing to provide (Section 3.1.4).
8. **Item disaggregation.** Whenever possible, favor a disaggregated data collection approach for the main wealth items (dwellings, lands, debts). This implies making use of filter questions (e.g., "Does your household own any dwelling?"), and building rosters (e.g., "Please list all the dwellings that your household owns") to which small sub-questionnaires are linked. This method ensures higher data quality compared to relying on a single-aggregate question approach.
9. **Validation.** The Guidelines suggest collecting auxiliary information on assets and liabilities (e.g., the size and location of real estate properties). This both reminds the respondent of the characteristics that can affect the asset value and favors a post-survey treatment of incongruous responses. This strategy can also help address the issue of missing values due to the low literacy levels of respondents or the absence of a proper market, with limited transactions.
10. **Treatment and dissemination.** Particular attention should be paid to the distinctive characteristics of wealth that may affect standard procedures, namely the high degree of

distributional asymmetry, the presence of extreme values, and the importance of using robust estimators (e.g., the median).

To summarize the key points discussed in this document, Figure 6.1 presents an overview of the main steps required to obtain high-quality wealth data, how they connect to the external legal, socio-economic, and statistical contexts, and the primary challenges that wealth data collection should address. Suitably adapted to the specific country case, the above suggestions support the production of high-quality wealth estimates. These data are useful for studying household vulnerability, complementing income or consumption data used in traditional poverty analysis, and exploring various other wealth-related topics discussed in this document. Moreover, the convergence toward solutions that are widely accepted at the international level enhances the value of the collected data.

Figure 7.1 – Overview of the main steps recommended to obtain high-quality wealth data



Appendix A – Data collection of wealth items in household surveys

To gain a clear picture of which wealth items are being collected in surveys around the world, we conducted a review of existing national household surveys, selecting in each country the survey with the highest focus on wealth items.⁷⁶ Most LMICs regularly collect income and expenditure household surveys, often covering information about assets and debts. Including these surveys in our analysis allowed us to evaluate the extent to which existing income and expenditure surveys collect useful information for calculating a household's wealth stock.

We reviewed the available household surveys of all countries belonging to Low- and Lower-Middle Income countries and selected for our final database all those for which we could identify a suitable survey with available documentation. Overall, we covered 90% of countries in these two income levels. For High-Income and Upper-Middle-Income countries, we included all those with a population above 20 million for which we could find wealth, income, and/or consumption surveys with available documentation, resulting in 56% of countries from these two higher income brackets included in our analysis. Our final analysis comprised surveys from 149 countries, covering 95% of the world population.⁷⁷

Figures A1 and A2 show the overall coverage respectively in terms of geography and in terms of income groups. 39 countries conduct, or have conducted at least once, wealth-specific surveys, with 31 of them being HICs, 6 Upper-Middle-Income countries, and 2 Lower-Middle-Income countries. Table A1 provides the list of surveys that we have included in this review.

⁷⁶ The review reflects the situation as of 2023.

⁷⁷ In South Asia and Sub-Saharan Africa, we covered about 90% of countries, while in other regions, the share is about 60%.

Figure A1 – Coverage of countries by region

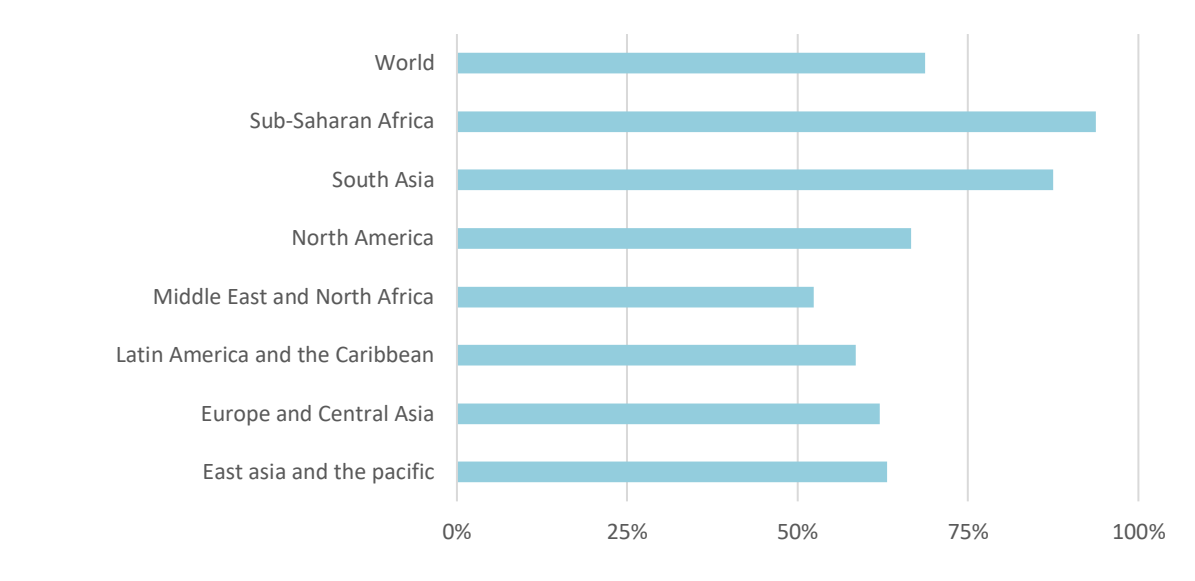
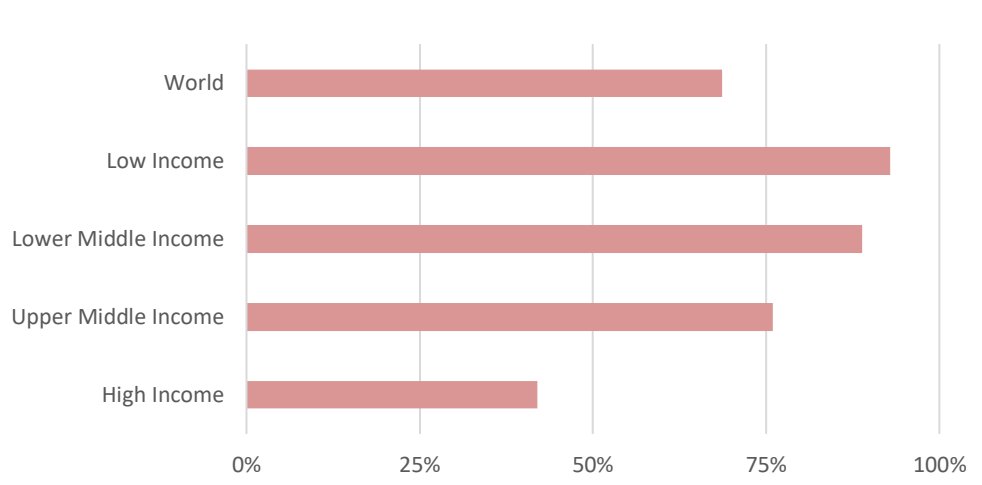


Figure A2 – Coverage of countries and by income group



For the analysis, we created a database of surveys in which we assessed the surveys' contents, particularly whether they collected data on the ownership and value of the main household assets and liabilities, grouped into 10 categories: (i) principal dwelling, (ii) other dwellings, (iii) land, (iv) livestock, (v) business assets (agricultural and non-agricultural), (vi) durables, (vii) bank accounts, (viii) other financial assets, (ix) debts on the principal dwelling and (x) other debts.

For some of these categories⁷⁸ we have also recorded whether the ownership was directly collected through a dedicated question or whether the ownership could be reasonably deduced from other indirect questions; for instance, if a household has received rents from properties in the last 12 months we could indirectly (although imperfectly) identify the ownership; a similar deduction can be made regarding interests received and financial assets, as well as interests paid and debts. For some of the 10 categories, we have gathered data on other characteristics collected, such as the size and/or number of the owned assets, formal and informal ownership rights, the individual or household-level ownership, whenever relevant. Figures A3, A4, and A5 summarize the main results of the review of the 149 countries.

⁷⁸ Principal dwelling, other dwellings, land, bank accounts, other financial assets, and other debts.

Overall, Figure A3 shows that, in surveys conducted in LMICs, the data gap on the prevalence of *ownership* is less pronounced than the data gap on the *value* of wealth items. In fact, asset and liability *ownership* data are collected for several asset and liability categories in many of the analyzed surveys, regardless of income group or type of survey. Information on the *value* of such assets/liabilities shows a different trend between HICs and other income groups. In HICs, value is collected at the same rate as ownership, which is expected as these surveys are mostly wealth-specific surveys. Instead, in the Upper-Middle-, Lower-Middle- and Low-Income Countries, the value of assets/liabilities is much less available compared to information on ownership.

In terms of which specific assets/liabilities are being collected, Figure A4 shows that surveys in LMICs focus on real assets, as virtually all surveys analyzed collect whether households own their principal dwelling, and their ownership of durables; 85% of surveys collect the ownership of land, and 80% collect the ownership of livestock, which in turn is only collected in less than 10% of HIC surveys. As to financial assets, although a few surveys in LMICs collect some form of financial asset and some debts, these are often collected indirectly through questions on the flows associated with such assets and liabilities, and they are usually not systematically covered in the surveys.

As shown in Figure A5, the value of real assets is collected for livestock and durables in a little over 60% of cases; around 50% of surveys collect the value of the principal dwelling and that of business assets, while land value only reaches 43% of our sample. The value of financial assets is rarely collected.

Figure A3 – Distribution of surveys by number of asset/liability categories collected-World

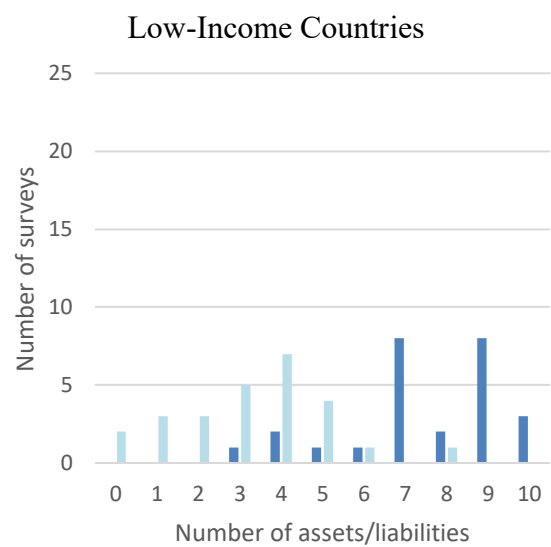
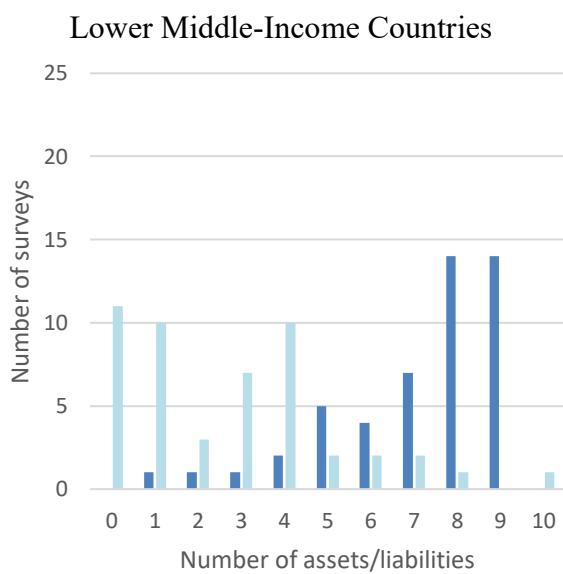
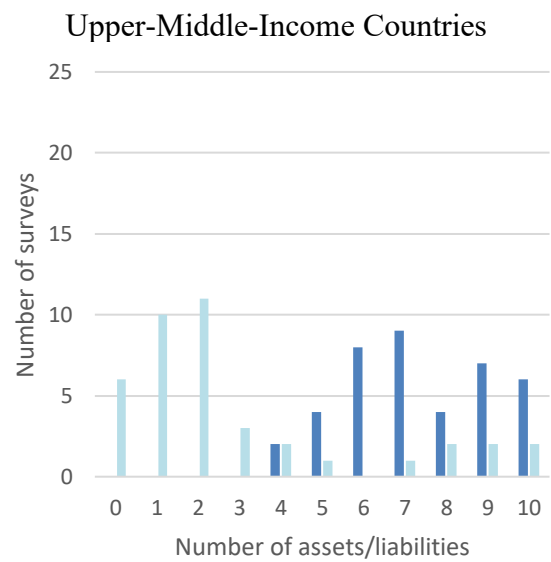
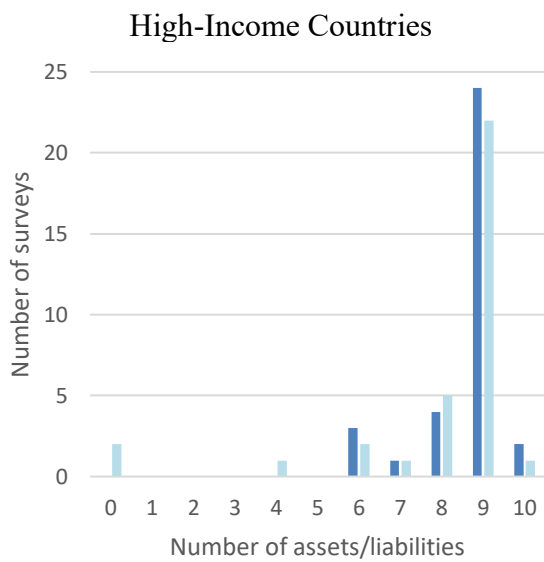


Figure A4 - How often the ownership of specific assets and liabilities is collected across analyzed surveys, by asset/liability category

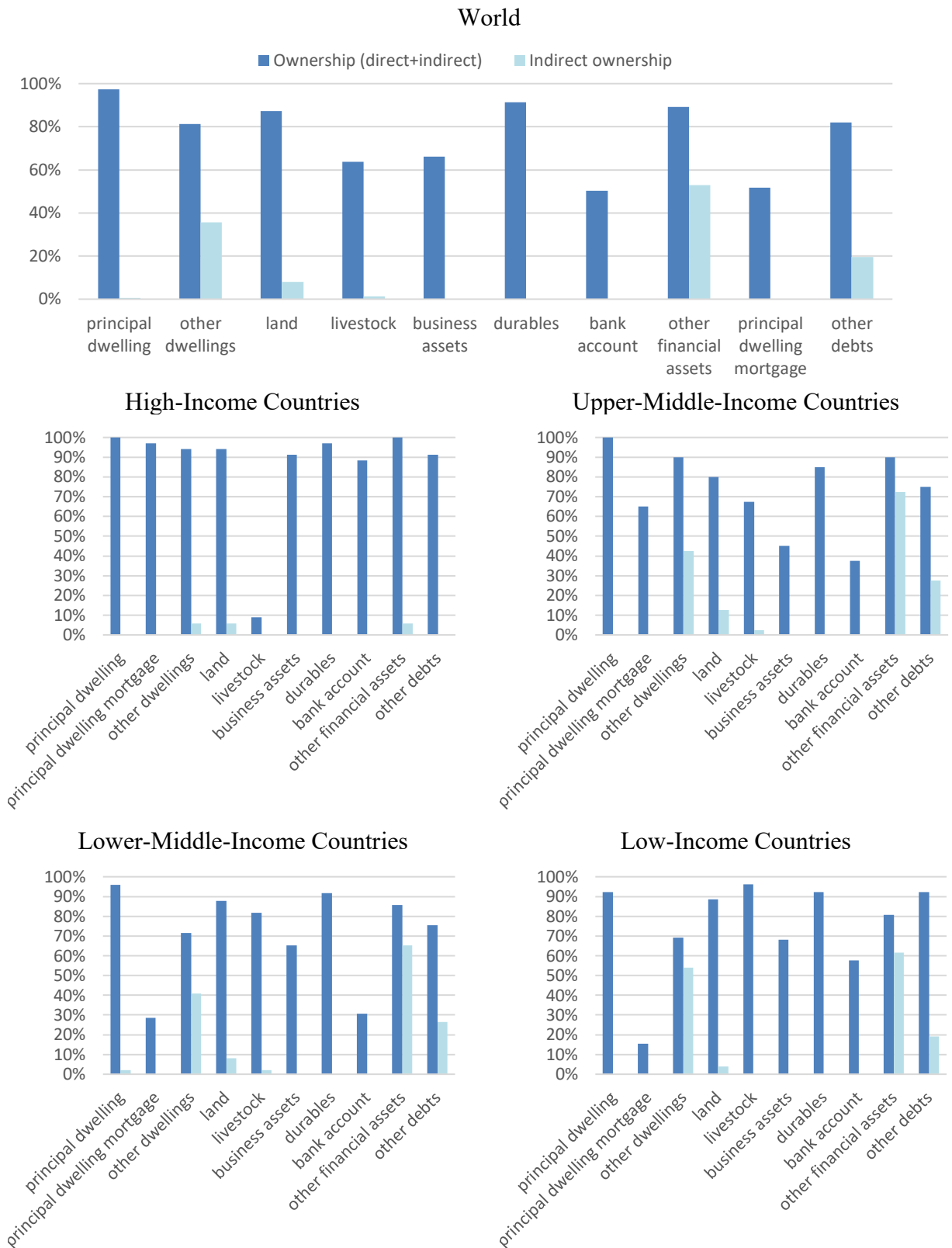


Figure A5 - How often the value of specific assets and liabilities is collected across analyzed surveys, by asset/liability category



Table A1 – List surveys included in the review⁷⁹

#	Income group	Country	Survey Name	Survey Year
East Asia and the Pacific				
1	HI	Australia	Household Income and Wealth	2017-2018
2	HI	Japan	Household Panel Survey	2016
3	HI	Korea, Rep.	Survey of Household Finances and Living Conditions	2022
4	HI	New Zealand	Household Economic Survey	2021-2022
5	UMI	China	China Family Panel Studies	2018
6	UMI	Malaysia	Household Income and Basic Amenities Survey	2022
7	UMI	Marshall Islands	Household Income and Expenditure Survey	2019
8	UMI	Palau	Income and Expenditure Survey	2013-2014
9	UMI	Thailand	Household Socio Economic Survey	2019
10	UMI	Tonga	Household Income and Expenditure Survey	2021
11	UMI	Tuvalu	Household Income and Expenditure Survey	2015-2016
12	LMI	Cambodia	Living Standards Measurement Study - Plus	2019-2020
13	LMI	Indonesia	Indonesia Family Life Surveys	2014-2015
14	LMI	Kiribati	Household Income and Expenditure Survey	2019
15	LMI	Lao PDR	Household Survey	2008
16	LMI	Micronesia, Fed. Sts.	Household Income and Expenditure Survey	2013-2014
17	LMI	Mongolia	Household Socio Economic Survey	2019
18	LMI	Myanmar	Myanmar Living Conditions Survey	2016/2017
19	LMI	Papua New Guinea	Household Income and Expenditure Survey	2009-2010
20	LMI	Philippines	Family Income and Expenditure Survey	2018
21	LMI	Solomon Islands	Household Income and Expenditure Survey	2012-2013
22	LMI	Timor-Leste	Survey of Living Standards	2007
23	LMI	Vanuatu	Household Income and Expenditure Survey	2010
24	LMI	Vietnam	Household Living Standard Survey	2010
Europe & Central Asia				
25	HI	Austria	Household Finance and Consumption Survey (HCFS)	2016-2017
26	HI	Belgium	Household Finance and Consumption Survey (HCFS)	2017
27	HI	Croatia	Household Finance and Consumption Survey (HCFS)	2017
28	HI	Cyprus	Household Finance and Consumption Survey (HCFS)	2017
29	HI	Estonia	Household Finance and Consumption Survey (HCFS)	2017
30	HI	Finland	Household Finance and Consumption Survey (HCFS)	2016
31	HI	France	Household Finance and Consumption Survey (HCFS)	2017-2018
32	HI	Germany	Household Finance and Consumption Survey (HCFS)	2017
33	HI	Greece	Household Finance and Consumption Survey (HCFS)	2018
34	HI	Hungary	Household Finance and Consumption Survey (HCFS)	2017
35	HI	Ireland	Household Finance and Consumption Survey (HCFS)	2018-2019
36	HI	Italy	Household Finance and Consumption Survey (HCFS)	2017

⁷⁹ HI = High-Income UMI = Upper-Middle-Income LMI = Lower-Middle-Income LI = Low-Income.

37	HI	Latvia	Household Finance and Consumption Survey (HCFS)	2017
38	HI	Lithuania	Household Finance and Consumption Survey (HCFS)	2017-2018
39	HI	Luxembourg	Household Finance and Consumption Survey (HCFS)	2018
40	HI	Netherlands	Household Finance and Consumption Survey (HCFS)	2017
41	HI	Poland	Household Finance and Consumption Survey (HCFS)	2017
42	HI	Portugal	Household Finance and Consumption Survey (HCFS)	2017
43	HI	Romania	EU statistics on income and living conditions	2021
44	HI	Slovak Republic	Household Finance and Consumption Survey (HCFS)	2017
45	HI	Slovenia	Household Finance and Consumption Survey (HCFS)	2017
46	HI	Spain	Household Finance and Consumption Survey (HCFS) called EFF in Spain	2017-2018
47	HI	United Kingdom	Wealth and assets survey	2018-2020
48	UMI	Albania	Living Standards Measurement Survey	2012
49	UMI	Armenia	Integrated Living Conditions Survey of Housheolds	2018
50	UMI	Azerbaijan	Household Budget Survey	2005
51	UMI	Bosnia and Herzegovina	Living Standards Measurement Survey	2004
52	UMI	Bulgaria	EU statistics on income and living conditions	2020
53	UMI	Georgia	Household Integrated Survey	2019
54	UMI	Moldova	Household Budget Survey	2017
55	UMI	Russian Federation	Russia Longitudinal Monitoring Survey - Higher School of Economics (RLMS-HSE)	2021
56	UMI	Serbia	Living Standards Measurement Survey	2007
57	UMI	Türkiye	Household Income and Consumption Expenditures Survey	2017
58	LMI	Kyrgyz Republic	Kyrgyz Integrated Sample Household Budget and Labour Survey (Integrated Household Survey)	2013
59	LMI	Tajikistan	Household Budget Survey	2016
60	LMI	Uzbekistan	Household Budget Survey 2017	2017

Latin America & Caribbean

61	HI	Chile	Encuesta Financiera de Hogares	2021
62	HI	Panama	Encuesta de Niveles de Vida	2008
63	HI	Uruguay	Encuesta Financiera de Hogares (EFHU)	2012
64	UMI	Argentina	Encuesta Permanente de Hogares	2022
65	UMI	Belize	Household Expenditure Survey	2008/2009
66	UMI	Brazil	Consumer Expenditure Survey	2017-2018
67	UMI	Colombia	Encuesta de Carga Financiera y Educación Financiera de los Hogares - IEFIC	2017-2018
68	UMI	Costa Rica	Encuesta Financiera de Hogares (ENFIHO)	2022
69	UMI	Dominica	Survey of Living Conditions and Household Expenditure and Income	2007-2008
70	UMI	Dominican Republic	Encuesta Nacional Continua de Fuerza de Trabajo	2021
71	UMI	Ecuador	Encuesta de Condiciones de Vida	2014
72	UMI	Grenada	Survey of Living Conditions and Household Expenditure and Income	2007-2008
73	UMI	Guatemala	Encuesta Nacional de Condiciones de Vida	2014

74	UMI	Guyana	Household Budget Survey	2018
75	UMI	Jamaica	Survey of Living Conditions	2017
76	UMI	Mexico	Encuesta Nacional sobre las Finanzas de los Hogares (ENFIH)	2019
77	UMI	Paraguay	Encuesta Permanente de Hogares Continua	2022
78	UMI	Peru	Encuesta Nacional de Hogares	2023
79	UMI	St. Lucia	Survey of Living Conditions and Household Budgets	2016
80	UMI	Suriname	Survey of Living Conditions	2016
81	LMI	Bolivia	Encuesta de Hogares	2021
82	LMI	El Salvador	Encuesta de Hogares de Propósitos Múltiples	2021
83	LMI	Haiti	Enquete sur les conditions de vie des meneages apres le seisme	2012
84	LMI	Nicaragua	Encuesta de Medicion de Nivel de Vida	2014

Middle East & North Africa

85	HI	Malta	Household Finance and Consumption Survey (HCFS)	2017
86	UMI	Iraq	Household Socio Economic Survey	2012
87	UMI	Jordan	Household Income and Expenditure Survey	2017
88	LMI	Djibouti	Enquête Djiboutienne Auprès des Ménages pour les Indicateurs Sociaux	2017-2018
89	LMI	Egypt, Arab Rep.	Household Income Expenditure and Consumption Survey	2012-2013
90	LMI	Iran, Islamic Rep.	Household Income and Expenditure Survey	2019
91	LMI	Lebanon	Labour Force and Household Living Conditions Survey	2019
92	LMI	Morocco	National Survey on Family Living Standard	2006-2007
93	LMI	West Bank and Gaza	Socio-Economic Conditions Survey	2018
94	LI	Syrian Arab Republic	Household Income and Expenditure Survey	2008-2009
95	LI	Yemen, Rep.	Housheold Budget Survey	2014

North America

96	HI	Canada	Survey of Financial Security (SFS)	2019
97	HI	United States	Survey of Consumer Finances (SCF)	2019

South Asia

98	LMI	Bangladesh	Household Income and Expenditure Survey	2015-2016
99	LMI	Bhutan	Living Standards Survey	2022
100	LMI	India	All-India Debt and Investment Survey	2019
101	LMI	Nepal	Annual Household Survey	2015-2016
102	LMI	Pakistan	Pakistan Social and Living Standards Measurement Survey	2019-2020
103	LMI	Sri Lanka	Household Income and Expenditure Survey	2019
104	LI	Afghanistan	Living Conditions Survey	2016-2017

Sub-Saharan Africa

105	HI	Seychelles	Household Budget Survey	2013
106	UMI	Botswana	Botswana Core Welfare Indicators Survey	2009-2010
107	UMI	Gabon	Enquête Gabonaise pour l'Evaluation et le Suivi de la Pauvreté	2005
108	UMI	Mauritius	Continuous Multi-Purpose Household Survey	2021

109	UMI	Namibia	Household Income and Expenditure Survey	2015-2016
110	UMI	South Africa	National Income Dynamics Study	2017
111	LMI	Angola	Inquérito Sobre Despesas, Receitas e Emprego	2018-2019
112	LMI	Benin	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
113	LMI	Cameroon	Enquête Camerounaise auprès des Ménages	2014
114	LMI	Comoros	Enquête sur les Dépenses de Consommation des Ménages aux Comores	2012-2014
115	LMI	Congo, Rep.	Enquête Congolaise Auprès des Ménages pour le Suivi et l'Evaluation de la Pauvreté	2011
116	LMI	Côte d'Ivoire	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
117	LMI	Eswatini	Household Income and Expenditure Survey	2009-2010
118	LMI	Ghana	Living Standards Survey VII	2016-2017
119	LMI	Kenya	Integrated Household Budget Survey	2015-2016
120	LMI	Lesotho	Continuous Multipurpose Household Survey/ Household Budget Survey	2017-2018
121	LMI	Mauritania	Enquête Permanente sur les Conditions de Vie des ménages	2014
122	LMI	Nigeria	General Household Survey - LSMS-ISA	2018-2019
123	LMI	São Tomé and Príncipe	Household Budget Survey - Inquérito Orçamento Familiar	2010
124	LMI	Senegal	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
125	LMI	Tanzania	National Panel Survey 2019-2020 - Extended Panel with Sex Disaggregated Data (LSMS-plus)	2019-2020
126	LMI	Zimbabwe	Poverty, Income, Consumption and Expenditure Survey	2017
127	LI	Burkina Faso	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
128	LI	Burundi	Enquête sur les conditions de vie des ménages	2020
129	LI	Central African Republic	Enquête Nationale sur la Sécurité Alimentaire	2019
130	LI	Chad	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018
131	LI	Congo, Dem. Rep.	Enquête sur les Conditions de Vie des Ménages	2018
132	LI	Ethiopia	Ethiopia Socio Economic Survey	2018-2019
133	LI	Gambia, The	Integrated Household Survey	2015
134	LI	Guinea	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
135	LI	Guinea-Bissau	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
136	LI	Liberia	Household Income and Expenditure Survey	2016-2017
137	LI	Madagascar	Enquête Périodique auprès des Ménages	2010
138	LI	Malawi	Integrated Household Survey	2019-2020
139	LI	Mali	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
140	LI	Mozambique	Inquérito sobre Orcamento Familiar (IOF)	2014-2015
141	LI	Niger	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019

142	LI	Rwanda	Integrated Household Living Conditions Survey	2016-2017
143	LI	Sierra Leone	Integrated Household Survey	2018
144	LI	Somalia	Somali High Frequency Survey	2017
145	LI	South Sudan	High Frequency Survey	2017
146	LI	Sudan	National Baseline Household Survey	2009
147	LI	Togo	Enquête Harmonisée sur les Conditions de Vie des Ménages	2018-2019
148	LI	Uganda	National Panel Survey (LSMS)	2019-2020
149	LI	Zambia	Living Conditions Monitoring Survey VII (LCMS VII)	2015

Appendix B1 - Basic module

In what follows we present an example of a module to be used for collecting the information needed to define the main items forming the wealth aggregate. It is not designed to be a definitive solution but just to show how the basic elements that constitute wealth can be collected in a household survey.

It does not deal with some aspects that may affect the measurement of wealth in LMICs, like for example informal and undocumented ownership. Moreover, all the aggregates are defined at the household level, without any regard for the intra-household distribution.

The module considers assets and liabilities related to the house of residence as well as any other dwelling, parcel of land, and non-residential building (garage, shop, ...). For all the properties different from the house of residence are collected, one by one, both the values and their use, to classify them into the properties or business wealth category. Data about livestock is collected with some detail, as it is presumably important for many households. The remaining three sections are respectively devoted to the collection of the value of durables and valuables, financial assets, and further debts, these latter with the indication of the purpose and source, for further classification. All the information refers to the time of the interview (but could refer to a specific date).

In Table B1.1 we show an example of how the items collected in the questionnaire can be aggregated to estimate the wealth components.

Table B1.1 - Household wealth: aggregation plan of the basic module

Wealth item	Description	Question number (see the questionnaire)
RA	Real assets	
RA1	Home of residence	A2
RA2	Other dwellings and non-residential buildings	B3 (Business=N)
RA3	Land	C3 (Business=N)
RA4	Business asset	B3 (Business=Y) + C3 (Business=Y) + E2
RA5	Livestock	D3...D10
RA6	Consumer durables, valuables and other real assets	F1 ... F14
FA	Financial assets	
FA1	Cash and deposits	G1+G3+G4+G5
FA2	Government securities and other public or private bonds, shares, investment funds, and other financial assets	G6
FL	Financial Liabilities	
FL1	Debts on properties	A4 + B6 (Business=N) + C6 (Business=N)
FL2	Debts on business investment	B6 (Business=Y) + C6 (Business=Y) + D12 + E4
FL3	Other debts	F16 + H2.1...H2.5
W	Household wealth	RA + FA – FL

Section A – House of residence

<p>A1. What is the ownership status of this housing/dwelling unit?</p> <p>Owner occupied .....01</p> <p>Rented .....02 ► End section</p> <p>Occupied rent free .....03 ► End section</p> <p>...</p> <p>Other (Specify) .....09 ► End section</p>
<p>A2: What is the value for which this property could be sold? |_|_|_|_|_|_|_|_|_|</p><p>(In case the household owns a share): Please consider your household's share, not the value of the entire residence. Consider also the value of the land around your home, with the plants and garage, box, attics, or warehouse directly connected with the main dwelling, but do not consider the value of farm implements, crops or livestock we will talk about later.</p>
<p>A3. Has your household an outstanding debt related to the purchase or maintenance of this property ?</p> <p>Yes.....01</p> <p>No.....02 ► End of section</p>
<p>A4. How much debt remains to be paid on this property? |_|_|_|_|_|_|_|_|_|</p>

Section B – Other dwellings and non-residential buildings

<p>B1. (Apart from your house/apartment) Does your household own (other) dwellings or properties houses, apartments, garages, offices, hotels, other commercial buildings?</p> <p>(Please exclude the units connected with your main dwelling). Yes.....01 No.....02 ► Section D</p>				
<p>B2. How many properties your household owns (consider also those used for business) |_|_|</p>				
<p>If B2 > 1: Let's begin with the first property (the most valuable) and then one by one with the others.</p>	<p>B3. What is the value for which this property could be sold? Please consider also the value of the land around each property, with the plants and the equipment and garage, box, attics, or warehouse directly connected ... but do not consider the livestock we will talk about later</p>	<p>B4. Is this property used for your business?</p>	<p>B5. Has your household an outstanding debt related to the purchase or maintenance of this property</p>	<p>B6. How much debt remains to be paid on this property?</p>
<p>Property 1</p>	<p>|_|_|_|_|_|_|_|_|_|</p>	<p>Y/N</p>	<p>Yes.....01 No.....02 ► Next property/End of section</p>	<p>|_|_|_|_|_|_|_|_|_|</p>
<p>Property 2</p>	<p>|_|_|_|_|_|_|_|_|_|</p>	<p>Y/N</p>	<p>Yes.....01 No.....02 ► Next property/End of section</p>	<p>|_|_|_|_|_|_|_|_|_|</p>
<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>

Section C – Land

<p>C1. Does your household own any parcel of land?</p> <p>Yes .....1</p> <p>No .....2 ► End of section</p>				
<p>C2. How many parcels does your household own? (consider also those used for business) |_|_|</p>				
<p>If C2 > 1: Let's begin with the first property (the most valuable) and then one by one with the others.</p>	<p>C3. What is the value for which this property could be sold?</p> <p>Please consider also the value of the plants and the equipment and buildings directly connected ... but do not consider the livestock we will talk about later</p>	<p>C4. Is this land used for business?</p>	<p>C5. Has your household an outstanding debt related to the purchase or maintenance of the land or to carry out your agricultural business (e.g., in respect of investment, machinery, buildings, land)?</p>	<p>C6. How much debt remains to be paid on this property?</p>
<p>Land 1</p>	<p>|_|_|_|_|_|_|_|_|_|</p>	<p>Y/N</p>	<p>Yes .....1</p> <p>No .....2 ► Next land / End of section</p>	<p>|_|_|_|_|_|_|_|_|_|</p>
<p>Land 2</p>	<p>|_|_|_|_|_|_|_|_|_|</p>	<p>Y/N</p>	<p>Yes .....1</p> <p>No .....2 ► Next land / End of section</p>	<p>|_|_|_|_|_|_|_|_|_|</p>
<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>

Section D – Livestock

<p>D1. Does any member of your household own or keep any animal of the following list? (Provide a country-specific list of animals).</p> <p>Yes.....01 No.....02 ► End section</p>		
<p>If Yes ► D2. Is the livestock owned with someone else outside the household? Yes.....01 ► In the following, refer to the household ownership only No.....02</p>		
List of animals	Does your household own	How much money could you get if you sell all the ... you presently own?
D3. Cattle	Yes .....1 No .....2 ► D4	|_|_|_|_|_|_|_|_|
D4. Sheep	Yes .....1 No .....2 ► D5	|_|_|_|_|_|_|_|_|
D5. Pigs	Yes .....1 No .....2 ► D6	|_|_|_|_|_|_|_|_|
D6. Goats	Yes .....1 No .....2 ► D7	|_|_|_|_|_|_|_|_|
...
D10. Other livestock	Yes .....1 No .....2 ► End of section	|_|_|_|_|_|_|_|_|
<p>D11. Has your household an outstanding debt related to the purchase or maintenance your livestock? Yes.....01 No.....02 ► Question D13 If Yes ► D12. How much debt remains to be paid for the livestock? |_|_|_|_|_|_|_|_|_|</p>		

Section E – Machinery, equipment and inventories

<p>E1. Are you or any household member engaged in an owner/self-employment of a household enterprise?</p> <p>Yes .....1 No .....2 ► End of section</p>
<p>E2. How much do you think your business would be worth if you wished to stop working and sell it? Include any equipment used, stocks, inventories and goodwill but exclude the value of buildings and land and any debts if contracted</p> <p>|_|_|_|_|_|_|_|_|</p>
<p>E3. Has your household an outstanding debt related to your business (e.g., in respect of investment, machinery, other)?</p> <p>Yes .....1 No .....2 ► End of section</p>
<p>E4. How much is the remaining debt that it has to be paid for your business? Please consider only the capital to be repaid and not the interest |_|_|_|_|_|_|_|_|_|</p>

Section F – Consumer durables, valuables and other real assets

Durable good *	Does your household own any ...? If yes ► How many?	How much money do you think you could get if you sell today ?
F1. Motor Car	Yes .....1 ► How many? |_| No .....2 ► F2	
F1.1 Motor car 1		|_|_|_|_|_|_|_|_|_|
F1.2 Motor car 2		|_|_|_|_|_|_|_|_|_|
F1.3 Motor car 3 **		|_|_|_|_|_|_|_|_|_|
F2. Motorbike	Yes .....1 ► How many? |_| No .....2 ► F3	
F2.1 Motorbike 1		|_|_|_|_|_|_|_|_|_|
F2.2 Motorbike 2		|_|_|_|_|_|_|_|_|_|
F2.3 Motorbike 3 **		|_|_|_|_|_|_|_|_|_|
F3. Bike	Yes .....1 ► How many? |_| No .....2 ► F4	
F3.1 Bike 1		|_|_|_|_|_|_|_|_|_|
F3.2 Bike 2		|_|_|_|_|_|_|_|_|_|
F3.3 Bike 3 **		|_|_|_|_|_|_|_|_|_|
F4. Refrigerator ***	Yes .....1 No .....2 ► F5	|_|_|_|_|_|_|_|_|_|
...	...	_ _ _ _ _ _ _ _ _
F11. Computer/laptop	Yes .....1 No .....2 ► F12	|_|_|_|_|_|_|_|_|_|
F12. Smartphone, mobile phone	Yes .....1 No .....2 ► F13	|_|_|_|_|_|_|_|_|_|
F13. Jewelry, gold, silver, valuable coins, fine dishes, embroidered sheets, and other items used for the bride's trousseau, artwork, antiques	Yes .....1 No .....2 ► F14	|_|_|_|_|_|_|_|_|_|
F14. Tradable licenses (i.e., taxi drivers), copyright, ...	Yes .....1 No .....2 ► F15	|_|_|_|_|_|_|_|_|_|

* Provide a country-specific list of durables.

** If more than 3 items, provide the total value of the remaining assets

*** If more than 1 items, provide the total value of the assets

<p>F15. Has your household an outstanding debt related to the purchase of the durables and valuables owned? Yes .....1 No .....2 ► End section</p> <p>If Yes ► F16. How much is the remaining debt that it has to be paid for your durables and valuables? Please consider only the capital to be repaid and not the interest |_|_|_|_|_|_|_|_|_|_|</p>

Section G – Financial assets

G1. What sum of money does your household usually have at home to meet normal needs and as savings? |_|_|_|_|_|_|_|_|_|_|		
G2. Does any member of your household have an account at the bank or at another formal or informal financial institution where your household savings are deposited? Yes .....1 No .....2 ► G6		
Does your household own ...	Do your household or any household member(s) own ...?	How much is the value of the ... owned
G3. Savings deposited at a bank	Yes .....1 No .....2 ► G4	|_|_|_|_|_|_|_|_|_|
G4. Savings deposited at informal savings program/club (i.e., ROSCAs)	Yes .....1 No .....2 ► G5	|_|_|_|_|_|_|_|_|_|
G5. Savings deposited at a Mobile company	Yes .....1 No .....2 ► G6	|_|_|_|_|_|_|_|_|_|
G6. Government securities and other public or private bonds, investment funds, shares, and securities issued by non-residents, or other assets (e.g., life insurance funds)	Yes .....1 No .....2 ► Section H	|_|_|_|_|_|_|_|_|_|

Section H – Other debts

H1. Excluding the debts contracted for the purchase or the maintenance of real estate properties, to carry out your business, to buy or manage livestock or to buy durables (declared above), has your household any (further) outstanding debts (owing to other households or institutions)? Yes .....1 No .....2 ► End section			
H2. Please, for each (further) debt you have, can you tell ...			
Debt n.	... what was the main reason for applying for this loan? Basic needs of family .....1 Education.....2 Providing a dowry to a member .....3 Celebrations and social events .....4 Paying other debts .....5 Emergencies (injury, fire, theft) .....6 Travel .....7 Other purposes .....8	... how much money is still owing on this loan today (including interest)?	... what is the main source of funding for this loan/ debt? Relatives 1 Friends/neighbours 2 Moneylender 3 Traders 4 Landlord 5 Employer 6 Bank 7 Store / Retailer 8 NGO 9 ROSCA 10 Other 11
H2.1	|_|_|	|_|_|_|_|_|_|_|_|_|	|_|_|
H2.2	|_|_|	|_|_|_|_|_|_|_|_|_|	|_|_|
H2.3	|_|_|	|_|_|_|_|_|_|_|_|_|	|_|_|
H2.4	|_|_|	|_|_|_|_|_|_|_|_|_|	|_|_|
H2.5	|_|_|	|_|_|_|_|_|_|_|_|_|	|_|_|

Appendix B2 - Extended module

The module included in this appendix collects the information needed to define the main items forming the wealth aggregate and several other aspects such as informal ownership, asking questions about the legal documents and, if they are missing, the rights attached to the properties. According to the United Nations (2019), the right to sell and to bequeath are the two main indicators signaling informal ownership. Other rights (i.e., to rent, to use the asset as collateral, to make improvements) could be considered if particular conditions occur in the analyzed country. The module then captures who has the rights within the household, and if the rights can be exercised alone or jointly with others (with spouse or others).

The owners with a legal document skip the questions on the rights, under the assumption that formal ownership always implies the mentioned rights. In countries where in some circumstances there are restrictions on property rights, it can be useful for their data collection also in case of formal ownership is assessed.

Also, for a better definition of properties informally held, the information about the risk perceived by households of a sudden loss is asked. Information on the origin of the asset and possible link with the dowry is collected.

Some attention is needed for the data collection of information about the land around (and beneath) the house of residence. As it can be difficult to separate the value of the dwelling from that of the land on which it is built, the evaluation of the property (and that of the correspondent liability) is done by asking the respondent to provide a unique value to the whole property used for residence. However, as many characteristics of the land can be of interest, some of the questions of the land module can also be asked for the land around the main residence, as long as double counting is avoided. Where the tenure of the land can be reasonably separated from that of the house of residence, the related questions can be asked with reference to land alone.

This module includes not only questions on the value of the durables held but also some other information, to allow an estimation of depreciation models that can be useful for the consumption aggregate and for the imputation of missing values. Some further assets are also considered (to be included only in case they are important in the economic context), for example, the tradable licenses (i.e., for taxi drivers), some forms of intellectual property (i.e., copyright), individual pension products to supplement the state pension, up to big sellers vouchers and crypto assets. These are just examples of possible extensions of the data collection that can be adapted to the most frequent conditions in the considered country. The aggregation plan is provided in Table 5.2.

All the most significant wealth items are collected with an individual breakdown, to allow the analysis of the intra-household distribution of wealth and the gender gap. In the module, the information about individual ownership and values is reported by a single respondent in the household (the most knowledgeable member). This is a solution that can accommodate the informative needs about individual wealth in social contexts where it is limited the presence of hidden assets, i.e., assets that are not known by every member of the household,⁸⁰ and the ownership of assets is largely defined both in terms of formal and substantial attribution.

Whereas, instead, these assumptions do not hold there can be a significant bias in collecting data on ownership and values of assets reported by a single respondent and the literature suggests proceeding with a more reliable and costly approach. The UN Guidelines on Individual Asset Ownership (United Nations, 2019) recommend collecting self-reported rather than proxy data on asset ownership but does not recommend the simultaneous interview of the members, due to the complexity

⁸⁰ According to the United Nations (2019), the frequency of hidden assets is significant for financial assets and liabilities only.

of the procedure needed to achieve the target. The most recent LSMS+ Program (Hasanbasri et al., 2021) suggests conducting individual independent interviews of all the adults within the households, ensuring as much as possible a gender match between interviewers and respondents. However, the increase in terms of respondent burden and organizational complexity of such an approach can be significant. According to a specific experiment conducted in Malawi, cited in the same paper, the adoption of the multiple-interview approach implied an increase in the average time spent by the field team of about one-third. It should also be considered that the discrepancies arising from multiple responses on the same asset can reveal the presence of uncertain ownerships, which can be interesting to analyze. On the other hand, the discrepancies need to be reconciled for the analysis of many standard indicators, requiring further treatments in terms of analysis (as to the strategies for reconciling the discrepancies, see United Nations, 2019, pp. 173-178).

Table B2.1 - Household wealth: aggregation plan of the extended module

Wealth item	Description	Question number (see the questionnaire)
RA	Real assets	
RA1	Home of residence*	$A4 * A10$ (if Owner occupied) + Value of use rights held
RA2	Other dwellings and non-residential buildings*	$B7 * B11$ (Business=N) + Value of use rights held - Value of use rights granted
RA3	Land*	$C7 * C14$ (Business=N) + Value of use rights held - Value of use rights granted
RA4	Business asset*	$B7 * B11$ (Business=Y) - $+ C7 * C14$ (Business=Y) + $E3 * E8$ + Value of use rights held
RA5	Livestock	D3 ... D10
RA6	Consumer durables, valuables and other real assets	F1 ... F12+ F16 + F18
FA	Financial assets	
FA1	Cash and deposits	G1 + G3 + G4 + G5 + G6
FA2	Government securities and other public or private bonds	G7 + G8
FA3	Shares, investment funds and other financial assets	G9 + G10 + G12 + G14
FL	Financial Liabilities	
FL1	Debts on properties	$A14 + B14$ (Business=N) + $C18$ (Business=N)
FL2	Debts on business investment	$B14$ (Business=Y) + $C18$ (Business=Y) + $D12 + E3 * (E10 + E12 + E14) + H2.1 ... H2.5$ (Business=Y)
FL3	Other debts	$F14 + H2.1 ... H2.5$ (Business=N) + $E12$
W	Household wealth	$RA + FA - FL$

* The value of the use rights held on the home of residence, other dwellings, or land are usually derived through models based on various information (the value of the property or its imputed rent, the age of the owner, or the time for which it is expected the owner will benefit from the use, an interest rate, ...). Once estimated, these quantities are included among the "Other real assets". This case is the only relevant when the use right is provided by the government. If one wants also to deal with the case of use rights provided by households to other households, one will also need to compute the value of use rights granted by the interviewed household and subtract it from the full value of its properties (only RA2 and RA3 are considered, as RA1 and RA4 are, by definition, used by the interviewed household itself). This estimation may require some information both on the use of the owned properties and on the owner of use rights. If the home of residence is also used for business a share (say 50%) of its value can be transferred correspondingly from RA1 to RA4.

The value of land can be distinguished between agricultural and non-agricultural land, as this characteristic is recorded in the questionnaire at the level of single parcels.

Section A – House of residence

<p>A1. Characteristics of the house of residence in terms of</p> <ul style="list-style-type: none"> • Location (region/province; center urban, outskirts urban, rural; ...) • Services around (schools, hospitals, ...) • Type of dwelling, material used • Dimension (squared meters; land around; rooms, ...) • Facilities (toilette, water, electricity, ...) • How much would it cost to construct a dwelling like this today? • Land around the house • Rent paid (if rented) ... 	<p>Questions useful for editing, imputation of missing values, analysis</p>
<p>A2. What is the ownership status of this housing/dwelling unit?</p> <p>Owner occupied .....01</p> <p>Holds use rights (i.e., usufruct and other informal ownerships) ...02</p> <p>Rented .....03 ▶ End section</p> <p>Occupied rent free .....03 ▶ End section</p> <p>...</p> <p>Other (Specify) .....09 ▶ End section</p>	<p>Household ownership and other cases of informal property</p>
<p>A3. Is your household the sole owner/use rights holder of the dwelling?</p> <p>Yes.....01 ▶ Question A5</p> <p>No.....02</p> <p style="padding-left: 40px;">If Yes ▶ A4. What percentage does your household own/hold use rights? |_|_|%</p>	<p>Shared property</p>
<p>A5. Who are the member owners/use rights holders of this dwelling, and which are the corresponding shares:</p> <p>(Owner IDs) ____ Shares |_|_| |_|_| |_|_| |_|_|</p>	<p>Individual reported ownership</p>
<p>A6. Is there a title deed or document for this dwelling?</p> <p>Yes 1</p> <p>No 2 ▶ Question A9A</p> <p>Don't Know 3 ▶ Question A9A</p> <p>Refusal 4 ▶ Question A9A</p> <p style="padding-left: 20px;">If Yes ▶ A7. What kind of document is it?</p> <p style="padding-left: 40px;">Registered deed 1</p> <p style="padding-left: 40px;">Unregistered deed 2</p> <p style="padding-left: 40px;">Invoice or sales receipt 3</p> <p style="padding-left: 40px;">Other 4</p> <p style="padding-left: 20px;">If Yes ▶ A8. Whose names are on the document as owners?</p> <p style="padding-left: 40px;">(Codes on the roster) ____</p> <p style="padding-left: 20px;">If No ▶ A9A. Has your household the right* to sell it?</p> <p style="padding-left: 40px;">If Yes ▶ A9A1. Who has this right (IDs) ____</p> <p style="padding-left: 60px;">A9A2. Alone or jointly with others (A/J)? ____</p> <p style="padding-left: 60px;">A9A3. With your spouse (Y/N)? ____</p> <p style="padding-left: 20px;">If No ▶ A9B. Has your household the right* to bequeath it?</p> <p style="padding-left: 40px;">If Yes ▶ A9B1. Who has this right (IDs) ____</p> <p style="padding-left: 60px;">A9B2. Alone or jointly with others (A/J)? ____</p> <p style="padding-left: 60px;">A9B3. With your spouse (Y/N)? ____</p> <p>* Even If with permission from someone else</p>	<p>Ownership rights</p>

<p>A10. For how much could a dwelling like this be rented per month? |_|_|_|_|_|_|_|_|_|_|</p> <p>A11a. (If owns): What is the value for which this dwelling could be sold? |_|_|_|_|_|_|_|_|_|_|</p> <p>Consider also the value of the land around your home, with the plants and garage, box, attics, or warehouse directly connected with the main dwelling, but do not consider the value of livestock we will talk about later. (In case the household owns a share): Please consider the value of the entire residence, not just your/your household's share.</p>	<p>Value full property</p>
<p>A11b. (If holds use rights): What is the value for which your use rights could be sold? |_|_|_|_|_|_|_|_|_|_|</p> <p>(In case the household holds a share): Please consider the value of the entire use rights, not just your household's share).</p> <p>A12. (If holds use rights) For how long will you still hold the use rights over this property? Limited number of years 1 Lifetime 2 ► Question A14</p> <p>A13. (If holds use rights) How many years..... |_|_|</p>	<p>Value use rights</p>
<p>A14. How likely are you to involuntary lose ownership or use rights to this property in the next 5 years? Not at all likely..... 1 Slightly likely..... 2 Yes, moderately likely 3 Yes, very likely 4 Yes, extremely likely..... 5</p>	<p>Tenure security</p>
<p>A15. Has your household an outstanding debt for the purchase or the maintenance of this property? (If the property is shared with other households – see A3 - please refer to the debit of your household only) Yes.....01 No.....02 ► Question A17</p> <p>If Yes ► A16. How much debt remains to be paid on this property? |_|_|_|_|_|_|_|_|_|_|</p>	<p>Debts</p>
<p>A17. Is the house of residence also used for business by you or someone else in your household? Yes.....01 No.....02</p>	<p>Use of the property</p>

<p>A18. In which year did you acquire the property or the use of the house? _ _ _ _ </p> <p>A19. How did you acquire the property or the use of the house?</p> <p>Purchased 1 ► End section</p> <p>Inherited 2 ► End section</p> <p>Received as a gift 3</p> <p>Inherited the parcel on which it was built by my household 4 ► End section</p> <p>Received as a gift the parcel on which it was built 5</p> <p>Purchased the parcel on which it was built by my household 6 ► End section</p> <p>Acquired for free the parcel on which it was built 7 ► End section</p> <p>Other 8 ► End section</p> <p>If received as a gift ► A20. Who was the donor?</p> <p>Parents of the reference person 1</p> <p>Other relatives of the reference person 2</p> <p>Parents of the spouse 3</p> <p>Other relatives of the spouse 4</p> <p>Other 5</p> <p>A21. Was the donation done at the time of the marriage (dowry)?</p> <p>Yes.....01</p> <p>No.....02</p>	<p>The origin of wealth (inheritance, dowry)</p>
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Section B – Other dwellings and non-residential buildings

<p>B1. Does your household use, own or hold use rights any (other) property like vacation homes, shops and other properties used for professional purposes, garage, and other non-residential buildings? (Do not include the properties connected with your main dwelling). Yes.....01 No.....02 ► End section</p> <p>If Yes ► B2. How many units your household uses, owns or holds use rights? _ _ </p>	<p>Household ownership and other cases of informal property</p>
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For EVERY property used, owned or held use rights one by one (excluded those connected with the main residence)

<p>B3. Characteristics of the property in terms of</p> <ul style="list-style-type: none"> • Location (region/province; ...) • Type of property (dwelling, shop, garage, ...) • Dimension (unit of measure and dimension) • Facilities (water, electricity, ...) • Rent (if rented) • Imputed rent (if used) • ... 	<p>Questions useful for editing, imputation of missing values, analysis</p>
<p>B4. Does your household use, own or hold use rights this property? Uses 1 ► Next property Owns..... 2 Holds use rights 1 ► Question B13</p>	<p>Household ownership</p>
<p>B5. What is the current use of this property? Own use for professional work, or family business 1 Given out in usufruct 2 Rented out 3 Unoccupied 4 Used free of charge by others 5 ... Other (Specify)..... 6</p>	<p>Use of the property</p>
<p>B6. Is your household the sole owner/use rights holder of the property? Yes.....01 ► Question B8 No.....02</p> <p>If Yes ► B7. What percentage does your household own/holds use rights? |_|_|%</p>	<p>Shared property</p>
<p>B8. Who are the member owners/use rights holders of this property, and which are the corresponding shares: (Owner IDs) _ _ _ _ Shares |_|_| |_|_| |_|_| |_|_|</p>	<p>Individual reported ownership</p>

<p>B9. Is there a title deed or document for this property? Yes 1 No 2 ► Question B12A Don't Know 3 ► Question B12A Refusal 4 ► Question B12A</p> <p>If Yes ► B10. What kind of document is it? Registered deed 1 Unregistered deed 2 Invoice or sales receipt 3 Other 4</p> <p>If Yes ► B11. Whose names are on the document as owners? (Codes on the roster) _____</p> <p>If No ► B12A. Has your household the right* to sell it? If Yes ► B12A1. Who has this right (IDs) _____ B12A2. Alone or jointly with others (A/J)? _____ B12A3. With your spouse (Y/N)? _____</p> <p>If No ► B12B. Has your household the right* to bequeath it? If Yes ► B12B1. Who has this right (IDs) _____ B12B2. Alone or jointly with others (A/J)? _____ B12B3. With your spouse (Y/N)? _____</p> <p>* Even If with permission from someone else</p>	Ownership rights
<p>B13A. If not rented: For how much could a parcel like this in this neighborhood be rented per month? |_|_|_|_|_|_|_|_|_|_|</p> <p>B13B. If rented: For how much is this property rented per month? |_|_|_|_|_|_|_|_|_|_|</p> <p>B14. (If owns): What is the value for which this property could be sold? |_|_|_|_|_|_|_|_|_|_| (In case the household owns a share): Please consider the value of the entire property, not just your household's share).</p>	Value full property
<p>B15. (If given out in usufruct) For how long will you still grant the use rights over this property? Limited number of years 1 ► Question B16a Lifetime of the usufructuary 2 ► Question B16b</p> <p>B16a. How many years left?..... |_|_|_|</p> <p>B16b. How old is the use right holder? ..... |_|_|_|</p>	Value of bare property
<p>B17. (If holds use rights): What is the value for which your use rights could be sold? |_|_|_|_|_|_|_|_|_|_| (In case the household owns a share): Please consider the value of the entire property, not just your household's share).</p> <p>B18. (If holds use rights) For how long will you still hold the use rights over this property? Limited number of years 1 Lifetime 2 ► Question B20</p> <p>B19. (If holds use rights) How many years ..... |_|_|_|</p>	Value use rights

<p>B20. How likely are you to involuntary lose ownership or use rights to this property in the next 5 years?</p> <p>Not at all likely..... 1 Slightly likely..... 2 Yes, moderately likely 3 Yes, very likely 4 Yes, extremely likely..... 5</p>	<p>Tenure security</p>
<p>B21. Has your household an outstanding debt related to the purchase or maintenance of this property ? (IF the property is shared with other households – see B7 - please refer to the debit of your household only)</p> <p>Yes.....01 No.....02 ► Question B23 If yes ► B22 How much debt remains to be paid on this property? |_|_|_|_|_|_|_|_|</p>	<p>Debts</p>
<p>B23. In which year did you acquire this property or the use of this property? |_|_|_|_|</p> <p>B24. How did you acquire this property or its use?</p> <p>Purchased..... 1 ► End section Inherited 2 ► End section Received as a gift 3 Other 4 ► End section</p> <p>If received as a gift ► B25. Who was the donor?</p> <p>Parents of the reference person 1 Other relatives of the reference person 2 Parents of the spouse 3 Other relatives of the spouse 4 Other 5</p> <p>B26. Was the donation done at the time of the marriage (dowry)? Yes.....01 No.....02</p>	<p>The origin of wealth (inheritance, dowry)</p>

Section C – Land

<p>C1. Does your household use, own or hold use rights any parcel of land? (Do not include the parcel connected with your main dwelling).</p> <p>Yes.....01 No.....02 ► End section</p> <p>If Yes ► C2. How many parcels your household uses, owns or holds use rights? _ _ </p> <p>If the house of residence has a parcel of land around (see question A1), submit the questions that can be of interest of the following module also for it (i.e., the value of the property and of the debt are already included in section A).</p>	<p>Household ownership and other cases of informal property</p>
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For EVERY parcel of land, one by one (included that around the main residence)

<p>C3. Characteristics of the land in terms of</p> <ul style="list-style-type: none"> • Location (region/province; ...) • Type of land (agricultural vs non-agricultural land, forestry, ...) • Dimension (unit of measure and dimension) • Facilities (irrigation, ...) • Tenure system (Private, public, common property, ...) • Rent (if rented) • ... 	<p>Questions useful for editing, imputation of missing values, analysis</p>
<p>C4. Does your household use, own or hold use rights this parcel?</p> <p>Uses 1 ► Next parcel Owns..... 2 Holds use rights 3</p>	<p>Household ownership</p>
<p>C5. What is the current use of this property?</p> <p>Own use for professional work, or family business 1 Given in usufruct 2 Rented out 3 Unoccupied 4 Used free of charge by others 5 ... Other (Specify)..... 6</p>	<p>Use of the property</p>
<p>C6. Is your household the sole owner/use rights holder of the land?</p> <p>Yes.....01 ► C8 No.....02</p> <p>If Yes ► C7. What percentage does your household own/holds use rights? |_|_|%</p>	<p>Shared property</p>
<p>C8. Who are the member owners/use rights holders of this parcel, and which are the corresponding shares: (Owner IDs) _ _ _ _ _ Shares |_|_| |_|_| |_|_| |_|_|</p>	<p>Individual reported ownership</p>

<p>C9. Is there a title deed or document for this parcel? Yes 1 No 2 ► Question C12A Don't Know 3 ► Question C12A Refusal 4 ► Question C12A</p> <p>If Yes ► C10. What kind of document is it? Registered deed 1 Unregistered deed 2 Invoice or sales receipt 3 Other 4</p> <p>If Yes ► C11. Whose names are on the document as owners/use rights holders? (Codes on the roster) _____</p> <p>If No ► C12A. Has your household the right* to sell it? If Yes ► C12A1. Who has this right (IDs) _____ C12A2. Alone or jointly with others (A/J)? _____ C12A3. With your spouse (Y/N)? _____</p> <p>If No ► C12B. Has your household the right* to bequeath it? If Yes ► C12B1. Who has this right (IDs) _____ C12B2. Alone or jointly with others (A/J)? _____ C12B3. With your spouse (Y/N)? _____</p> <p>* Even If with permission from someone else</p>	Ownership rights
<p>C13. Are there any structures or buildings or houses on this parcel? Yes.....01 ► Specify _____ No.....02</p> <p>C14. For how much could a parcel like this in this neighborhood be rented per month? |_|_|_|_|_|_|_|_|_|_|</p> <p>C15. (if owns) What is the value for which this property could be sold? |_|_|_|_|_|_|_|_|_|_| Include also buildings and structures, if any. Consider also the value of the plants and the equipment, but do not consider the value of livestock we will talk about later. (In case the household owns a share, please consider the value of the entire parcel, not just your/your household's share).</p>	Value full property
<p>C16. (If given out in usufruct) For how long will you still grant the use rights over this property? Limited number of years 1 ► Question C17a Lifetime of the usufructuary 2 ► Question C17b</p> <p>C17a. How many years left? ..... |_|_|_| C17b. How old is the use right holder? |_|_|_|</p>	Value bare property

Section D – Livestock

<p>D1. Does any member of your household own or keep any animal of the following list? (*)</p> <p>Yes.....01 No.....02 ► End section</p>	Household ownership
<p>If Yes ► D2. Is the livestock owned with someone else outside the household? Yes.....01 ► In the following, refer to the household ownership only No.....02</p>	Shared property

(*) Provide a country-specific list of animals.

List of animals (*)	Does your household own (***)	Number (***)	Specify the owners' IDs (***)	How much money could you get if you sell all the ... you presently own? (***)
D3. Cattle	Yes .....1 No .....2 ► D4	|_|_|_|	|_|_|_|_|_|	|_|_|_|_|_|_|_|
D4. Sheep	Yes .....1 No .....2 ► D5	|_|_|_|	|_|_|_|_|_|	|_|_|_|_|_|_|_|
D5. Pigs	Yes .....1 No .....2 ► D6	|_|_|_|	|_|_|_|_|_|	|_|_|_|_|_|_|_|
D6. Goats	Yes .....1 No .....2 ► D7	|_|_|_|	|_|_|_|_|_|	|_|_|_|_|_|_|_|
...
D10. Other livestock	Yes .....1 No .....2 ► D11	|_|_|_|	|_|_|_|_|_|	|_|_|_|_|_|_|_|

(*) If useful for a better estimation, the list of animals can be divided by sex, age, breed ...

(**) Adding questions on recent transactions (i.e., 3-12 months purchases and sales) can help in deriving unit values for valuing the stock.

(***) If the livestock is owned with someone outside the household, consider only the household share.

<p>D11. Has your household an outstanding debt related to the purchase or maintenance of your livestock?</p> <p>Yes.....01 No.....02 ► Question D13</p> <p>If Yes ► D12. How much debt remains to be paid on the livestock? _ _ _ _ _ _ _ </p>	Debts
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D13. Have you ever received as inheritance or gift the property or the use of livestock?

Yes.....01

No.....02 ► End section

If Yes ► D14. Did you receive livestock as inheritance, gift or both?

Inheritance 1 ► End section

Gift 3

Both 4

If received as a gift ► D15. Who was the donor of the gift?

Parents of the reference person 1

Other relatives of the reference person 2

Parents of the spouse 3

Other relatives of the spouse 4

Other 5

(More answers allowed) |_ |_ |_ |_

D16. Was the donation done at the time of the marriage
(dowry)?

Yes.....01

No.....02

The origin of wealth
(inheritance, dowry)

Section E – Machinery, equipment and inventories

<p>E1. Are you or any household member engaged in an owner/self-employment of a non-agricultural household enterprise? Yes .....1 No .....2 ► End section</p>	Household ownership
<p>If yes E2. How many activities of this kind your household has? |_|_|</p>	

For every non-agricultural business

<p>E2. Is your household the sole owner of this enterprise? Yes.....01 ► Question E4 No.....02</p> <p>If Yes ► E3. What percentage does your household own? |_|_|%</p>	Shared property
<p>E5. Who are the member owners of this enterprise, and which are the corresponding shares: (Owner IDs) ___ ___ Shares |_|_| |_|_| |_|_| |_|_|</p>	Individual reported ownership
<p>E6. What is the legal form of this business?</p> <p>Self-employed</p> <ul style="list-style-type: none"> - Freelancer. ....1 - Sole trader.....2 - Own-account worker (i.e., craft worker, etc.) .....3 <p>Partnerships</p> <ul style="list-style-type: none"> - Informal association.....4 - Limited partnership .....5 - General partnership .....6 <p>Limited companies</p> <ul style="list-style-type: none"> - Partnership limited by shares .....7 - Limited liability company.....8 - Joint stock company .....9 - Cooperatives .....10 	Ownership rights
<p>E7. How many workers are there in the business, including owner(s)? |_|_|_|</p> <p>E8. How much do you think your business would be worth if you wished to stop working and sell it? Include any equipment used, stocks, inventories and goodwill but exclude the value of buildings, land and any debts if contracted. (In case the household owns a share): Please consider the value of the entire business, not just your/your household's share.</p> <p style="text-align: center;">|_|_|_|_|_|_|_|</p>	Value
<p>E9. Has your household an outstanding debt related to your business (e.g., in respect of investment, machinery, other)? (If the business is shared with other households – see E3 - please consider the value of the entire debit, not just your/your household's share) Yes .....1 No .....2 ► Question E11</p> <p>If Yes E10. How much debt remains to be paid for your business? Please consider only the capital to be repaid and not the interest |_|_|_|_|_|_|_|</p>	Debts for investments
<p>E11. Has your household any outstanding trade credits? (If the business is shared with other households – see E3 - please consider the value of the entire credit, not just your/your household's share) Yes .....1 No .....2 ► Question E13</p> <p>If yes E12. Specify the amount |_|_|_|_|_|_|_|</p>	Trade credits
<p>E13. Has your household any outstanding trade debts? (If the business is shared with other households – see E3 - please consider the value of the entire debit, not just your/your household's share) Yes .....1 No .....2 ► Question 14</p> <p>If yes E14. Specify the amount |_|_|_|_|_|_|_|</p>	Trade debts

<p>E14. In which year did your household start this business? _ _ _ _ </p> <p>E15. Have your household received as inheritance or gift the property of the equipment used for this business? Yes.....01 No.....02 ► End section</p> <p> If Yes ► E16. Did you receive the equipment used for this business as inheritance or gift? Inheritance 1 ► End section Gift 3</p> <p> If received as a gift ► E17. Who was the donor? Parents of the reference person 1 Other relatives of the reference person 2 Parents of the spouse 3 Other relatives of the spouse 4 Other 5</p> <p>E18. Was the donation done at the time of the marriage (dowry)? Yes.....01 No.....02</p>	<p>The origin of wealth (inheritance, dowry)</p>
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Section F – Consumer durables, valuables and other real assets

Durable good *	Does your household own any ...? If yes ► How many?	Initial cost	Year of acquisition	How much money do you think you could get if you sell today ?	How did your household acquire this good? (***)
F1. Motor Car	Yes .....1 ► N. |_| No .....2 ► F2				
F1.1 Motor car 1	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F1.2 Motor car 2	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F1.3 Motor car 3 **	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F2. Motorbike	Yes .....1 ► N. |_| No .....2 ► F3				
F2.1 Motorbike 1	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F2.2 Motorbike 2	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F2.3 Motorbike 3 **	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F3. Bike	Yes .....1 ► N. |_| No .....2 ► F4				
F3.1 Bike 1	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F3.2 Bike 2	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F3.3 Bike 3 **	owners (IDs) ____	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F4. Refrigerator ***	Yes .....1 No .....2 ► F5	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
...	
F11. Computer/laptop	Yes .....1 No .....2 ► F12	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	
F12. Smartphone, mobile phone	Yes .....1 No .....2 ► F13	|_|_|_|_|_|_|_|	|_|_|_|_|	|_|_|_|_|_|_|_|	

* Provide a country-specific list of durables.

** If more than 3 items, provide the total value of the remaining assets and the owners and the other information of the most recent

*** If more than 1 items, provide the total value of the assets and the other information of the most recent

**** Purchased – Inherited - Received as a gift – Other. If received as a gift, from whom? Was the donation done at the time of the marriage (dowry)?

<p>F13. Has your household an outstanding debt in order to buy the durables and valuable owned? Yes .....1 No .....2 ► Question F15 If Yes ► F14. How much debt remains to be paid for your durables and valuables ? Please consider only the capital to be repaid and not the interest |_|_|_|_|_|_|_|_|</p>	<p>Debts</p>
<p>F15. Does your household own jewelry, gold, silver, valuable coins, fine dishes, embroidered sheets, and other items used for the bride's trousseau, artwork, antiques)? Yes .....1 No .....2 ► F17 If Yes ► F16. How much do you think could be the total value of these assets? |_|_|_|_|_|_|_|_|</p>	<p>Valuables value</p>
<p>F17. Have you or any household member some tradable licenses that confer the right to work in a specific market (i.e., for taxi drivers) or some form of intellectual property (i.e., copyright) Yes .....1 No .....2 ► End section If Yes ► F18. How much do you think could be the total value of these assets |_|_|_|_|_|_|_|_|</p>	<p>Other real assets value</p>

Section G – Financial assets

G1. What sum of money does your household usually have at home to meet normal needs and as savings? |_|_|_|_|_|_|_|_|_|_|	Cash value
G2. Does any member of your household have an account at the bank or at some saving association where your household savings are deposited? Yes .....1 No .....2 ► Question G7	Account ownership

Financial asset - Household ownership, value, individual reported ownership

Does your household own ...	Do your household or any household member(s) own...?	How many accounts are present in your household?	Owners (IDs) (list all owners for each account)	How much is the value of the ... owned by the household (in each account)
G3. Savings deposited at a bank	Yes .....1 No .....2 ► G4	|_|	1. _ _ _ _ _ 2. _ _ _ _ _ ...	1. |_|_|_|_|_|_|_|_|_|_| 2. |_|_|_|_|_|_|_|_|_|_| ...
G4. Savings deposited at informal savings program or club (i.e., ROSCAs)	Yes .....1 No .....2 ► G5	|_|	1. _ _ _ _ _ 2. _ _ _ _ _ ...	1. |_|_|_|_|_|_|_|_|_|_| 2. |_|_|_|_|_|_|_|_|_|_| ...
G5. Savings in a Mobile company account	Yes .....1 No .....2 ► G6	|_|	1. _ _ _ _ _ 2. _ _ _ _ _ ...	1. |_|_|_|_|_|_|_|_|_|_| 2. |_|_|_|_|_|_|_|_|_|_| ...
G6. Other saving deposits (e.g., foreign deposits)	Yes .....1 No .....2 ► G7	|_|	1. _ _ _ _ _ 2. _ _ _ _ _ ...	1. |_|_|_|_|_|_|_|_|_|_| 2. |_|_|_|_|_|_|_|_|_|_| ...
Does your household own ...	Do your household or any household member(s) own...?	For each type owned ...	Who owns ... ? Owners (IDs)	How much is the value of the ... owned by the household
G7. Government securities and other public bonds	Yes .....1 No .....2 ► G8		_____	|_|_|_|_|_|_|_|_|_|
G8. Private bonds, investment funds	Yes .....1 No .....2 ► G9		_____	|_|_|_|_|_|_|_|_|_|
G9. Shares (listed and unlisted companies)	Yes .....1 No .....2 ► G10		_____	|_|_|_|_|_|_|_|_|_|
G10. Securities issued by non-residents	Yes .....1 No .....2 ► G11		_____	|_|_|_|_|_|_|_|_|_|

G11. Now let us talk about pension funds or individual pension products to supplement the state pension, which the subscriber will receive only upon becoming eligible for the state pension. Has someone in the household subscribed to some form of supplementary pension scheme? Please also consider life insurance ... Yes .....1 No .....2 ► G13	Pension funds value	
If yes ► G12. How much is the pension plan worth for each member? In answering, consider the number of years each has been paying in and the annual amounts paid, the possible severance pay and the employer's contribution	Value	Owner (ID)
	_ _ _ _ _ _ _ _ _	—
	_ _ _ _ _ _ _ _ _	—
G13. Have you or any household member any form of other wealth (any other financial asset not already included) Yes .....1 No .....2 ► End section	Other locally important assets	
If yes ► G14. How much do you think could be the total value of these assets	Value	Owners (IDs)
	_ _ _ _ _ _ _ _ _	— — — — —

Section H – Other debts

<p>H1. (Excluding the debts contracted for the purchase or the maintenance of real estate properties, to carry out your business, to buy or manage livestock or to buy durables declared above), has your household any (further) outstanding debt (owing to other households or institutions)? Yes .....1 No .....2 ► End section</p>				
<p>H2. Please, for each (further) debt you have, can you tell ...</p>				
Debt n.	... what was the main reason for applying for this loan?	How much debt remains to be paid?	... what is the main source of funding for this loan/ debt?	Debtors (IDs)
	Basic needs of family .....1 Education .....2 Providing a dowry to a member .....3 Celebrations and social events .....4 Paying other debts .....5 Emergencies (injury, fire, theft) .....6 Travel .....7 Other purposes .....8		Relatives 1 Friends/neighbours 2 Moneylender 3 Traders 4 Landlord 5 Employer 6 Bank 7 Store / Retailer 8 NGO 9 ROSCA 10 Other 11	
H2.1	|_|_|	|_|_|_|_|_|_|_|_|_|_|	|_|_|	_ _ _ _ _
H2.2	|_|_|	|_|_|_|_|_|_|_|_|_|_|	|_|_|	_ _ _ _ _
H2.3	|_|_|	|_|_|_|_|_|_|_|_|_|_|	|_|_|	_ _ _ _ _
H2.4	|_|_|	|_|_|_|_|_|_|_|_|_|_|	|_|_|	_ _ _ _ _
H2.5	|_|_|	|_|_|_|_|_|_|_|_|_|_|	|_|_|	_ _ _ _ _

Appendix C – Wealth and poverty

Approaches to the study of wealth and poverty

Poverty is usually defined by comparing household income or consumption with a minimum threshold which allows the identification of individuals whose budget is below what is socially acceptable as a minimum living standard.^{81 82} In low-income countries, a large part of income is gathered from agriculture so another important aspect to consider when studying a household's exposure to poverty is related to the influence of weather conditions and price variations on income fluctuations. This is particularly relevant when there is a lack of product diversification or in the presence of market imperfections that may exacerbate price fluctuations (Deininger and Okidi, 2003) or in the absence of insurance and financial institutions and social protection schemes that can mitigate these effects (Morduch, 1994, Hulme, Moore, & Shepherd, 2001).

Especially when a solid welfare state is absent, to evaluate households' resilience to economic shocks, it is important to consider a more holistic concept of household economic condition. Particularly, more recently, measures of household economic deprivation have been extended to include household wealth endowments. In the seminal work of Bourguignon and Chakravarty (2003), the authors contend that "income as a sole indicator of family well-being is inappropriate and should be supplemented by other attributes and variables..." (p. 26). Further, the economist would advocate that household material well-being is also determined by the possession of wealth.

Households accumulate wealth also for precautionary motives, to be able to face unpredicted circumstances, therefore households with the same income (from now on in this appendix we will use the terms income and consumption indifferently), but different levels of wealth, may be differently affected by an economic shock, such as job loss, or unexpected expenditure. Hence, a realistic measure for the assessment of the households' potential economic hardship must bring household wealth into the picture to account for the availability of private precautionary savings.

Several approaches have been used to combine income and wealth in a single index of potential deprivation (Brandolini et al., 2010). The first indicator based on a composite income net-worth measure has been introduced by Weisbrod & Hansen (1968). In the composite income-net worth poverty index, wealth is converted into a stream of constant annuity and added to the income to assess household endowments. The resulting indicator YW is equal to the equivalent income Y added to the

⁸¹ This threshold can be calculated in absolute terms, comparing the household economic resources with the amount needed to meet basic needs such as food, shelter, clothing, etc., or in relative terms, i.e., with respect to the reference population. The former definition is most frequently applied in LICs which make use of the international poverty line, set at \$2.15 per person per day using 2017 prices; absolute poverty lines computed in HICs have however higher levels. The relative approach is more broadly used in HICs, especially when income-based measures are considered (Atkinson and Bourguignon, 2000; OECD, 2023). Furthermore, to allow international comparisons of poverty rates, usually, the poverty line is country and time-specific (Atkinson, 1995). In most cases, it is defined as 50% or 60% of the median equivalent income (or consumption) in each country/year considered.

⁸² Another aspect to consider in studying poverty is relative to its persistence: moving to a dynamic perspective allows distinguishing between chronic and transient poverty. For a review of poverty dynamics in developing countries see, Baulch & Hoddinott, (2000). Measures of poverty persistence are based on longitudinal or panel data, where the same households are observed over time, and it is possible to study transitions in and out of the state of poverty. A household is defined to be chronically poor based on the length of poverty spells they experience (Hulme and Shepherd, 2003). However, the presence of measurement errors may introduce spurious variability in income (Mckay and Lawson, 2003).

annuity associated with net equivalent wealth W ⁸³ (calculated using an interest rate r and for a lifetime n):

$$YW = Y_t + \left(\frac{r(1+r)^n}{(1+r)^n - 1} \right) W_t$$

According to this approach, a household is defined as poor when YW falls below the poverty line.

This indicator, however, requires specifying an interest rate and a single time horizon for survival, even though it typically varies among different members within a household.

Another index that takes into account household wealth, but without the need to consider the life expectancy of individuals and interest rates, is the asset poverty index (Haveman and Wolff, 2004). According to this indicator, a household is considered wealth-poor if its net wealth W , when liquidated, cannot ensure an income equal to the poverty threshold for a specified period (usually assumed to be between three months and a year: $W < \alpha S$, where α is a function of the chosen period, for example, equal to 0.25 in the case of three months and 1 for one year.⁸⁴

As some real assets, such as a household's primary residence or land, are difficult to liquidate within a short time frame, it may be preferable to consider an indicator based solely on more liquid assets as a measure of households' actual ability to access resources for meeting basic daily expenses. The components to be considered liquid (i.e., easily convertible into cash), may vary in different contexts. Usually, financial assets are considered liquid assets. In low-income countries, certain components of real wealth, such as livestock, can be viewed as akin to financial assets if a market exists for their exchange, enabling them to be quickly transformed into cash. However, a distinction should be made between those parts of wealth that can be disposed of without diminishing the household's livelihood capacity and those that are essential to it.

Combining the poverty indicators based on income or consumption and the wealth or financial wealth indicators above, it is possible to identify situations of particular interest. For example, poor households according to both income and net (financial or total) wealth indicators can be considered in more severe poverty conditions than the poor on an income base only, because they have not only a low current income but cannot compensate in any way by drawing on accumulated wealth. Those who are income-poor but with a sufficient wealth buffer instead can compensate for the lack of current resources, at least in the short run. Moreover, households with incomes above the poverty threshold, but poor according to financial indicators can be considered financially vulnerable because, in the case of a temporary drop in income flow, they cannot maintain a standard of living at least equal to that provided by an income equal to the poverty threshold, by liquidating their wealth, even for short periods.

These measures of financial fragility can be considered along with other indicators of household exposure to potential shocks, due, for example, to the security of job position, the vulnerability of income to price and climate fluctuations, such as in agriculture, or the presence of regular payments that the household makes to service debt and rent for the main home and whose non-payment could

⁸³ Household equivalent income and wealth are obtained by dividing respectively total household income or wealth by the number of equivalent adults in the family. This number allows accounting for the economies of scale, so it is equal to or lower than the number of persons within the household. One of the most used scales to compute this number is the modified OECD scale of equivalence, which assigns a coefficient of 1 to the reference person, 0.5 to other household members aged 14 or more, and 0.3 to those younger than 14.

⁸⁴ The authors consider two different indicators: the primary measure is the net wealth, i.e. the current value of all marketable assets less the current value of debts, while the second is based on a more restrictive definition of assets, namely liquid assets, and does not consider debts.

cause very negative consequences on household living conditions (eviction, foreclosures) or future borrowing capacity (default or bad debt reporting) (Gambacorta et al., 2021).

An application using LWS data

Utilizing data from the Luxembourg Wealth Study (LWS) Database, which predominantly covers developed nations and includes a middle-income country, South Africa, allows for a nuanced examination of income and asset poverty. The LWS Database facilitates the exploration of the extent to which income and asset poverty are two concurrent phenomena. In this section, we consider the asset poverty indicator based on the lack of a minimum level of financial assets, i.e. those that can be more easily turned into cash in case of need.⁸⁵

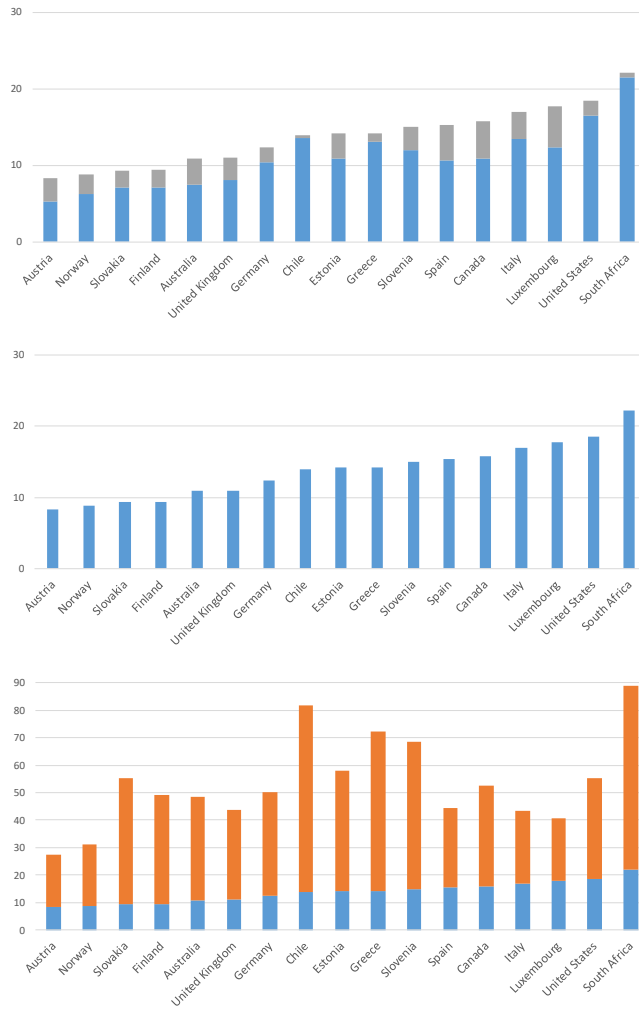
Figure C1 presents the combination of income and asset poverty. The households whose equivalized gross household income falls below the relative income poverty line at 50% of the median are considered *income-poor* (middle panel in Figure C1). Households that do not have sufficient financial assets to overcome the poverty line for at least three months are called *asset-poor* households.

We can take two routes in combining the two indicators. A first more restrictive approach identifies the most vulnerable households by excluding from the income-poor those who are not asset-poor (upper panel in Figure C1). The second approach is more inclusive, defining the vulnerable group as the union of income- and asset-poor (lower panel in Figure C1).

In the former case, by taking into account the lack of asset endowment, in most of the countries we observe a moderate reduction of vulnerable households, suggesting that most income-poor households do not have financial assets. On the other hand, the lower panel shows that a sizeable share of households above the income poverty line would not be able to support themselves using the financial assets they own in case they lose their income. The identification of a wider group of vulnerable households can be important for detecting the target of policies that both lift poor households out of poverty as well as prevent vulnerable households from becoming poor. In some cases, the increase in the share of vulnerable households compared to the income-poor only is remarkable (i.e., South Africa and Chile). This evidence supports the adoption of a dual-focused lens in poverty assessment, recognizing the overlapping yet distinct dimensions of income and asset poverty assessment.

⁸⁵ LWS financial assets include cash, deposit accounts, and other forms of financial investments (bonds and other debt securities, stocks, and other equity, investment funds, and alternative investments). They do not contain pension assets and other long-term savings (life insurance). Financial assets are equivalized by household size, using the square root equivalence scale.

Figure C1 - Income and Asset Poverty



Income-poor **AND** asset-poor

reduced by 'vulnerable' group *income-poor, but not asset-poor*

Income-poor

extended by 'vulnerable' group *asset-poor, but not income-poor*

Income-poor **OR** asset-poor

Appendix D – The Distributional Wealth Accounts (DWA)

National Accounts are an important source of macroeconomic information on the balance sheets and the financing and investment of the household sector. Having both wealth surveys and NA or other aggregate wealth estimates, opens up the possibility of combining these two sources of information, producing indicators that can be referred to as Distributional Wealth Accounts (DWA).⁸⁶ Currently, the joint availability of surveys and aggregate data sources is quite rare in LMICs. However, there is growing interest in integrating data from different sources, and it is reasonable to expect this trend to continue in the future.

The purpose of DWA is to provide timely estimates of income and wealth distribution consistent with the macroeconomic aggregates. This feature is particularly useful for policy purposes (e.g. taxation design, better-targeted social assistance), that is often based on the distribution of national total wealth values. The underlying idea is combining the information from surveys and National Accounts to exploit their strengths. On the one hand, wealth surveys provide useful distributional information, but generally lack timeliness and suffer from quality issues, which are mainly due to the difficulty of enrolling wealthy households and the reluctance of respondents to give a truthful picture of their economic situation. On the other hand, National Accounts often use a multiplicity of sources that tend to increase the quality of aggregate statistics.

Few HIC countries regularly publish DWA statistics. Among LMICs there are some attempts such as those available for South Africa (Chatterjee et al., 2020) and Brazil (Bhering and Avila de Castro, 2023). In the last decades, economic shocks such as the 2008 financial crisis and the more recent COVID-19 pandemic have increased the demand for more timely, coherent, and consistent information on the distribution of household wealth and its components. These new data requirements are reflected in the G20 Data Gaps Initiative, launched in 2009, which encourages the production and dissemination of distributional information on income, consumption, and wealth for the household sector. The OECD has been mandated to coordinate the work and closely cooperate with the ECB and Eurostat. As a result, the OECD and Eurostat established an expert group to investigate how to add distributional information to the National Accounts. In addition, Eurostat and the European Statistical System agreed in the “Vienna Memorandum” in 2016 to work toward this objective. Both initiatives currently focus on consumption, income, and saving. Similarly, the ESCB has developed Distributional Wealth Accounts, which aim to provide distributional information on the wealth of households by linking Sector Accounts with household survey data. In 2019, the Statistics Committee agreed to the project as part of the medium-term strategy to enhance the financial accounts.

The construction of DWA is based on different approaches, but generally, it involves the following steps (see, among others, ECB 2020, Cantarella et al., 2023).

The first one assesses the instrument-specific conceptual comparability between the two sources of information. As explained above, since they have different objectives, they may differ in terms of definition, population coverage (e.g., household sector and wealth), timeliness, periodicity, or valuation criteria of assets and liabilities. Generally, most items are highly comparable (i.e., deposits, bonds, listed shares, and debts). Others, like pension entitlements and un-listed shares often, display low comparability.

The second step consists of several adjustments to the survey data to reduce the coverage gap, i.e., the differences between macroeconomic figures and survey-based aggregates. The methods to fill the gap between micro and macro estimates can be broadly distinguished into two groups: design-based and model-based approaches. The first approach uses calibration methods⁸⁷ that modify the weights of the observations so that the constraints (i.e., the equality between sample and macro

⁸⁶ See the Distributional National Accounts Guidelines (Blanchet et al., 2021).

⁸⁷ Deville and Särndal (1992), Deville (2000) and Kott and Chang (2010).

estimates of one or more variables) are met. This strategy is primarily suitable if micro estimates fall short due to a non-response bias (a lower response rate among the more affluent households).⁸⁸ The model-based approach comprises two requirements: a model for the measurement error distribution and auxiliary information to estimate the model's parameters. Among the various models found in the literature, the most frequently used are imputation methods. These methods, which modify the single sample data, generally yield estimates with smaller variance than would be obtained by modifying the weights.

The best model to apply for reducing the coverage gap depends on the available information. The lower the availability of external information (such as register data), the higher the need to use modeling assumptions. For instance, regarding deposits, the ECB methodology identifies outlier observations (i.e., when deposit holdings are minimal compared to household income and/or the share of the household portfolio held as deposits is too tiny, namely income criterion and asset criterion, respectively). In the absence of administrative data on deposits, the outlier observations are replaced with the average values from other observations. Furthermore, the poor coverage of the wealthiest households is addressed by exploiting information on the most affluent households from Forbes' rich list and assuming that the right tail of the wealth distribution follows a Pareto distribution. Then, a sample of synthetic households is extracted from that distribution and added to the survey data. The previous steps enable the alignment of micro and macro data when both information are available and produce a synthetic database for computing any distributional statistics of interest.

Finally, in the third step, these indicators are then interpolated and extrapolated based on the information derived from the quarterly National Accounts to produce a quarterly time series on the distribution of household wealth.

⁸⁸ This approach is suggested only if a sufficient number of wealthy cases are present in the sample, to avoid obtaining excessively large weights.

Appendix E– Oversampling the rich: some examples

Oversampling strategy is based on the availability of some external source with individual/household data containing information correlated with wealth.⁸⁹In the absence of a sample frame with direct information on household wealth, surveys also use data from other sources such as income tax returns, geographical information or other proxies of household wealth. Below are some examples.

Wealth or income tax data

The Survey of Consumer Finances (SCF) in the US selects part of the sample from a list based on individual income tax return data (developed by the Statistics of Income Division). In particular, the sample is selected using the stratification of the households with respect to a “wealth index”. This index is calculated using a model that accounts both for the capital income flows, as resulting from the income tax data, and for the wealth measure derived by the previous round of the SCF. Strata are then formed using percentiles of the distribution of the wealth index and higher strata are sampled at progressively higher rates. Kennickell (2008) estimates the effect of oversampling in the SCF survey by comparing estimates with the full sample with those with the only area-probability sample. From about the 20th percentile of the wealth distribution and higher, the level of net worth at each percentile under the full sample is higher than under the area-probability sample alone. The difference ranges from about 2% at the 25th percentile to 74% at the 99th percentile. Another effect of the oversampling mentioned by Kennickell is the increase in precision of the estimates across all wealth groups. A similar result is found in the EFF by Bover (2008). The increase in accuracy grows with the correlation between the external information available and wealth.

The Bank of Italy Survey on Households Income and Wealth adopts a two-stage sample design. First, municipalities are selected with different probabilities with respect to their size. In the second stage, households are stratified according to their income as resulting from the Tax register data. To overcome some potential bias due to the drawbacks of this source due to the presence of tax evasion-elusion (Fiorio and D’Amuri, 2005) or the lag in time availability, strata were defined based on an optimal sampling strategy where variables from the tax records are considered as proxies of the households’ economic situation (Barcaroli et al., 2021; Bank of Italy, 2022).

The Spanish Survey of Household Finances (EFF) adopts a similar two-stage sample design but in the second stage, households are then selected using wealth tax data in collaboration with the Statistics Office and the Tax Office. The available data frame consists of households (defined by address) and other information coming from both wealth and income tax records. The first variable, the wealth stratum indicator, is based on total household declared taxable wealth, which was obtained by adding up the returns of all relevant household members. The second variable, applied to those filing income tax but not wealth tax, indicates the quartile, in the national taxable income distribution, to which the household belongs. Finally, information on household per-capita income was also added (Bover, 2008).

The French Wealth Survey (FWS) uses housing tax data combined with income tax data. This information enables the classification of households in strata that are strongly related to their wealth.

Finland and Luxembourg use personal income tax/social security data so that individuals with larger incomes are sampled with higher rates.

Geographical information

⁸⁹ Oversampling wealthy households involves a higher sampling of rich households, which ensures more accurate estimates of wealth and its components. Weights are used to adjust the relative importance of household classes to reflect that of the overall population.

In the Survey of Financial Security in Canada (SFS) the main sample is supplemented by an additional sample that accounts for the wealthier households. The SFS sample is composed of dwellings and families are defined as “a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common law or adoption”. The main sample is drawn from the Labour Force Survey (LFS) figures using a stratified multi-stage sample. Using the Census geography, the sample is selected in three stages: first a selection of small geographical areas (clusters), then addresses within those areas, and finally dwellings. The additional sample is selected from those geographical areas with a higher proportion of families with high income (Statistics Canada, 2005).

Belgium and Germany make use of information on regional-level income as a proxy of wealth. In particular, Belgium adopt a Neyman allocation based on income variability, while in Germany a larger share of households is selected from street sections with high average income. In Greece, the sample in the main cities is defined so that the sampling rate is proportional to real estate prices.

Other proxies

In the Cyprus Survey of Consumer Finances, the main sample is based on an area-probability multistage design. This is then complemented by an additional sample selected from the households' electricity consumption (provided by the Electricity Authority of Cyprus EAC) that is used as a proxy of wealth. This information has been preferred to the one regarding income collected for the calculation of federal tax returns which is not considered reliable. Electricity information is both more accurate and provides complete coverage of the population.

Finally, Portugal oversamples dwellings with a useful floor space above a predefined threshold. These strategies lead in general to more precise estimates of wealth although the effectiveness of oversampling the wealthy varies across countries (HFCN, 2020).

List of abbreviations used in the text

AIDIS - All-India Debt and Investment Survey
DHS - Demographic and Health Survey
EASTC - Eastern Africa Statistical Training Center (Tanzania)
EFF - Spanish Survey of Household Finances ENSAE - École Nationale de la Statistique et de l'Analyse Économique (Senegal)
ENSEA – Ecole Nationale Supérieure de Statistique et d'Économie Appliquée d'Abidjan (Ivory Coast)
FWS - French Wealth Survey
HFCS - Eurosystem Household Finance and Consumption Survey
HFCN - Eurosystem Household Finance and Consumption Network
HICs – High-Income Countries
ISSEA - Sub-Regional Institute of Statistics and Applied Economics (Cameroon)
LIS – Luxembourg Income Study
LMICs – Low- and Middle-Income Countries
LWS - Luxembourg Wealth Study
LSMS - World Bank Living Standards Measurement Study
NA – National Accounts
NPS - Tanzania National Panel Survey
PDI - Proactive Dependent Interviewing
RDI - Reactive Dependent Interviewing
SCF – U.S. Survey of Consumer Finances
SFS Canadian Survey of Financial Securities
SHIW – Italian Survey of Household Income and Wealth
SIH - Australian Survey of Income and Housing
SNA – System of National Accounts
UNECA – United Nations Economic Commission for Africa (Ethiopia)

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