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Comparing Wealth – Data Quality of the HFCS[θ]

Anita Tiefensee* and Markus M. Grabka**

November 2014

Abstract

The Household Finance and Consumption Survey (HFCS) provides information about household wealth (real and financial assets as well as liabilities) from 15 Euro-countries after the financial crisis of 2007/8. The survey will be the central dataset in this topic in the future. However, several aspects point to potential methodological constraints regarding cross-country comparability. Therefore the aim of this paper is to get a better insight in the data quality of this important data source. We will first present a synopsis of cross-country differences, which is the core of the paper. We will compare the sampling processes, the interview modes, the oversampling techniques, the unit and item non-response rates and how it is dealt with them via weighing and imputation as well as further points which might restrict country comparability. In addition we give a first insight in the selectivity of item non-response in a cross-national setting. We make use of logit models as well as apply a decomposition method suggested by Fairlie (1999, 2005) to identify differences in characteristics as well as structural (cultural) differences in the item non-response missing process.

Keywords: Household Finance and Consumption Survey (HFCS), data quality, cross-country comparability, item non-response, Fairlie decomposition
JEL-code: D31, N30, C83

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1. Motivation

In spring 2013 the European Central Bank (ECB) released the Household Finance and Consumption Survey (HFCS). The HFCS provides information about household wealth, income and indicators of consumption and credit constraints from (nearly) all Euro-countries[1] after the financial crisis of 2007/8. The survey is of general interest because for the first time it is possible to compare directly real and financial assets as well as liabilities on the household level between Euro-countries.[2] For several countries this was not even possible on a national level before. The survey will therefore be the central dataset in this topic in the future.

The release of the data caused a lot of attention and was followed by several discussions because the bigger picture drawn by the numbers was somehow surprising. The figures (all ECB 2013a) showed that in comparison with the other investigated countries the households in Luxemburg and Cyprus have the highest median wealth (397.800 Euro and 266.900 Euro). German households hold only 51.400 Euro, which is the lowest value, followed by Slovak households (61.200 Euro). The median over all surveyed Euro-Countries is 109.200 Euro.

The ECB tried to explain the numbers, especially because the politic and economic leaders were at the time of publication of the dataset in negotiations how to rescue Cyprus. Like Ireland, Spain, Portugal and Greece it was in financial trouble due to the financial crisis and asked the ECB for financial aid. The explanations of the ECB ranged from structural differences like household sizes or age patterns, over different macroeconomic dynamics to varying historical, cultural and institutional factors like intergenerational transfers, land ownership or allocation of household wealth between real and financial assets (ECB 2013b). The public debate quickly added additional explanations like wars, the German reunification, transition processes in eastern countries or tax systems (Fessler 2013). Furthermore the survey only collects private pension wealth while wealth accrued from public pension schemes are not considered although it is of high relevance in many countries. The question how a fully comparable wealth distribution might look like could therefore not be answered by the ECB.

[1] Current countries: Austria, Belgium, Cyprus, Finland, France, Greece, Germany, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia and Spain. Additional countries in the future: Estonia, Ireland and probably Latvia.

[2] Other projects like the Luxembourg Wealth Survey (LWS) try to post harmonize individual datasets to make them comparable with each other. The HFCS surveyed ex ante harmonized data.

In addition differences between countries might be due to methodological reasons. A look into the data documentation (ECB 2013c) reveals further restrictions for comparison. Reference periods are not the same in all countries, not every country oversampled the wealthy households, which leads to an underestimation of the top wealth holders. Some countries did not survey all mandatory variables and Finland drew a lot of information from registers. Furthermore only half of the countries designed their surveys as panels, which will restrict future research over time. Very low initial response rates in some countries are another challenge for cross-country comparability. Furthermore the item non-response rate is a serious problem in lots of surveys especially if they deal with a sensitive and difficult subject like wealth (Frick et al. 2010a and Kennickell 2011). A systematic item non-response rate influences the imputation of missing data and therefore the whole survey distribution.

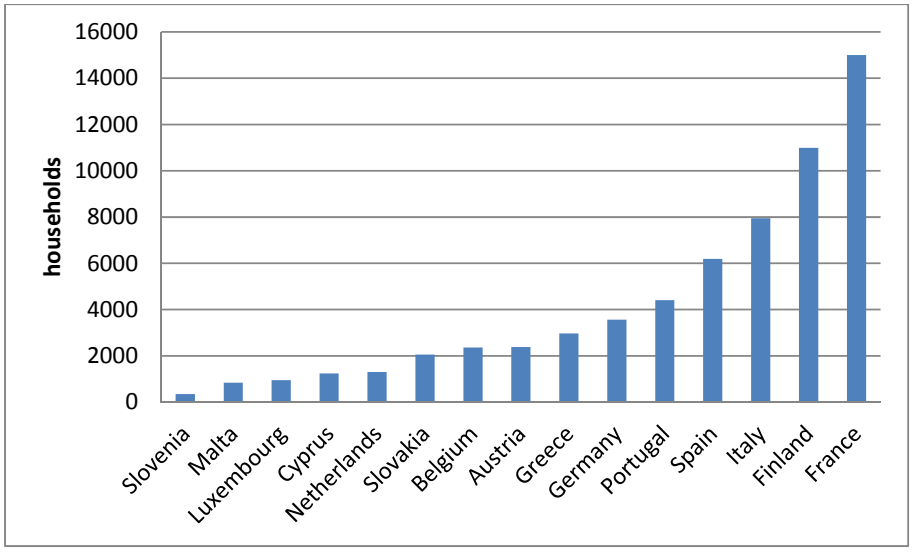
All of these aspects point to potential constraints when making cross-country analyses regarding net wealth based on the HFCS. Therefore the aim of this paper is to get a better insight in the data quality of this important data source. We will first present a synopsis of cross-country differences which is the core of the paper (chapter 2). We will compare the sampling processes, the interview modes, the sample sizes, and the unit and item non-response rates and how it is dealt with them via weighting and imputation. In addition we will show which countries oversampled wealthy households based on which data, compare the survey periods as well as further points which might restrict country comparability. Then we focus on non-response and in particular on item non-response in a cross-national setting (chapter 3). Given the considerable variation of item non-response across countries as well as the varying degree of selectivity built into the missing process, there is substantive and methodological interest about data quality for comparative wealth analyses. We make use of logit models as well as apply a decomposition method suggested by Fairlie (1999, 2005) to identify differences in characteristics as well as structural (cultural) differences in the item non-response missing process (chapter 4 and 5). In chapter 6 we summarize our results and make suggestions for improvements for the dataset.

2. Comparability Issues of the HFCS

The main focus of the HFCS is households' real and financial assets as well as their liabilities. The HFCS is coordinated by the ECB but conducted by the national banks. To get a better understanding which countries are comparable with each other in which dimensions or under which conditions regarding net wealth table 2 summarizes main comparability issues (based on ECB 2013c, d and Fessler and Schürz 2013).

In the first wave all in all 62.521 households where surveyed (see Figure 1). Slovenia has the smallest net sample size consisting of 343 households, which is therefore "not [be] deemed fully representative for the country" (ECB 2013c p. 9), followed by Malta (843 households) and Luxembourg (950 households). In the last two countries analyses for small subgroups tend to be hindered due to the small sample size. On the other side France surveyed the most households (15.006) followed by Finland (10.989) and Italy (7.951). However, even for those countries analyses at a detailed regional level seem to be not reasonable.[3]

Figure 1: Number of surveyed households in HFCS by country



Source: Based on ECB (2013c)

All surveys except for Slovakia have a probabilistic design. This means each household in the sample frame has a positive probability of being drawn into the sample. However, Slovakia used a quota sampling for the first wave (based on the income distribution of EU-SILC).

[3] Additionally, regional indicators are not available in the user database of the HFCS.

Therefore correct sampling and standard errors are impossible to calculate.[4] Types of sampling frames differ across countries, which is not surprising. In most countries units were drawn from some sort of population or dwelling register, in Belgium from telephone register and in Cyprus from the customer register of the electricity authority. The stratification criteria as well as the number of stages also differ between the countries. The target population of the HFCS consists of all members of private households residing in the national territory at the time of data collection. Persons living in collective households and institutions as well as homeless are excluded in most of the countries. How well the sampling frames represent this target population is not clear for each country. In particular a telephone register may not cover the total population given that some households do not have a telephone or there are telephone numbers which are protected and thus not available (Häder et al. 2012). In the Netherlands people who do not speak Dutch and also blind people were excluded from the target population from the beginning, which most likely bias mean net worth upwards, given that migrants' wealth is typically the average wealth (Cobb-Clark and Hildebrand 2006). In Greece smaller villages where excluded as well (comprising about seven percent of the total number of households).[5]

The survey mode is consistent in most of the countries. They mainly used Computer Assisted Personal Interviews (CAPI) – only Cyprus, Finland and the Netherlands mainly/only used Paper- and Pencil Interview (PAPI), Computer Assisted Telephone Interviews (CATI) or Computer Assisted Web Interviews (CAWI). Finland in addition drew a lot of information from registers which might be problematic with regard to cross-country comparability as has been stressed by Lohmann (2011). The literature shows that face to face surveys have higher response rates and lower item non-response rates than those without (Tourangeau et al. 2000), but also construct more socially desirable answers (De Leeuw 1992, 2008). Therefore especially the (item) non-response behavior of the Netherlands which mainly used CAWI has to be investigated in more detail.[6]

[4] Slovakia will have a probabilistic design from the second wave on.

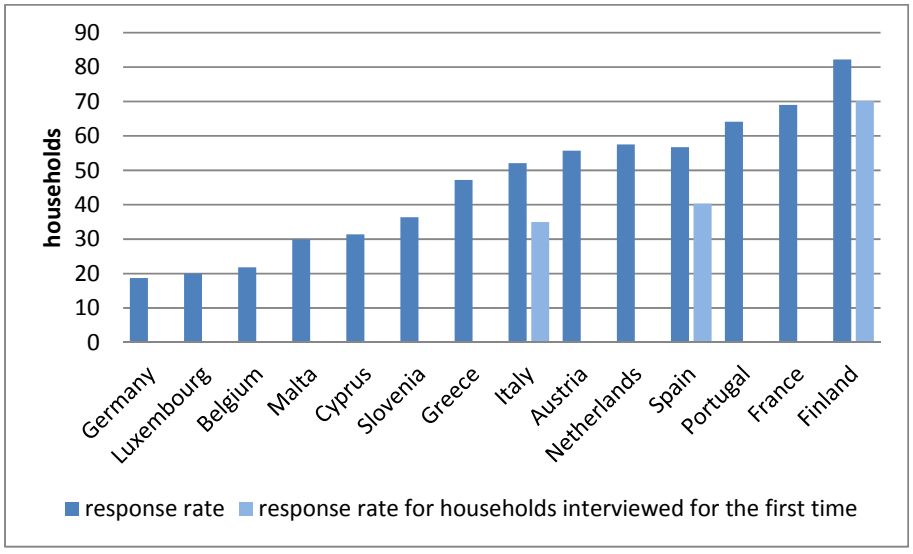
[5] Again one would expect an upward bias, given that the value of property wealth is usually lower in the countryside than in city regions.

[6] It is also known from the experiences of EU-SILC that the use of different survey modes may influence data quality. E.g. Germany was the only country with self-administered interviews in EU-SILC while other EU-SILC countries performed predominantly CAPI. However, self-administered interviews with cover letters only in the local language tend to discourage in particular migrants to take part in such a survey which in fact happened in Germany (Hauser 2007).

Further differences are found regarding the length of interviewer training. In the majority of the countries it is at most eight hours. In France and Spain interviewers were trained almost 30 hours. Taking into account that these countries continued preexisting wealth surveys it can be assumed that the interviewers in these countries are much more experienced than in others and might therefore have a positive impact on e.g. item non-response behavior and response quality in general.

The response rates (see Figure2) in the 15 countries range from only 18.7 percent in Germany to almost 70 percent in France, where participation is compulsory like in Portugal (64.1 percent) "though participation is never enforced" (ECB 2013c, p. 41).[7] In Finland, France, Italy, the Netherlands and Spain a preexisting wealth survey was adjusted and continued. Therefore the response rates for the countries with a panel component where on average higher because people are already used to the survey content and the interviewer.[8] It is also well known that panel surveys are affected by learning effects (Haunberger 2011) and by selective panel attrition (Kroh 2014). Thus households from cross-sections may most likely differ from those of existing panel studies.

Figure 2: Initial response rates in the HFCS



Source: Based on ECB (2013c)

[7] Finland even has a higher response rate (82.2 percent), but it refers to an income survey and is therefore not completely comparable.
[8] In Cyprus and Portugal an existing wealth survey was discontinued and replaced by the HFCS.

Survey weights are used to adjust for the unit non-response behavior; this is done in a similar way in each country. In a first step design weights are calculated as the inverse probability of being selected into the sample. In a second step the design weights are adjusted to coverage issues and non-response behavior and are calibrated to external sources. From the documentation of the ECB it is not completely clear in which ways the calculation process differ between the countries. Information is available on calibration variables like age, gender household size, region and some other variables all from external sources as well as on the existence of weight trimming or limitations for weight adjustment factors. However just a few country documentations identify which information is available on non-respondents and/or if additional information collected from the interviewer (paradata) is used.[9] Therefore the quality of the weights cannot be judged here. The imputed and afterwards weighted data was crosschecked with the respective national accounts for plausibility reasons on an aggregated level. Some countries like Belgium and Slovenia capture over 90 percent of net wealth of the national accounts. The Netherlands on the other hand only provide a little bit more than 50 percent. It seems to be obvious, that any comparisons about wealth levels will be biased when considering the Netherlands.

It is well known that wealth is by far more unequally distributed than income. Thus a proper consideration of top wealth holders may have a strong influence on the findings about wealth levels and wealth inequality. To get a representative overview of the wealth in the Euro-area, especially from the upper tail of the distribution, most of the countries oversampled the wealthy households in some way. The method to do so as well as the range in which people were identified as wealthy was different in almost each country (see Table 1). Spain and France oversampled wealthy households based on individual information about net wealth from a wealth tax register. Finland and Luxembourg used individual income information – Cyprus household information about the electricity bill. Greece, Belgium and Germany applied geographical information, in the first case real estate prices and in the two others income information. Austria, Portugal and Slovenia oversampled big cities and Italy, Malta, the Netherlands and Slovakia did not oversample at all. The effective oversampling rate demonstrates the degree to which the share of wealthy households in the sample ex-

[9] Paradata can help to model nonresponse probability and therefore improve the survey quality (Kreuter 2013).

ceeds their share in the population. The effective oversampling rate of the top ten percent[10] clearly shows that Spain and France have the best oversampling technique (based on individual wealth information). This is confirmed by Vermeulen (2014). He compares the HFCS survey data with the Forbes list of billionaires and indicates how well the households at the upper part of the distribution are captured. Regarding the effective oversampling rate of the top ten percent countries which only oversampled big cities and the ones without any oversampling cut comparatively poor (exception: the Netherlands). Therefore it can be assumed that those surveys underestimate the true degree of wealth inequality, wealth levels and aggregates. [11]

Table 1: Oversampling strategy

Country	Oversampling wealthy hh	Basis for oversampling	Details
Spain	Yes	individual information	taxable wealth
France	Yes	individual information	net wealth income
Finland	Yes	individual information	+ socio-economic status
Luxembourg	Yes	individual information	income
Cyprus	Yes	household information	electricity bills
Greece	Yes	geographic real estate price information	
Belgium	Yes	geographic income information	
Germany	Yes	geographic income information	
Austria	Partly	geographic information	Vienna
Portugal	Partly	geographic information	Lisbon, Porto
Slovenia	Partly	geographic information	Ljublijana, Maribor
Italy	No	-	
Malta	No	-	
Netherlands	No	-	
Slovakia	No	-	

Source: Based on ECB (2013c)

Another important issue of data quality is the share of item non-response and how it is dealt with (Bover 2010, Zagorsky 1999). The share of item non-response rates differ significantly

[10] Example taken from ECB (2013c, p. 37): "if the share of rich households in the net sample is exactly 10%, the effective oversampling rate of the top 10% is 0. If the share of households in the wealthiest decile is 20%, the effective oversampling rate is 100, meaning that there are 100% more wealthy households in the sample than would be if all households had equal weights".

[11] The authors tried to approximate the degree of bias on wealth levels and inequality when excluding the top wealth holders of the oversample. However the HFCS-data do not provide any indicator variable to differentiate between "normal" sample members and those from the oversample. It would be helpful to find such a variable in a next release of the HFCS. In order to reflect the relevance of such an oversampling the SOEP can be used exemplary. In 2002 a top income sample was drawn to improve capturing wealthy households. When excluding this oversample mean net worth would drop by more than 6 percent (based on own calculations).

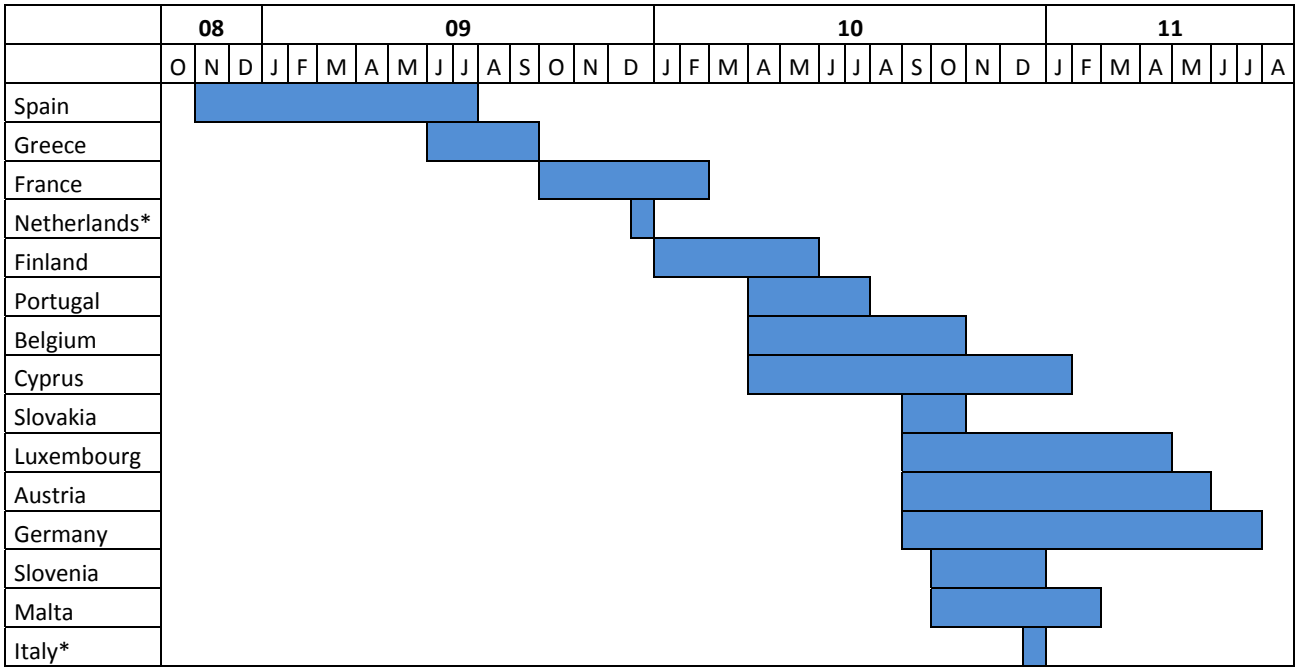
between different assets and liabilities and also within one component between the countries (see section 3). Except for Finland and Italy all countries used multiple imputation (precisely: multivariate imputation by chained equations, MICE) to estimate the missing values. However the number of covariates used for the imputation greatly differs between countries as well as assets and liabilities. From the literature we know a more detailed set of covariates may better capture the selectivity of the non-response behavior than only a very limited set of covariates (Barceló 2008). In Spain 239 covariates where used to impute missing values of the household main residence, Malta only used four, the Netherlands six. For the most important mortgage for the household main residence Greece used 154 variables, Slovenia only four. Which variables were used or how the item non-response patterns look like in the individual countries and for the wealth components or other indications for the imputation quality are not documented. Therefore the quality of the estimations cannot be judged completely. In addition two countries make use of single instead of multiple imputation, due to very low rates of item non-response. Finland drew a lot of information from registers and Italy had a special agreement with the survey company, which only considers interviews below a certain level of item non-response as completed.[12] Thus precise confidence intervals cannot be generated for these two countries.

The reference periods for the assets and liabilities also differ between the countries and thus impair cross-country comparability (see Figure 3). They range from 2008 to 2011, but for most countries they are between 2010 and 2011. Especially for Spain comparability issues might occur due to the financial crisis and its effects. Here the reference period spreads from November 2008 to July 2009. Estimates from Badiani (Smyth and Urban 2013) show that the value of residential real estate dropped by more than 30 percent since 2007 – 60 percent of the value of real assets are household main residences in Spain.[13] In addition one should also account for inflation and the interest rate. Despite from Spain this should also be done in Greece and France where the reference periods also start before 2010.

[12] It can be assumed that such a precondition may yield to a selective sample of respondents, because item-non response is a common phenomenon in all population surveys in particular in surveys dealing with wealth and in addition non-response is highly selective as it has been shown by Frick, Grabka and Marcus (2010a).

[13] Spain already surveyed the second wave of the HFCS in 2010. Maybe this will serve as a better basis to compare net wealth between the countries.

Figure 3: Reference periods for assets & liabilities: 2008-2011



* valuation date: 31. December

Source: Based on ECB (2013c)

A panel component, which will allow more detailed analyses over time than repeated cross-sections, will definitely be introduced in seven countries: Belgium, France, Germany, Italy, Netherlands, Slovakia and Spain. However, cross-country comparability will be affected from this decision, given that e.g. the extent of rounding or item-non response will decrease given that the respondents will get familiar with the content of the survey and will have confidence in the interviewer.[14] Therefore it will be interesting to see if and how the national banks will account for that e.g. via weighting.[15]

[14] Given these methodological problems any time series for income based on the Socio-economic Panel (SOEP) excludes information from respondents of a first wave of a new subsample (Frick et al. 2004).

[15] Another comparability issue pertain the so-called following rules in panel surveys to decide whether to continue surveying household members who leave a household (see Schonlau et al. 2011). This decision will affect comparability of wealth mobility analyses.

Table 2: Methodological differences across countries in the HFCS

Country	Net sample size (response rate) (p 41)	Sampling Design (p 31)		Excluded groups (p 33)	Survey mode (p 24) + length of interviewer training (p 25)	Weighting - trimming - limits for weight adjustment factors (ECB 2013d p 14)	Oversampling of the wealthy			Imputation[16] (covariates used for main variables)[17] (p 51)	Reference periods (p 74)	Panel component (p 11)[18]	miscellaneous
		Sampling frame(s)	Stratification criteria				Basis (p 10, 36)	Details (p 36)	effective oversampling rate of the top 10 (p 38)[19]				
Austria	2.380 (55,7 %)	List of enumeration districts; register of post-box addresses	NUTS III region, population of municipality	Homeless, all institutionalized population	CAPI 7 h	- no - no	Geographic areas	some oversampling in Vienna because of higher expected non-response rate	1	Hmr: 104 Mort: 51 Save: 133	09/10-05/11	No	---
Belgium	2.364 (21,8 %)	Telephone register and street register	NUTS I region and average income by neighbourhood of residence	Homeless, prisoners	CAPI 6 h	- no - no	Geographic information about average income	Neyman allocation, based on the standard deviation of income in stratum and stratum size	47	Hmr: 46 Mort: 31 Save: 49	04/10-10/10	In the future	---
Cyprus	1.237 (31,4 %)	Customer register of the Electricity authority of Cyprus	Census districts divided into urban and rural	Homeless, prisoners, population of the areas of the Republic of Cyprus not under the effective control of the Government of the Republic of Cyprus	CAPI (12 %) PAPI (88 %) 5 h	- no - no	Household information about electricity bill	61 % of the gross sample was drawn from households within the top 10% according to electricity consumption	81	Hmr: 50 Mort: 38 Save: 48	04/10-01/11	Not yet decided	- Statement of the ECB: "The data for Cyprus appears not to be comparable with those for other Euro area countries in a number of dimensions and should therefore be interpreted with caution." ECB (2013b) (p 4) - Existing wealth survey

[16] Imputation technique: multivariate imputation by chained equations, MICE, unless otherwise noted (p 49).

[17] Value of household main residence (hmr), outstanding amount of most important hmr mortgage (mort), value of savings accounts (save).

[18] Frequency: three years, unless otherwise noted (p 8).

[19] Explanation taken from ECB (2013c, p. 38): "(S90 - 0.1)/0.1, where S90 is the share of sample households in the wealthiest 10%. Wealthiest households are defined as having higher net wealth than 90% of all households, calculated from weighted data."

													was discontinued and replaced by the HFCS (p 9).
Finland*	10.989 (82,2 %; 70,1 % for HH interviewed for the first time)	Central population register using master sample of 50.000 persons 16+ and members living in the same household-dwelling unit	Socio-economic criteria of the highest income-earner	All institutionalized population	CAPI (3 %) CATI (97 %) 40 h (includes general interviewer training modules of the NSI)	- yes - yes	Individual information about income and socio-economic status	from population register (High-income employees, self employed and farmers)	68	Single imputation	01/10 – 05/10	No	Register and estimated data (p 28)
France*	15.006 (69,0 %, compulsory)	List of geographical units (based on Census); list of dwellings	Region, regional population; socio-economic criteria	All institutionalized population	CAPI 27 h	- no - n.a.	Individual information about net wealth	Four strata have been made. For each primary unit and each stratum, an allocation proportional to main residences is computed. Then, a systematic selection is made within each couple stratum-primary unit	129	Hmr: 17 Mort: 12 Save: 21	10/09-02/10	In the future	---
Germany	3.565 (18,7 %)	Clusters of addresses from municipalities (NSI); list of street sections, population registers of municipalities	Demographic size, average taxable income of municipalities; additionally wealth-related parameters of street sections for large municipalities	Homeless, all institutionalized population	CAPI 11 h	- no - yes	Geographic information about taxable income	Smaller municipalities (population<100,000) and, in larger municipalities, street sections with high average income (>€92,000) are oversampled	117	Hmr: 84 Mort: 10 Save: 17	09/10-07/11	In the future (every two/three years)	---
Greece	2.971 (47,2 %)	List of municipalities (Census); random routing for secondary sampling units	NUTS II region, degree of urbanization	Homeless, all institutionalized population, smaller villages (comprising about 7 % of the total number of households)	CAPI 8 h	- yes - no	Geographic information about real estate prices	The sampling rate for Athens and Thessaloniki is proportional to the real estate prices of each cluster	-2	Hmr: 233 Mort: 154 Save: 49	06/09-09/09	No	---

Italy*	7.951 (52,1 %; 35,0 % for HH interviewed for the first time	List of municipalities; resident lists from municipalities	NUTS II region and population of the municipality	Homeless, all institutionalized population	CAPI (85 %) PAPI (15 %) 8 h	- no - no	---	---	4	Single imputation; exception: Save: 10	31/12/10	Yes (every two years)	Only interviews with a level of item non-response below a certain threshold were considered (p 49)
Luxembourg	950 (20,0 %)	Addresses of fiscal households from social security register	Individual income, nationality, employment status	Diplomats, non-resident citizens, homeless, international civil servants and in general households where no individual is entitled to be registered in the social security register, all institutionalized population	CAPI 6 h	- no - yes	Individual information about personal income subject to social contributions	20% of the gross sample was drawn from the top income decile according to the social security register and the self-employed-headed fiscal household subpopulation	55	Hmr: 86 Mort: 118 Save: 31	09/10-04/11	No	---
Malta	843 (29,9 %)	Dwelling register of the NSI	Statistical region	Diplomats, non-resident citizens, armed forces, homeless, civilians living in military institutions, prisoners	CAPI (81 %) PAPI (19 %) 9 h	- yes - yes	---	---	-5	Hmr: 4 Mort: 10 Save: 14	10/10-02/11	Not yet decided	---
Netherlands*	1.301 (57,5 %)	Postal addresses	---	Blind people, people who do not speak Dutch, all institutionalized population	CAWI n.a.	- no - no	---	---	87	Hmr: 6 Mort: 7 Save: 7	31/12/09	Yes	---
Portugal	4.404 (64,1 %, compulsory)	List of geographical areas; list of private dwellings, from Census	NUTS II region	All institutionalized population, homeless, people living in military area	CAPI 16 h	- no - no	Geographic areas	Metropolitan areas of Lisbon and Porto oversampled, 50% of gross sample drawn from these areas	16	Hmr: 16 Mort: 23 Save: 17	04/10-07/10	Not yet decided	Existing wealth survey was discontinued and replaced by the HFCS (p 9)
Slovakia	2.057 (n.a.)	List of municipalities,	NUTS III region, popula-	Homeless, all institutionalized	CAPI 4 h	- no - yes	---	---	-11	Hmr: 102 Mort: 31	09/10-10/10	Yes	Quota sampling for the

		households chosen by random walk (see miscellaneous).	tion of municipality. In each stratum, ten income quotas were prescribed, which interviewers had to fulfill	population						Save: 69			first wave -> all other countries probabilistic design. In the second wave the country will adopt a probabilistic design (p 9)
Slovenia	343 (36,4 %)	List of districts from Census; list of persons 16+ from population register	Population of the municipality, with adjustments for expected non-response	All institutionalized population, diplomats, homeless, non-citizens, armed forces, civilians living in military area	CAPI 7 h	- no - yes	Geographic areas	Municipalities of Ljubljana and Maribor were oversampled, as higher non-response rates were expected	22	Hmr: 47 Mort: 4 Save: 14	10/10-12/10	No	Reduced sample size -> "not [be] deemed fully representative for the country"(p 9)
Spain*	6.197 (56,7 %; 40,3 % for HH interviewed for the first time)	Municipal census (list of addresses) supplemented by tax office information; list of addresses	Population of the municipality, taxable wealth	All institutionalized population	CAPI 28 h	- no - yes	Individual information about taxable wealth	Eight wealth strata were defined and were oversampled progressively at higher rates	192	Hmr: 239 Mort: 104 Save: 159	11/08-07/09	Yes	---
Estonia	Not part of the first wave.												
Ireland	Not part of the first wave.												
Latvia	Not part of the first wave. Joined the Euro-area in 2014.												

* Preexisting wealth surveys continued (p 9).

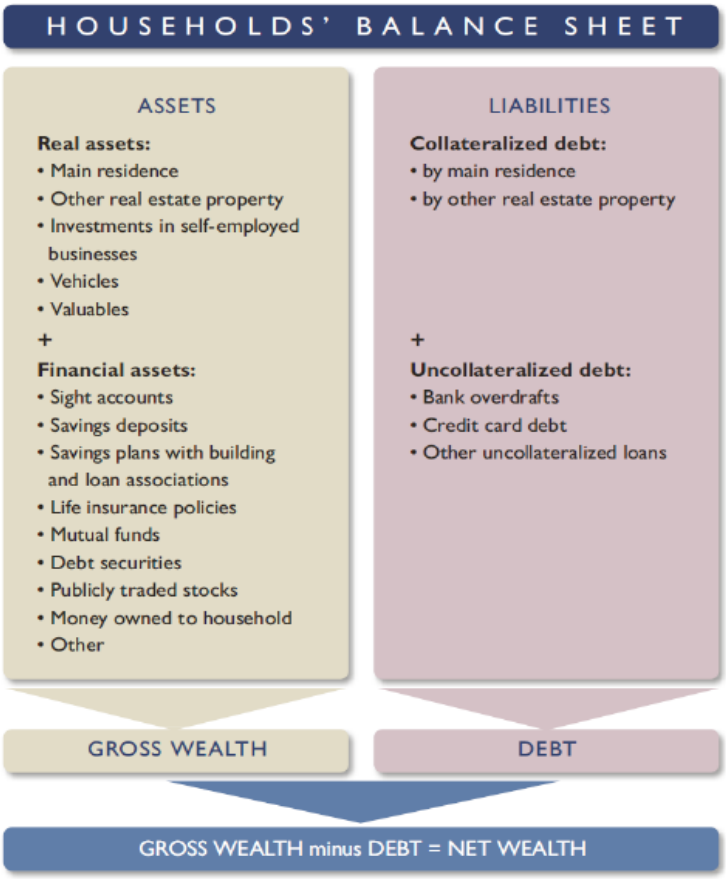
NSI: National Statistic Institute, NUTS: Nomenclature des unités territoriales statistiques

CAPI: Computer Assisted Personal Interviews, CATI: Computer Assisted Telephone Interviews, CAWI: Computer Assisted Web Interviews, PAPI: Paper- and Pencil Interview

Source: If not otherwise noted ECB (2013c).

The questionnaire in the HFCS is divided into three parts: (1) harmonized data, which is collected in every country, (2) harmonized data, which is not collected in every country and (3) country specific data, which is not harmonized. Real and financial assets as well as liabilities fall into category (1). Figure 4 gives an overview of the surveyed balance sheet in detail (core variables). In each household a reference person[20] answered the very detailed and extensive questions about the household's assets and liabilities as well as some information about intergenerational transfers, gifts and consumption patterns. Information about income, pensions and insurances policies as well as employment and demographic characteristics are available for each person in the household older than 16 years.

Figure 4: Balance sheet



Source: Fessler et al. (2012).

[20] For selection criteria see ECB (2013c), pp. 16-17.

A closer look into the data documentation and the variable catalogue reveals nevertheless some comparability issues regarding the core variables (ECB 2013c, d, e). The biggest deviations are in Finland: Several core variables are not provided at all: valuables, non-self-employment not publicly traded business, additional assets in managed accounts, money owed to the household, other assets, outstanding credit line/overdraft balance and outstanding credit cards balance (the last liability is also not surveyed in France). It is obvious that net worth in Finland is biased downwards given these restrictions. The average share of these missing wealth components from total assets (liabilities) – measured by the mean – is in the other countries almost nine percent (a bit over one percent). Other variables are only available in an aggregated form. This means for example for mortgages on the household main residence Finland only provides one variable with all mortgages on the household main residence whereas all other countries asked for the first, the second, the third and all additional mortgages on the household main residence (all together maximal four variables per household). This practice is also applied in several other countries for some assets and liabilities categories (see Table A1 and A2). Therefore the variables might be underestimated because people might tend to forget about a small e.g. mortgage if not asked separately for it. In addition analysis with all countries cannot be done separately for all the individual e.g. mortgages. Furthermore the variable “mutual funds” is not collected in a uniform way over the countries. Taken together researchers should check carefully depending on the individual research question if the chosen variables are really comparable between the countries.

3. Item Non-Response in the HFCS

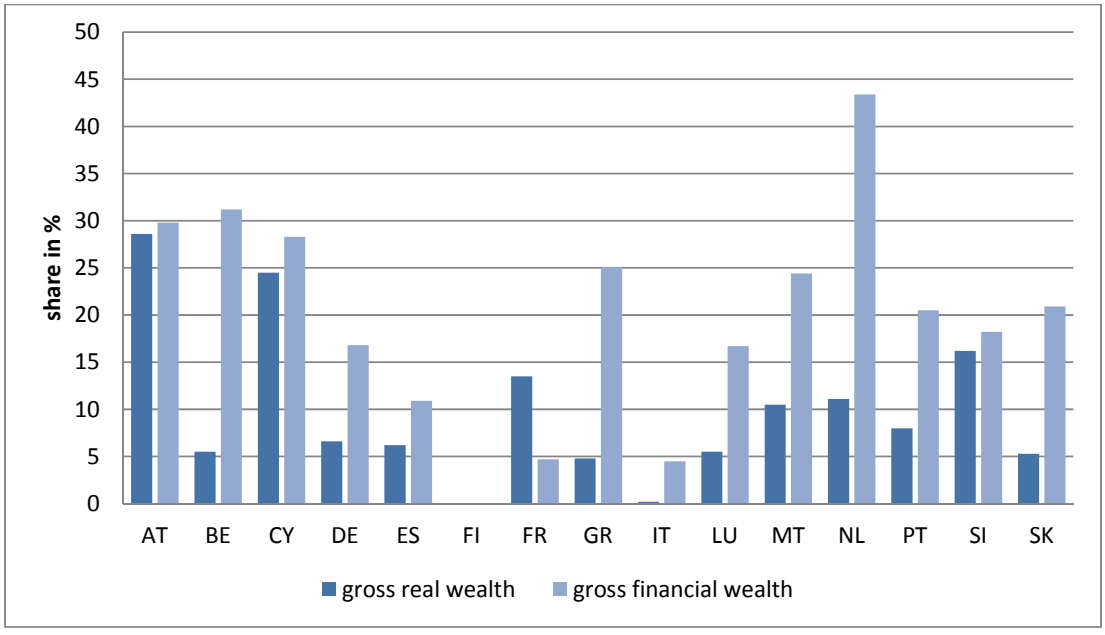
A common problem in population surveys is the failure to collect complete information due to respondents' unwillingness or lacking capability to provide a requested piece of information. This non-response behavior is called item non-response (INR), while a refusal to the total questionnaire is named as unit non-response (UNR). The UNR behavior can be adjusted for through weighting of the data and INR is typically corrected through imputation. The HFCS dataset is multiple imputed in 13 of the 15 countries using multivariate imputation by chained equations (MICE).[21] The same procedure is used in the Survey of Consumer Finances in the USA (Kennickell 1998) and in the Spanish Survey of Household Finances[22] (Barceló 2006), which served as prototypes. For each missing observation in the HFCS five values were imputed. This procedure accounts for the underlying level of uncertainty. The number of covariates used for main variables differ quite considerably. For example Spain used 239 covariates for the household main residence, Malta only four. However, it can be assumed that a more detailed set of covariates may better capture the selectivity of the non-response behavior than only a very limited set of covariates (Barceló 2008).

There are different reasons why a person refuses to answer a particular question in a survey. INR may be caused by a respondent's reservation to answer a question that appears to be too sensitive, i.e. it affects confidentiality and privacy or simply from the fact that the correct answer is not known (given the underlying complexity of the surveyed construct). In general, simple demographic information such as gender, age or marital status is not very sensitive to ask for, leading to low incidence of INR. Wealth or income questions, however, are typically associated with higher rates of INR (e.g. Riphahn and Serfling 2005, Grabka und Westermeier 2014). Furthermore the survey mode (self-administered vs. conducted by interviewers), the question structure (e.g. open-ended questions) and the interviewer's characteristics (e.g. experience or character) can have an effect on INR (Groves et al. 2001). There is increasing literature which explicitly acknowledges the INR phenomenon in micro-econometric research as a specific form of measurement error (e.g. Cameron and Trivedi 2005). Most importantly, INR on wealth questions has been found to be selective with respect to inequality (e.g. Frick et al. 2010b) and thus can lead to biased results. As long as the missing process of

[21] Exceptions: Finland and Italy. Finland mostly used register data and register-based estimations. Italy used single imputation due to a low item non-response rate (ECB 2013c p 49).
[22] This survey is now part of the HFCS.

INR is completely missing at random (MCAR) the potential bias could be disregarded (see Rubin 1987). However, it is typically assumed that INR follows a missing at random process (MAR), which means that the missing data depend on observed information in a data set. Another type of missing data is called missing not at random (MNAR). Here the missing data cannot be explained by observed characteristics and may be e.g. dependent on missing values itself. The latter both missing mechanisms are non-ignorable and need to be carefully considered. In general older people and those with less education have a higher probability for INR (Groves at el. 2001). It has been shown e.g. in the Socio-Economic Panel (SOEP) that the probability for missing wealth information is lower for males, persons with higher education levels and civil servants. It is higher for self-employed (Frick et al. 2010a, p. 6). A proper imputation has to consider the missing process and thus the underlying selectivity. Based on the imputation method applied in the HFCS the relevance of the imputed values is almost 30 percent for gross real assets in Austria and more than 40 percent for gross financial assets in the Netherlands. For the other multiple imputed countries the respective shares vary between 5 and 30 percent (see Figure 5). Hence item-non response and the respective imputation will have a significant impact on wealth levels and inequality.

Figure 5: Relevance of imputation – Weighted sum of all components of the aggregate that were imputed divided by the weighted sum of the aggregate variable



Source: Based on ECB (2013c p. 57).

We will therefore analyze the INR patterns in the HFCS for selected assets and liabilities in all countries. One additional research question is, whether the selectivity of INR is uniform across countries or if there are structural differences – which one could interpret as cultural discrepancy of INR. As Couper and De Leeuw (2003) argue, non-response in cross-national studies has so far not been extensively researched. However, differential response rates and patterns between countries can threaten the validity of cross-national comparisons (Couper & De Leeuw, 2003). In case of sensitive information such as wealth with rather high INR the problem of cross-country comparability may be of important relevance.

In order to reduce complexity we will focus on assets and liabilities with a high incidence and those with a high quantitative relevance.[23] As assets we choose the variables "*household main residence"* (real asset) and "*saving accounts"* (financial asset); both have an incidence greater than 50 percent (see Figure A1). Regarding relevance (measured by the mean) "b*usiness 1"* will be added (see Figure A2); the variable has quite a high relevance and even incidence in some countries – especially in the southern part of Europe (Malta, Portugal/Cyprus, Italy). For the liabilities the further investigation is based on "*mortgage of the household main residence 1"* and *"non-collaterised loan 1"* – they both have an incidence around 20 percent (see Figure A3). Regarding relevance (measured by the mean) no additional variable will be added.

The HFCS provides flag variables which give information about potential reasons for the non-response. In total 16 different values were presented. There is a category for edited values and one for estimated ones. The imputed category has five different characteristics. One can differentiate between the responses "Don't know" and "No answer". Furthermore the categories "Originally not collected due to missing answer to a previous question", "Originally collected from a range or from brackets" and "Collected value deleted or value not collected due to a CAPI or interviewer error" can be identified. Furthermore there are different categories for missing values, which were not imputed.[24] In addition one can see of course which

[23] Regarding assets mutual funds and private pensions/life insurances are excluded from the analysis. The first one is further divided in subgroups in several countries however not in all and the second one is collected on an individual and not on household level.
Finland and Slovenia will not be part of the analysis. The first one does not really have item non-response because of the use of register information and the second one has too few households to investigate.

[24] They were not used extensively but only in some countries, which may be a hint of problems in cross-country comparability. However, the documentation gives no information for the rationale of this procedure.

variables were collected as complete observations and which were not applicable (recorded as missing). For the following analysis we will concentrate on the edited and imputed ones.

Figure 6 illustrates the share of INR as well as the reason for it for the selected assets and liabilities by country.[25] It is obvious that the shares differ not only significantly between the components but also between and within countries. Especially France and Italy have conspicuous response patterns compared with the other countries. In case of France the value of household main residence and business 1 has been completely imputed. In the latter case respondents were only asked for a range, which is a slightly different approach than in the other countries where respondents were first asked for the "exact" value and in a second step, if they had difficulties answering the question, for a range. On the other side Italy has in almost all observed variables no imputed or edited data, which is due to the already mentioned agreement with the survey company. Relying on this information the percentage of imputed cases of the value of saving accounts above 50 percent is quite surprising. Malta and Austria have – compared with the other countries – quite high shares of INR. High numbers of imputed values introduce, given a proper imputation, broader confidence bands for these values and in consequence a poorer estimator. Countries with a general low rate of INR are Germany and Portugal.

[25] The variables refer to the question of the value of a respective wealth component not the holding of the asset or liability.

Figure 6: Information from flag-variables for selected assets and liabilities – only those holding the respective wealth/liability component

Source: Own calculations based on HFCS.

Looking at the different reasons for INR one finds that edited values are scarce. Imputations due to "previous question missing" (e.g. filter information whether a specific wealth component is held by the household) just play a minor role, although it arises more often in the Netherlands (e.g. business 1). The category "Don't know" is frequently filled for business 1, given that it is rather problematic for a respondent to give a precise valuation of their own enterprise. One can interpret a "No answer" as a strong refusal by the interviewees. However, the respective share is usually not much above 10 percent (exception: "non-collaterised loan 1" in the Netherlands).

Most of the imputed values are collected from a range or from brackets, which means that respondents do not know the exact amount of their asset or liability but subsequently unfolding brackets are offered to narrow the value down into ranges. Deleted values are especially present for business 1. In particular Belgium shows a very high share of about 40 percent of INR where original information for business 1 assets has been deleted and then imputed. This rather strong intervention in the original data is questionable and should at least be well documented. However it could also be a hint that the interview situation went not well.

4. Estimation Strategy for Item Non-Response

After the general descriptions of the different item non-response patterns for the chosen assets and liabilities as well as the differences between the countries under chapter 3 we will now analyze the similarities and differences due to characteristics. The multivariate part consists of two steps. First we will estimate a logit model with the following equation:

$$p_j(w) = F(\alpha + \beta X_j + \varepsilon_i) \quad (1)$$

where p_j denotes item non-response probability of households in country j for a particular wealth component w, α is an intercept, ε_j a random error term. X_j is the matrix of all explanatory variables which include predominately socio-demographic and no methodological information such as length of interviewer training or experience of the interviewer. Such information is not integral part of the HFCS mirco-data. Here we consider the following socio-demographic indicators: age, gender, work status and education of the reference per-

sons, income of the household, the value of its assets and liabilities,[26] its size and if children under 14 years are present. We will do this for the Euro-countries as a whole (pooled analysis) and for each country separately.

In a second step we compare item non-response characteristics for the chosen assets and liabilities between the countries with Germany as a base as this country shows rather low INR. We will do this with a nonlinear decomposition for binary variables suggested by Fairlie (1999, 2005), which is a modification of the approach from Blinder (1973) and Oaxaca (1973).

$$\hat{p}^{ger}(w) - \hat{p}^{j}(w) = \left(\hat{p}^{ger}(w) - \hat{p}_j^{ger}(w)\right) + \left(\hat{p}_j^{ger}(w) - \hat{p}^{j}(w)\right) \quad (2)$$

where $\hat{p}_j^{ger}(w)$ is the counterfactual item non-response probability of households in country j if faced with the German cultural or institutional features and other unobservables, given the distribution of characteristics X in country j. The first term on the right hand side represents differences in item non-response probability due to characteristics. The second term represents differences due to unexplained effects which we would interpret as cultural features or differences due to the interview situation.

5. Results for Item Non-Response

5.1 Logit

The average marginal effects of the pooled logit estimations which calculate item non-response probabilities for the selected assets and liabilities for the whole Euro-area with dummy variables for the individual countries confirm so far the descriptive insights from chapter 3. In addition they show that for all chosen wealth components men have a lower INR probability than women. These points into the direction that men tend to know on average their wealth portfolio better. The same holds for the liabilities of the household. The higher they are the less likely the household has INR and is therefore on average better informed about its wealth portfolio. The opposite is the case for the assets of the households (only for household main residences the assets follow the same pattern as for the liabilities). Four out of the five components show that people in the first and second income quintile (compared with the third) tend to have higher INR probabilities. In respectively two of the

[26] It is assumed that with a higher value of assets and/or liabilities the wealth portfolio gets more complicated therefore more questions have to be answered. The variables hence also serve as control for complexity.

investigated cases the following holds: people over the age of 65 have higher INR than middle aged ones; self-employed have on average higher non-response shares than employed. This seems intuitively right because in most countries they have to make provisions for their pensions on their own which makes their survey portfolio more complicated. Persons with primary education tend to have higher probabilities for INR than those with secondary education. The more people live in a household the more complex a wealth portfolio usually is. Thus the probability for INR for people in a two person household is lower than in one with five or more persons.[27]

The effects for the separate country regressions do not show clear patterns. Significant effects on the Euro-area level are not generally confirmed on the country level. This can be partly explained by small sample sizes at the country level. But we do also find opposing effects. While e.g. a strong positive significant effect at the Euro-area level can be found for those with a household income in the bottom quintile for the value of housing main residence, in Malta and Slovakia these households tend to have a lower probability for INR. One can here only speculate why these two countries differ in this respect.

Other opposing effects apply for asset and liability level when looking at the value of housing main residence. At the Euro-area level these covariates point to a significantly lower probability for INR–which is confirmed for at least three HFCS countries–while Slovakia stands out with significant positive effects. When looking at saving accounts again Slovakia and Malta show opposite effects for asset levels.[28] A common pattern across countries however can be found for gender. Although this covariate is not significant in all HFCS countries, we find the general effect, that women have a significantly higher probability for INR. This finding is confirmed by other wealth surveys (e.g. Frick et. al. 2010b). Altogether there is not a harmonized non-response pattern across the HFCS countries. This implies the necessity for well aligned imputation models. But as indicated above the documentation is not very precise how and with which imputation models non-response has been handled. Additionally, cultural differences in non-response behavior across countries should be analyzed further.

[27] The described results are significant at least at the 10 percent level. The estimations are done without weights. Including them only leads to minor changes in the values but not in sign.

[28] Again contrarious effects can be found for Slovakia when considering liability levels for mortgages of household main residence.

5.2 Fairlie

The results from the Fairlie decomposition show that for the majority of the cases the investigated characteristics only explain a small part of the differences between the countries (usually less than 20 percent) with Germany as a base. This means that there are unobserved factors like methodological differences – such as the survey mode however these are fixed countries effects and thus could not be used in this decomposition approach – or cultural features in the non-response behaviors which play a relevant role in explaining item non-response. For the value of the household main residence significant effects can be found for gender, whether the respondent is self-employed and the household size. In general the determinants with the highest impact are gender, value of assets, value of liabilities and the highest income quintile (with decreasing incidence for the wealth components). Negative estimates for the controls indicate that the country differences in the characteristics reduce the country differences in the INR rates, as can be seen e.g. for the household size. In at least five of the analyzed ten HFCS countries one-person households have a significant lower probability for non-response compared to the reference country Germany. Therefore the gap would have been larger if the characteristics had been the same in both countries.[29] Again the results of the decomposition method generally confirm our findings from the logit analyses, that one cannot find a harmonized non-response pattern across the HFCS countries.

6. Conclusion

The HFCS micro dataset is a milestone for cross-country comparisons of private wealth in the Euro-area. The core questionnaire and also the survey methodology was largely pre-harmonized, however there are significant differences across country surveys which impair cross-country comparability, and thus should be carefully taken into account by researchers. Depending on the individual research question the researchers should check carefully if the available data really fits their needs. The aim of this paper is to present a synopsis of methodological differences in the HFCS dataset across countries to shed some light on data quality and comparability of the HFCS and potential restrictions for wealth comparisons. In addition the selectivity of item non-response in a cross-national setting is investigated, which gives a first insight in different non-response patterns for the chosen assets and liabilities as

[29] In the case of a negative gap positive estimates reduce the gap.

well as for the individual countries. Taken together the HFCS is still the best dataset for cross country comparisons of wealth levels and inequality in the Euro area and it is definitely a first (big) step into the right direction.

Nevertheless some improvements are necessary. First, we would suggest publishing detailed methodological reports for all countries in English, in addition to the methodological report from the ECB. Second, methodological differences which are not based on country specific differences should be reduced or better even vanish, e.g. the application of more harmonized sampling frames, the reduced sample size in Slovenia, the survey mode in Cyprus, the Netherlands and in Finland, the full harmonization of the collected and provided wealth and liability components (which are essential for cross-country comparability of wealth levels and inequality), a harmonization of the reference periods, and even a more harmonized procedure with respect to the oversampling of top wealth households, given that these households have a pronounced effect when looking at the skewed wealth distribution.[30] Third, necessary country specific differences like in the case of weighting or imputation should be documented in more detail e.g. is paradata used for the construction of weights and, if so, what covariates are used for the imputation. If it is not possible to make some information publicly available due to data protection, one could examine the possibility of a protected platform for data users. Additionally, countries with a very low initial response rate like Germany should make endeavors to raise the willingness of the respondents to take part in such a survey, not only to reduce potential bias in a cross sectional, but more importantly in a longitudinal sense. Further, exemptions such as Italy, that achieved very low item non-response by a special agreement with the survey company, to only consider interviews below a certain level of non-response as completed, should be avoided to ease comparability. Finally, it should be checked whether paradata could be made available for external researchers to better separate substantial cross-country differences from methodological distinctiveness e.g. for investigating item non-response patterns further.

[30] An oversample identifier could also ease analyses about the relevance of such a methodological add-on.

7. Literature

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Appendix

Table A1: Differences in variables collection (assets)

selected assets	AT	BE	CY	DE	ES	FI	FR	GR	IT	LU	MT	NL	PT	SI	SK
household main residence						~									
other property 1						*									
other property 2						*									
other property 3		*				*				*	*	*		*	
additional properties						~									
cars						~	*								
other vehicles						~	*		*						
valuables						!									
business 1						*									
business 2						*									
business 3		*				*				*	*	*		*	
additional business						~									
sight accounts						~									
saving accounts						*									
bonds															
non-selfemployment not publicly traded business						!									
publicly traded shares															
additional assets in managed accounts						!									
money owned to household						!									
other assets						!									
pensions/life insurance						~									

! = not collected, * = contained in other variable, ~ = estimated

Source: HFCS.

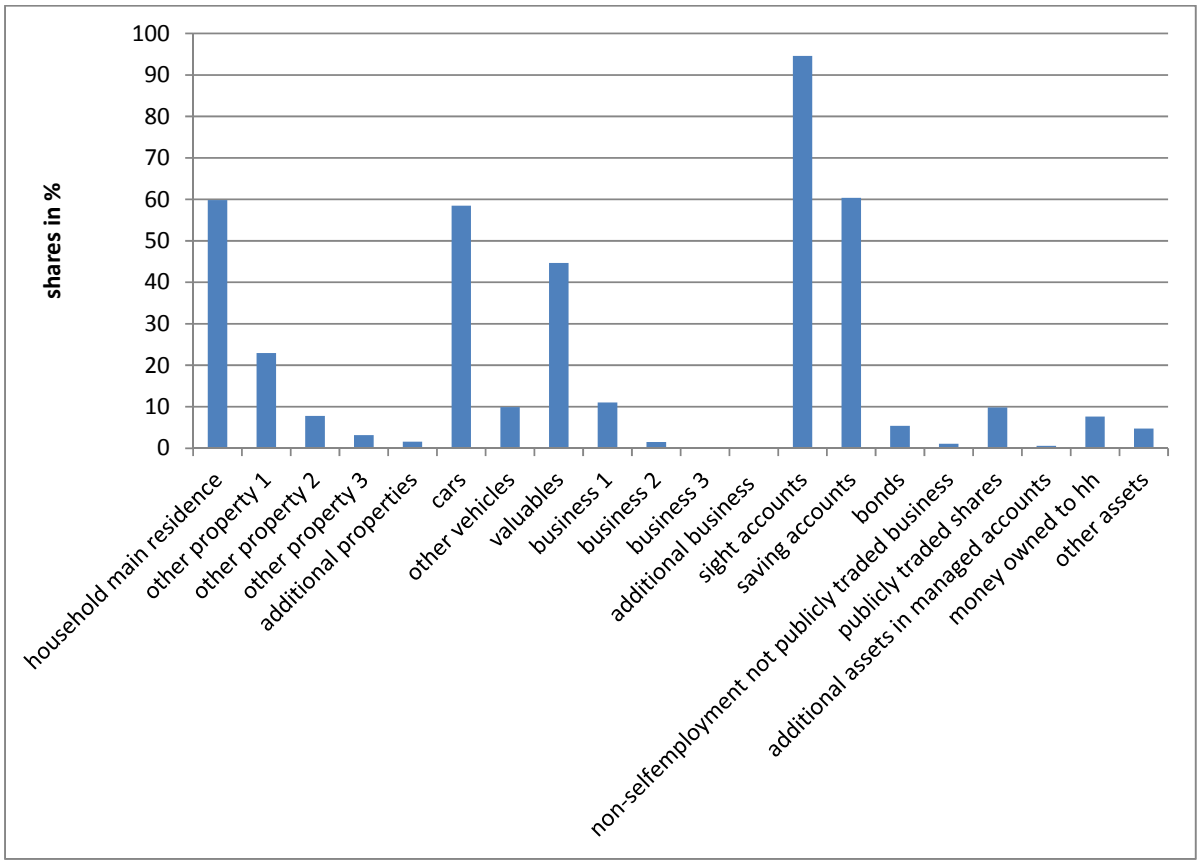
Table A2: Differences in variables collection (liabilities)

selected liabilities	AT	BE	CY	DE	ES	FI	FR	GR	IT	LU	MT	NL	PT	SI	SK
household main residence mortgage 1						*									
household main residence mortgage 2						*									
household main residence mortgage 3		*				*				*	*	*		*	
additional household main residence loans															
other property mortgage 1						*									
other property mortgage 2						*									
other property mortgage 3		*				*				*	*	*		*	
additional other property loans						*									
outstanding credit line/overdraft balance						!									
outstanding credit cards balance						!	!								
non-collaterised loan 1						*									
non-collaterised loan 2						*									
non-collaterised loan 3		*				*				*	*	*		*	
additional non-collaterised loans															

! = not collected, * = contained in other variable

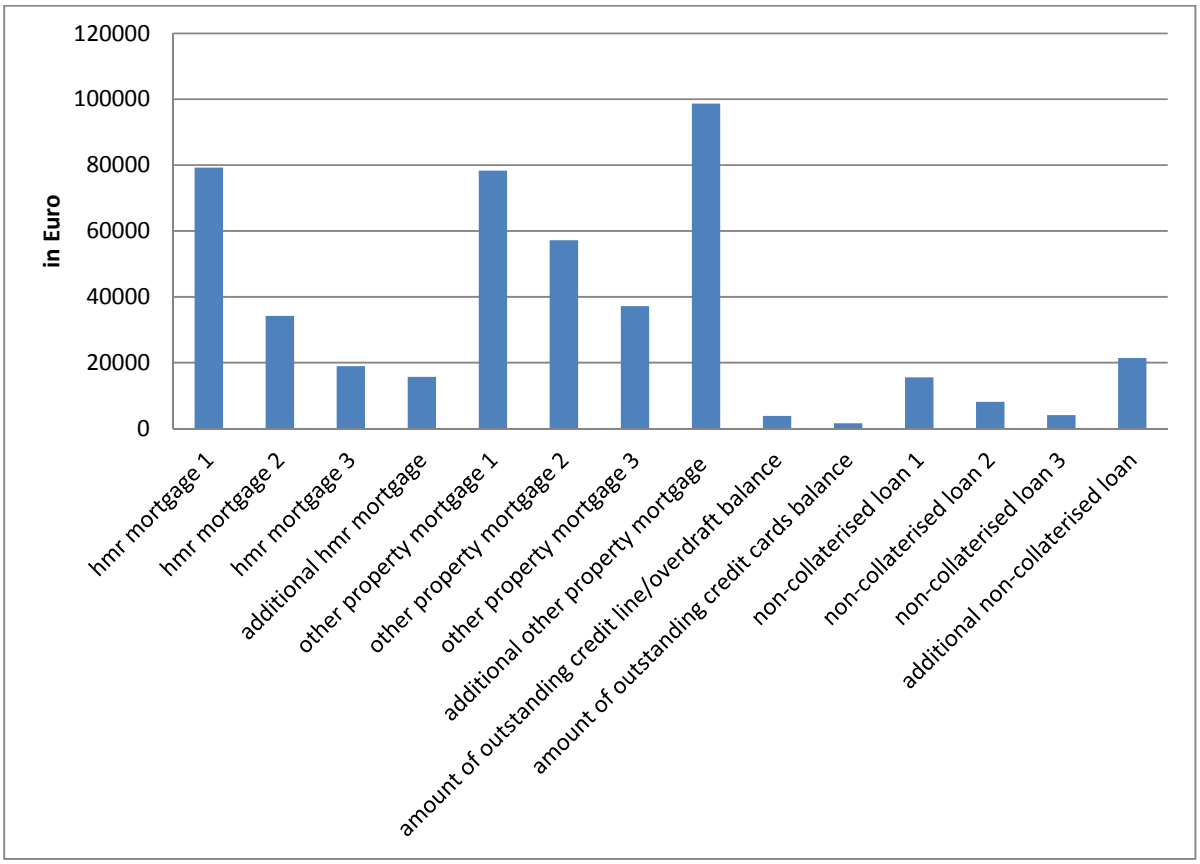
Source: HFCS.

Figure A1: Incidences of assets



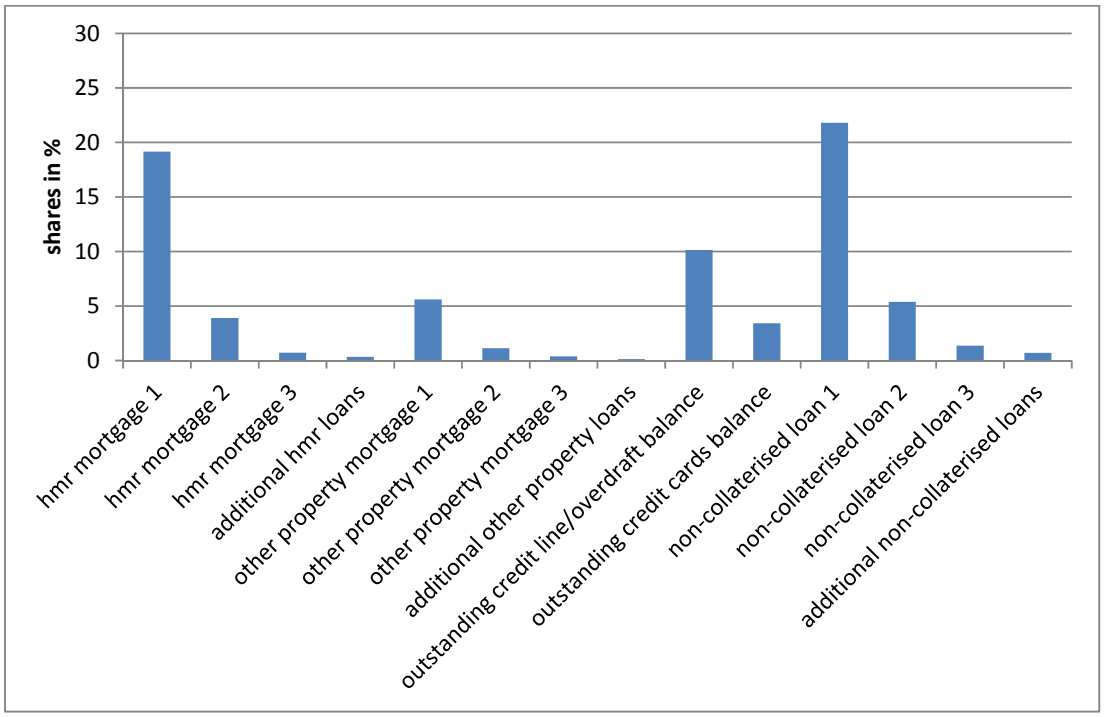
Source: HFCS.

Figure A2: Relevance of assets (measured by the mean)



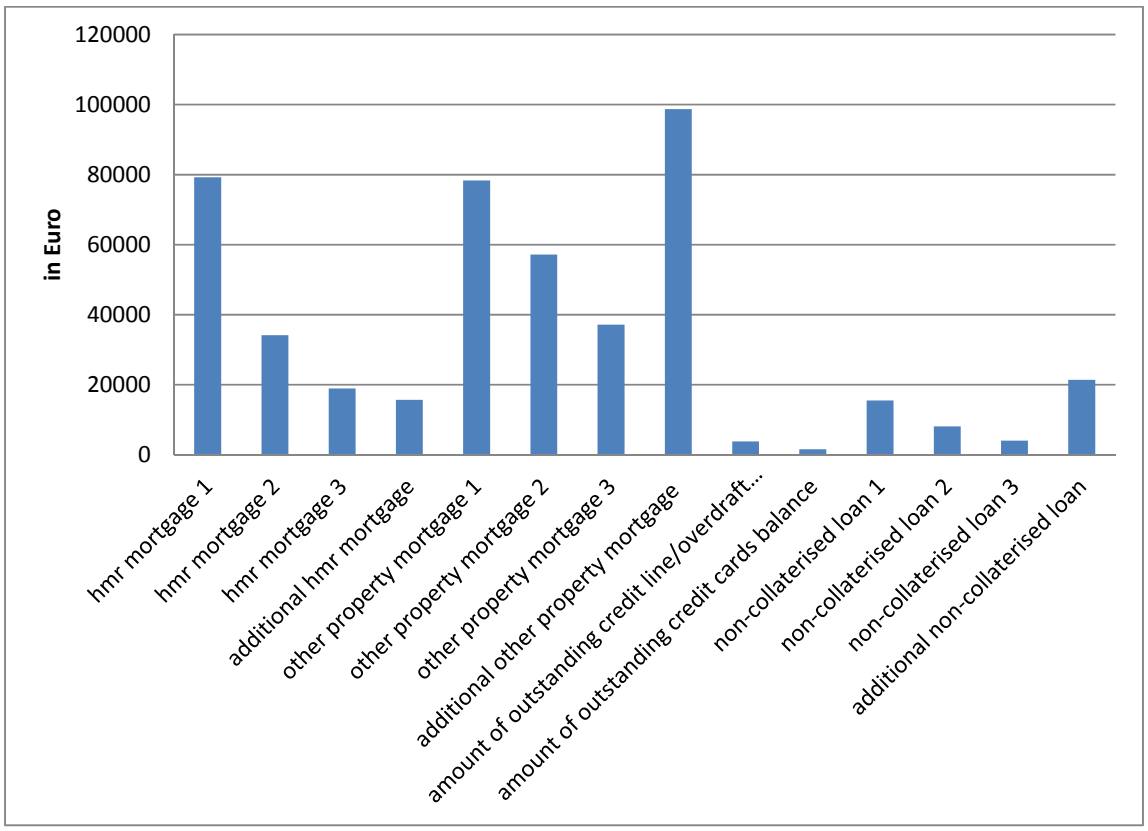
Source: HFCS.

Figure A3: Incidences of liabilities



Source: HFCS.

Figure A4: Relevance of liabilities (measured by the mean)



Source: HFCS.

Table A3: Average marginal effects of the pooled logit estimations (assets)

	INR_hmr	INR_business1	INR_savingaccount
gender_man	-0.030	-0.073	-0.021
	(0.005)***	(0.014)***	(0.006)***
age_16b34	0.014	0.033	0.008
	(0.009)	(0.022)	(0.010)
age_35b44	0.010	0.029	0.003
	(0.008)	(0.018)	(0.009)
age_55b64	0.011	-0.005	-0.012
	(0.008)	(0.018)	(0.009)
age_65plus	0.032	0.002	-0.010
	(0.010)***	(0.028)	(0.012)
workst_self	0.032	-0.009	0.025
	(0.008)***	(0.015)	(0.009)***
workst_unem/other	0.007	0.057	0.001
	(0.008)	(0.024)**	(0.010)
workst_ret	-0.003	0.043	-0.015
	(0.008)	(0.029)	(0.010)
edu_primary	0.006	-0.018	0.012
	(0.007)	(0.019)	(0.007)*
edu_tertiary	0.010	-0.004	-0.015
	(0.006)	(0.015)	(0.007)**
1. income quintile	0.023	0.008	0.039
	(0.008)***	(0.034)	(0.010)***
2. income quintile	0.008	0.052	0.003
	(0.007)	(0.027)*	(0.009)
4. income quintile	-0.005	-0.022	-0.004
	(0.007)	(0.021)	(0.008)
5. income quintile	0.002	-0.022	-0.002
	(0.007)	(0.020)	(0.008)
assets	-0.012	0.013	0.006
	(0.003)***	(0.005)**	(0.002)***
liabilities	-0.003	-0.003	-0.004
	(0.001)***	(0.001)**	(0.001)***
hhsize_1	0.002	-0.048	-0.048
	(0.007)	(0.024)**	(0.007)***
hhsize_3	-0.002	0.010	0.044
	(0.007)	(0.018)	(0.008)***
hhsize_4	-0.003	0.012	0.060
	(0.008)	(0.019)	(0.010)***
hhsize_5plus	0.020	0.025	0.075
	(0.010)*	(0.023)	(0.013)***
hhchild_yes	-0.004	-0.027	-0.047
	(0.008)	(0.018)	(0.009)***
housest_mort	0.006		
	(0.009)		
country_AT	0.102	0.271	0.233
	(0.010)***	(0.029)***	(0.013)***
country_BE	-0.024	0.131	0.084
	(0.012)**	(0.031)***	(0.015)***
country_CY	0.090	0.185	-0.044
	(0.012)***	(0.026)***	(0.029)
country_ES	-0.016	0.091	0.010
	(0.009)*	(0.021)***	(0.016)
country_GR	-0.030	-0.080	0.129
	(0.011)***	(0.030)***	(0.040)***
country_LU	0.047	0.145	0.277
	(0.014)***	(0.040)***	(0.017)***
country_MT	0.135	0.219	0.434
	(0.012)***	(0.043)***	(0.018)***
country_NL	-0.043	0.214	-0.284
	(0.017)**	(0.046)***	(0.036)***
country_PT	-0.046		-0.021
	(0.011)***		(0.017)
country_SK	0.050	0.188	0.226
	(0.011)***	(0.027)***	(0.019)***
country_IT		-0.468	0.319
		(0.035)***	(0.013)***
country_FR			0.489
			(0.009)***
N	19,756	4,553	29,280
R2_P	0.06	0.23	0.20

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

Table A4: Average marginal effects of the pooled logit estimations (liabilities)

	INR_hmrmort1	INR_loan1
gender_man	-0.036	-0.023
	(0.009)***	(0.009)**
age_16b34	0.021	-0.017
	(0.014)	(0.015)
age_35b44	0.014	0.000
	(0.012)	(0.013)
age_55b64	-0.016	0.010
	(0.015)	(0.014)
age_65plus	-0.035	0.047
	(0.027)	(0.022)**
workst_self	0.000	-0.003
	(0.012)	(0.013)
workst_unem/other	0.006	0.003
	(0.015)	(0.015)
workst_ret	0.009	-0.046
	(0.021)	(0.019)**
edu_primary	0.017	0.025
	(0.012)	(0.011)**
edu_tertiary	-0.011	-0.014
	(0.010)	(0.011)
1. income quintile	0.051	0.011
	(0.020)***	(0.018)
2. income quintile	0.031	-0.005
	(0.016)**	(0.015)
4. income quintile	-0.002	-0.018
	(0.013)	(0.013)
5. income quintile	0.008	-0.012
	(0.013)	(0.013)
assets	0.019	0.011
	(0.006)***	(0.003)***
liabilities	-0.024	-0.021
	(0.003)***	(0.002)***
hhsize_1	0.009	-0.005
	(0.015)	(0.014)
hhsize_3	-0.008	-0.006
	(0.014)	(0.013)
hhsize_4	0.016	0.013
	(0.015)	(0.015)
hhsize_5plus	0.012	0.025
	(0.018)	(0.018)
hhchild_yes	-0.015	0.003
	(0.013)	(0.013)
country_AT	0.216	0.143
	(0.022)***	(0.029)***
country_BE	0.087	0.020
	(0.022)***	(0.030)
country_CY	0.000	-0.054
	(0.026)	(0.034)
country_ES	-0.050	-0.018
	(0.022)**	(0.023)
country_FR	0.118	0.153
	(0.018)***	(0.019)***
country_GR	0.080	-0.068
	(0.024)***	(0.034)**
country_LU	0.013	-0.028
	(0.029)	(0.036)
country_MT	0.147	0.132
	(0.038)***	(0.040)***
country_NL	-0.035	0.338
	(0.027)	(0.028)***
country_PT	0.078	-0.034
	(0.021)***	(0.029)
country_SK	0.163	0.065
	(0.028)***	(0.030)**
N	8,438	8,964
R2_P	0.05	0.06

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

Table A5: Average marginal effects of the country logit estimations (assets)

INR_hmr	AT	BE	CY	DE	ES	GR	LU	MT	NL	PT	SK
gender_man	-0.063	-0.001	-0.080	-0.044	-0.029	-0.028	0.010	-0.014	-0.012	-0.016	-0.026
	(0.026)**	(0.013)	(0.025)***	(0.014)***	(0.009)***	(0.014)*	(0.028)	(0.045)	(0.020)	(0.012)	(0.020)
age_16b34	0.095	0.009	-0.023	0.009	0.029	0.002	0.008	-0.132	0.019	0.078	-0.025
	(0.049)*	(0.029)	(0.042)	(0.033)	(0.023)	(0.026)	(0.055)	(0.088)	(0.029)	(0.032)**	(0.031)
age_35b44	0.010	-0.043	-0.002	0.040	-0.002	0.023	0.037	-0.013	-0.023	0.062	-0.000
	(0.043)	(0.029)	(0.036)	(0.023)*	(0.018)	(0.024)	(0.042)	(0.065)	(0.026)	(0.025)**	(0.031)
age_55b64	-0.077	-0.003	-0.012	0.021	0.008	0.074	0.005	0.017	-0.067	0.058	0.072
	(0.046)*	(0.023)	(0.043)	(0.021)	(0.014)	(0.023)***	(0.045)	(0.060)	(0.030)**	(0.021)***	(0.035)**
age_65plus	-0.017	-0.000	-0.005	0.012	0.032	0.084	0.035	0.049	-0.091	0.061	0.091
	(0.055)	(0.033)	(0.086)	(0.032)	(0.016)**	(0.028)***	(0.059)	(0.071)	(0.040)**	(0.024)**	(0.057)
workst_self	0.067	0.021	0.015	0.046	0.029	0.026	0.059	0.198	-0.012	0.021	-0.036
	(0.041)*	(0.028)	(0.038)	(0.021)**	(0.016)*	(0.022)	(0.044)	(0.074)***	(0.032)	(0.020)	(0.037)
workst_unem/other	0.046	0.039	0.009	0.026	-0.017	0.030	0.008	0.034	-0.017	0.005	0.051
	(0.047)	(0.023)*	(0.041)	(0.022)	(0.014)	(0.021)	(0.050)	(0.060)	(0.038)	(0.020)	(0.034)
workst_ret	0.016	0.006	0.072	-0.000	-0.012	-0.011	-0.032	-0.032	0.072	0.022	-0.033
	(0.049)	(0.028)	(0.078)	(0.028)	(0.015)	(0.025)	(0.051)	(0.067)	(0.035)**	(0.019)	(0.044)
edu_primary	0.106	-0.013	-0.010	-0.033	0.007	-0.065	0.003	-0.004	0.007	-0.006	0.029
	(0.033)***	(0.018)	(0.034)	(0.028)	(0.013)	(0.018)***	(0.034)	(0.048)	(0.022)	(0.019)	(0.050)
edu_tertiary	-0.008	0.006	-0.021	0.005	0.008	0.004	0.002	-0.001	0.009	0.013	0.047
	(0.040)	(0.015)	(0.029)	(0.014)	(0.013)	(0.019)	(0.032)	(0.061)	(0.020)	(0.023)	(0.024)**
1. income quintile	0.121	0.023	0.048	0.013	0.018	0.005	0.087	-0.137	0.004	0.046	-0.068
	(0.046)***	(0.025)	(0.043)	(0.034)	(0.014)	(0.023)	(0.051)*	(0.070)*	(0.028)	(0.017)***	(0.040)*
2. income quintile	-0.031	0.024	-0.021	0.053	0.009	0.002	-0.043	0.000	-0.001	0.029	-0.025
	(0.041)	(0.022)	(0.039)	(0.025)**	(0.013)	(0.021)	(0.052)	(0.060)	(0.024)	(0.017)*	(0.031)
4. income quintile	-0.022	0.005	-0.040	0.004	-0.012	0.016	-0.027	0.145	-0.046	0.003	-0.027
	(0.038)	(0.021)	(0.037)	(0.022)	(0.014)	(0.022)	(0.042)	(0.059)**	(0.026)*	(0.018)	(0.030)
5. income quintile	-0.035	0.022	-0.045	-0.004	-0.021	0.046	0.002	0.122	-0.025	0.021	0.043
	(0.039)	(0.022)	(0.040)	(0.022)	(0.014)	(0.023)**	(0.044)	(0.064)*	(0.022)	(0.019)	(0.031)
assets	0.010	-0.003	-0.045	-0.005	-0.003	-0.014	-0.008	-0.084	0.007	-0.019	0.037
	(0.016)	(0.009)	(0.014)***	(0.008)	(0.005)	(0.009)	(0.020)	(0.025)***	(0.016)	(0.005)***	(0.015)**
liabilities	0.000	-0.003	-0.005	-0.001	-0.004	-0.003	-0.011	-0.014	0.002	-0.002	0.012
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)***	(0.002)	(0.004)**	(0.006)**	(0.003)	(0.002)	(0.003)***
hhsize_1	-0.049	0.012	-0.099	0.046	0.004	0.025	-0.042	0.083	0.026	0.002	0.023
	(0.035)	(0.018)	(0.046)**	(0.019)**	(0.011)	(0.018)	(0.040)	(0.060)	(0.022)	(0.014)	(0.034)
hhsize_3	-0.049	0.038	-0.028	0.012	0.008	-0.036	-0.054	-0.128	0.046	0.010	-0.036
	(0.043)	(0.021)*	(0.041)	(0.022)	(0.012)	(0.020)*	(0.045)	(0.058)**	(0.028)	(0.015)	(0.030)
hhsize_4	-0.030	0.016	-0.023	0.017	0.003	-0.057	0.020	-0.124	0.035	0.017	-0.037
	(0.050)	(0.026)	(0.043)	(0.025)	(0.015)	(0.024)**	(0.045)	(0.064)*	(0.032)	(0.020)	(0.035)
hhsize_5plus	0.100	0.067	-0.044	0.027	0.011	-0.030	0.002	-0.231	0.067	0.095	-0.050
	(0.058)*	(0.030)**	(0.046)	(0.031)	(0.022)	(0.034)	(0.054)	(0.090)**	(0.035)*	(0.023)***	(0.047)
hhchild_yes	-0.018	-0.041	0.024	0.036	-0.008	-0.039	-0.051	0.119	-0.032	-0.024	0.041
	(0.049)	(0.026)	(0.035)	(0.025)	(0.017)	(0.026)	(0.045)	(0.065)*	(0.028)	(0.020)	(0.029)
housest_mort	0.037	-0.009	0.012	0.000	0.006	0.023	-0.076	-0.046	0.014	0.047	0.064
	(0.057)	(0.028)	(0.035)	(0.023)	(0.017)	(0.027)	(0.050)	(0.074)	(0.033)	(0.025)*	(0.039)*
N	1,161	1,697	975	1,970	5,296	1,986	659	642	839	2,951	1,580
R2_P	0.05	0.03	0.10	0.04	0.03	0.07	0.05	0.06	0.07	0.10	0.03

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

INR_business1	AT	BE	CY	DE	ES	GR	IT	LU	MT	NL	SK
gender_man	-0.162	-0.229	-0.131	-0.149	-0.078	-0.011	0.009	-0.301	0.242	-0.419	-0.058
	(0.062)***	(0.078)***	(0.062)**	(0.040)***	(0.036)**	(0.054)	(0.010)	(0.094)***	(0.193)	(0.235)*	(0.061)
age_16b34	-0.022	0.161	-0.009	0.121	0.139	-0.066	0.014	0.336	0.060	-0.030	0.054
	(0.107)	(0.131)	(0.098)	(0.077)	(0.073)*	(0.072)	(0.020)	(0.226)	(0.211)	(0.249)	(0.080)
age_35b44	0.038	-0.073	0.006	0.038	0.047	0.011	0.016	0.048	0.273	0.067	0.064
	(0.083)	(0.117)	(0.072)	(0.058)	(0.049)	(0.063)	(0.015)	(0.132)	(0.157)*	(0.241)	(0.081)
age_55b64	-0.004	-0.021	0.008	-0.049	0.003	-0.013	0.014	-0.026	0.078	-0.261	0.092
	(0.090)	(0.119)	(0.089)	(0.055)	(0.040)	(0.087)	(0.014)	(0.155)	(0.151)	(0.241)	(0.108)
age_65plus	-0.064	0.051	0.375	-0.072	0.034	-0.185	0.006	0.221	-0.203	-0.699	0.117
	(0.151)	(0.260)	(0.203)*	(0.097)	(0.056)	(0.222)	(0.017)	(0.320)	(0.255)	(0.390)*	(0.344)
workst_self	0.056	0.113	-0.107	-0.026	0.021	-0.036	0.001	0.042	-0.343	-0.037	-0.108
	(0.073)	(0.090)	(0.060)*	(0.047)	(0.042)	(0.072)	(0.013)	(0.121)	(0.179)*	(0.166)	(0.070)
workst_unem/other	0.264	0.276	0.335	0.050	0.174	0.053	-0.005	0.000	0.097	0.000	-0.207
	(0.206)	(0.171)	(0.254)	(0.092)	(0.058)***	(0.085)	(0.025)	(0.000)	(0.196)	(0.000)	(0.107)*
workst_ret	0.091	0.254	0.145	0.007	0.087	0.034	0.024	-0.132	-0.213	0.132	-0.085
	(0.146)	(0.223)	(0.217)	(0.103)	(0.065)	(0.154)	(0.016)	(0.290)	(0.235)	(0.326)	(0.212)
edu_primary	0.051	0.080	-0.041	-0.147	-0.019	-0.066	-0.013	-0.333	-0.138	-0.194	-0.255
	(0.127)	(0.152)	(0.085)	(0.130)	(0.043)	(0.061)	(0.010)	(0.188)*	(0.139)	(0.286)	(0.293)
edu_tertiary	-0.147	0.014	-0.001	0.012	-0.010	0.050	-0.014	-0.005	0.008	-0.648	0.073
	(0.072)**	(0.087)	(0.061)	(0.042)	(0.039)	(0.063)	(0.013)	(0.112)	(0.158)	(0.270)**	(0.068)
1. income quintile	-0.028	0.195	0.230	-0.054	-0.032	0.135	0.000	0.235	-0.618	-0.194	-0.139
	(0.187)	(0.301)	(0.152)	(0.129)	(0.087)	(0.098)	(0.000)	(0.301)	(0.319)*	(0.360)	(0.223)
2. income quintile	-0.062	-0.459	0.192	0.034	0.119	0.103	-0.008	-0.166	0.052	-0.019	0.282
	(0.161)	(0.185)**	(0.104)*	(0.112)	(0.067)*	(0.095)	(0.019)	(0.209)	(0.227)	(0.248)	(0.140)**
4. income quintile	-0.197	-0.115	0.042	-0.186	0.043	0.010	-0.003	-0.098	-0.272	0.033	-0.005
	(0.105)*	(0.128)	(0.084)	(0.076)**	(0.053)	(0.085)	(0.013)	(0.207)	(0.182)	(0.239)	(0.112)
5. income quintile	-0.170	-0.072	0.112	-0.178	0.031	0.103	-0.001	-0.353	-0.434	0.084	-0.068
	(0.101)*	(0.121)	(0.082)	(0.067)***	(0.050)	(0.074)	(0.013)	(0.186)*	(0.166)***	(0.207)	(0.098)
assets	0.048	-0.004	-0.027	0.038	0.002	0.014	-0.000	0.140	0.102	0.367	0.024
	(0.029)	(0.037)	(0.025)	(0.015)**	(0.013)	(0.025)	(0.004)	(0.035)***	(0.065)	(0.122)***	(0.022)
liabilities	-0.012	-0.016	0.002	0.001	-0.003	-0.007	-0.000	-0.009	-0.006	-0.027	0.006
	(0.006)**	(0.007)**	(0.007)	(0.004)	(0.003)	(0.005)	(0.001)	(0.011)	(0.011)	(0.021)	(0.007)
hhsize_1	-0.229	0.094	-0.079	-0.057	-0.046	-0.122	0.003	0.286	-0.186	-0.108	-0.176
	(0.097)**	(0.133)	(0.155)	(0.082)	(0.060)	(0.138)	(0.014)	(0.154)*	(0.233)	(0.222)	(0.102)*
hhsize_3	-0.054	0.097	0.037	-0.012	-0.018	-0.022	-0.012	0.139	0.138	-0.107	0.083
	(0.090)	(0.125)	(0.110)	(0.060)	(0.040)	(0.070)	(0.012)	(0.144)	(0.168)	(0.220)	(0.086)
hhsize_4	-0.132	0.121	-0.068	0.073	-0.005	0.011	-0.014	0.404	-0.117	-0.779	0.135
	(0.097)	(0.128)	(0.109)	(0.064)	(0.044)	(0.069)	(0.014)	(0.163)**	(0.162)	(0.281)***	(0.096)
hhsize_5plus	0.057	0.035	0.011	0.017	0.064	-0.000	-0.001	-0.027	0.075	-0.761	-0.034
	(0.120)	(0.161)	(0.111)	(0.081)	(0.057)	(0.086)	(0.017)	(0.215)	(0.187)	(0.416)*	(0.118)
hhchild_yes	-0.028	0.033	0.020	0.022	-0.045	-0.050	-0.006	0.086	0.019	0.454	-0.153
	(0.100)	(0.123)	(0.071)	(0.062)	(0.045)	(0.062)	(0.015)	(0.149)	(0.158)	(0.261)*	(0.073)**
N	215	163	332	470	1,174	319	1,290	80	76	52	297
R2_P	0.15	0.12	0.06	0.08	0.03	0.05	0.06	0.29	0.24	0.17	0.07

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

INR_ savingaccount	AT	BE	CY	DE	ES	FR	GR	IT	LU	MT	NL	PT	SK
gender_man	-0.015	-0.038	-0.045	-0.036	-0.064	-0.013	0.010	0.036	-0.093	-0.062	-0.002	-0.004	-0.026
	(0.022)	(0.019)**	(0.032)	(0.013)***	(0.020)***	(0.009)	(0.085)	(0.024)	(0.039)**	(0.045)	(0.013)	(0.021)	(0.042)
age_16b34	0.021	0.039	-0.022	0.009	0.144	-0.007	-0.066	-0.050	0.054	-0.113	0.028	0.011	-0.002
	(0.036)	(0.038)	(0.062)	(0.023)	(0.046)***	(0.017)	(0.149)	(0.058)	(0.066)	(0.086)	(0.024)	(0.044)	(0.061)
age_35b44	0.027	0.032	0.087	0.010	0.055	-0.014	-0.050	0.011	0.117	-0.129	0.033	-0.022	-0.042
	(0.036)	(0.036)	(0.046)*	(0.022)	(0.038)	(0.015)	(0.131)	(0.042)	(0.057)**	(0.069)*	(0.020)*	(0.033)	(0.065)
age_55b64	-0.059	-0.027	0.023	-0.070	0.051	0.001	0.054	-0.036	-0.051	-0.139	0.006	-0.001	0.132
	(0.039)	(0.035)	(0.056)	(0.023)***	(0.031)*	(0.015)	(0.120)	(0.040)	(0.071)	(0.058)**	(0.018)	(0.027)	(0.071)*
age_65plus	0.017	-0.061	0.289	-0.064	0.079	-0.023	-0.169	-0.054	0.051	-0.203	0.017	0.028	0.149
	(0.046)	(0.050)	(0.100)***	(0.034)*	(0.035)**	(0.020)	(0.182)	(0.049)	(0.095)	(0.071)***	(0.024)	(0.035)	(0.129)
workst_self	0.077	0.070	-0.036	0.020	0.029	0.018	0.249	0.018	0.068	-0.046	0.026	-0.037	-0.044
	(0.038)**	(0.042)*	(0.048)	(0.023)	(0.031)	(0.013)	(0.106)**	(0.042)	(0.059)	(0.080)	(0.018)	(0.029)	(0.075)
workst_ unem/other	0.061	0.053	-0.018	0.032	-0.016	-0.040	0.339	0.073	0.057	-0.045	-0.005	-0.006	0.038
	(0.037)	(0.033)	(0.059)	(0.022)	(0.030)	(0.017)**	(0.119)***	(0.044)*	(0.075)	(0.063)	(0.018)	(0.033)	(0.077)
workst_ret	0.020	0.053	-0.229	0.031	0.004	-0.035	0.082	0.045	-0.041	-0.023	-0.024	-0.023	-0.203
	(0.040)	(0.042)	(0.099)**	(0.031)	(0.032)	(0.017)**	(0.160)	(0.042)	(0.078)	(0.064)	(0.022)	(0.029)	(0.097)**
edu_primary	0.033	0.023	-0.033	-0.002	0.013	0.001	0.259	0.019	0.022	0.016	0.002	0.052	0.392
	(0.030)	(0.026)	(0.049)	(0.024)	(0.026)	(0.011)	(0.104)**	(0.028)	(0.051)	(0.048)	(0.015)	(0.027)**	(0.143)***
edu_tertiary	0.011	-0.028	0.092	-0.025	-0.004	-0.030	0.108	0.027	0.018	-0.060	-0.009	0.015	0.070
	(0.032)	(0.022)	(0.038)**	(0.014)*	(0.025)	(0.011)***	(0.099)	(0.039)	(0.045)	(0.058)	(0.013)	(0.031)	(0.049)
1. income quintile	0.077	0.026	0.065	0.018	0.046	0.046	0.169	-0.006	-0.079	0.049	0.006	0.071	-0.068
	(0.038)**	(0.036)	(0.060)	(0.028)	(0.036)	(0.016)***	(0.165)	(0.041)	(0.078)	(0.064)	(0.017)	(0.029)**	(0.094)
2. income quintile	-0.042	-0.015	0.065	0.029	0.037	0.009	-0.193	-0.015	0.026	0.014	-0.022	0.011	-0.128
	(0.033)	(0.032)	(0.054)	(0.023)	(0.032)	(0.014)	(0.187)	(0.038)	(0.068)	(0.057)	(0.018)	(0.028)	(0.067)*
4. income quintile	-0.086	0.009	-0.043	-0.039	0.065	0.017	-0.164	-0.036	-0.118	0.089	-0.026	-0.012	0.075
	(0.032)***	(0.030)	(0.052)	(0.020)*	(0.029)**	(0.013)	(0.133)	(0.037)	(0.060)**	(0.058)	(0.018)	(0.026)	(0.062)
5. income quintile	-0.108	0.024	-0.075	-0.044	0.014	0.028	-0.027	-0.044	-0.059	0.038	-0.009	-0.005	0.212
	(0.035)***	(0.031)	(0.052)	(0.020)**	(0.030)	(0.014)**	(0.123)	(0.039)	(0.061)	(0.061)	(0.016)	(0.026)	(0.067)***
assets	0.032	0.017	0.023	0.021	0.012	-0.003	-0.020	-0.009	0.035	-0.028	0.011	0.046	-0.039
	(0.007)***	(0.007)**	(0.012)**	(0.005)***	(0.008)	(0.003)	(0.039)	(0.009)	(0.016)**	(0.014)*	(0.006)*	(0.008)***	(0.019)**
liabilities	-0.006	-0.010	-0.009	-0.004	-0.002	-0.004	-0.022	-0.010	-0.010	-0.003	0.001	-0.002	-0.002
	(0.002)**	(0.002)***	(0.003)***	(0.001)***	(0.002)	(0.001)***	(0.010)**	(0.003)***	(0.004)**	(0.005)	(0.001)	(0.002)	(0.007)
hhsize_1	-0.083	-0.012	-0.020	-0.022	-0.017	-0.067	-0.179	0.061	-0.073	0.007	0.033	-0.033	0.015
	(0.028)***	(0.026)	(0.060)	(0.019)	(0.025)	(0.011)***	(0.178)	(0.034)*	(0.056)	(0.057)	(0.015)**	(0.026)	(0.076)
hhsize_3	0.082	0.029	0.080	0.032	-0.016	0.060	0.021	0.076	0.109	-0.011	0.011	0.010	-0.093
	(0.036)**	(0.032)	(0.049)	(0.020)	(0.025)	(0.015)***	(0.125)	(0.034)**	(0.060)*	(0.054)	(0.022)	(0.022)	(0.062)
hhsize_4	0.198	0.012	0.014	0.040	0.035	0.085	0.091	0.060	0.081	0.036	-0.020	0.006	-0.108
	(0.042)***	(0.038)	(0.056)	(0.024)	(0.029)	(0.017)***	(0.138)	(0.040)	(0.066)	(0.062)	(0.033)	(0.029)	(0.075)
hhsize_5plus	0.144	0.063	0.029	0.065	0.111	0.084	-0.152	0.079	0.029	0.052	-0.002	0.010	-0.016
	(0.056)**	(0.047)	(0.059)	(0.032)**	(0.041)***	(0.021)***	(0.253)	(0.058)	(0.078)	(0.085)	(0.034)	(0.044)	(0.093)
hhchild_yes	-0.164	-0.031	-0.061	-0.019	-0.052	-0.044	0.055	-0.134	-0.073	-0.013	-0.034	-0.012	0.014
	(0.040)***	(0.035)	(0.044)	(0.023)	(0.034)	(0.016)***	(0.116)	(0.040)***	(0.059)	(0.066)	(0.028)	(0.029)	(0.062)
N	2,080	1,832	460	2,895	1,918	13,082	118	2,029	704	705	1,002	1,901	554
R2_P	0.04	0.02	0.13	0.03	0.03	0.01	0.22	0.02	0.04	0.04	0.12	0.04	0.06

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

Table A6: Average marginal effects of the country logit estimations (liabilities)

INR_hmrmort1	AT	BE	CY	DE	ES	FR	GR	LU	MT	NL	PT	SK
gender_man	-0.149	-0.044	-0.095	-0.074	-0.074	0.017	-0.018	0.013	0.031	-0.026	-0.042	0.019
	(0.049)***	(0.033)	(0.029)***	(0.023)***	(0.020)***	(0.021)	(0.046)	(0.041)	(0.104)	(0.031)	(0.032)	(0.062)
age_16b34	0.164	-0.068	0.036	0.088	0.011	-0.013	-0.033	0.154	-0.010	0.013	-0.040	-0.204
	(0.083)**	(0.057)	(0.044)	(0.039)**	(0.031)	(0.032)	(0.065)	(0.069)**	(0.193)	(0.050)	(0.050)	(0.101)**
age_35b44	0.107	-0.030	-0.015	0.012	-0.014	-0.006	0.009	0.116	0.001	0.021	0.027	-0.065
	(0.068)	(0.043)	(0.039)	(0.032)	(0.025)	(0.025)	(0.057)	(0.059)**	(0.177)	(0.039)	(0.035)	(0.099)
age_55b64	0.049	-0.083	0.007	0.009	0.004	-0.011	-0.058	-0.025	-2.922	-0.003	0.004	-0.084
	(0.096)	(0.063)	(0.051)	(0.033)	(0.027)	(0.035)	(0.087)	(0.086)	(239.007)	(0.038)	(0.042)	(0.174)
age_65plus	-0.013	-0.083	-0.053	0.027	0.002	-0.103	-0.287	0.035	0.000	0.049	0.009	0.000
	(0.135)	(0.117)	(0.140)	(0.058)	(0.044)	(0.071)	(0.165)*	(0.154)	(0.000)	(0.059)	(0.072)	(0.000)
workst_self	0.109	0.053	-0.067	0.009	0.052	0.002	-0.088	0.039	-0.467	0.043	-0.040	-0.036
	(0.073)	(0.057)	(0.052)	(0.032)	(0.027)*	(0.024)	(0.058)	(0.063)	(0.315)	(0.042)	(0.042)	(0.103)
workst_unem/other	0.074	0.062	-0.066	0.010	0.026	0.019	-0.080	0.015	-0.125	-0.082	-0.019	0.288
	(0.090)	(0.059)	(0.056)	(0.039)	(0.023)	(0.049)	(0.058)	(0.076)	(0.141)	(0.058)	(0.049)	(0.112)**
workst_ret	-0.077	0.100	0.015	0.016	0.038	0.047	0.044	0.034	2.813	-0.062	0.008	0.162
	(0.108)	(0.089)	(0.112)	(0.053)	(0.042)	(0.051)	(0.101)	(0.117)	(239.007)	(0.054)	(0.054)	(0.332)
edu_primary	0.075	-0.030	-0.003	-0.061	0.001	0.048	0.010	-0.010	0.163	0.007	0.041	0.000
	(0.076)	(0.058)	(0.054)	(0.059)	(0.023)	(0.026)*	(0.054)	(0.056)	(0.135)	(0.033)	(0.034)	(0.000)
edu_tertiary	-0.042	0.018	0.054	0.036	-0.012	-0.023	-0.086	0.021	0.233	-0.011	-0.070	0.056
	(0.070)	(0.038)	(0.034)	(0.023)	(0.023)	(0.022)	(0.058)	(0.049)	(0.122)*	(0.029)	(0.044)	(0.070)
1. income quintile	0.119	0.071	0.128	0.084	0.037	0.033	-0.187	0.091	0.148	0.014	0.026	0.148
	(0.131)	(0.071)	(0.057)**	(0.066)	(0.039)	(0.046)	(0.132)	(0.096)	(0.294)	(0.049)	(0.059)	(0.138)
2. income quintile	-0.074	-0.026	0.064	0.089	0.019	0.024	0.056	0.070	0.306	0.026	0.052	0.121
	(0.092)	(0.071)	(0.051)	(0.058)	(0.030)	(0.038)	(0.067)	(0.071)	(0.191)	(0.040)	(0.047)	(0.095)
4. income quintile	-0.089	-0.073	-0.010	0.064	0.021	-0.000	-0.062	-0.025	0.181	-0.014	0.033	0.002
	(0.074)	(0.052)	(0.048)	(0.045)	(0.025)	(0.029)	(0.062)	(0.065)	(0.166)	(0.037)	(0.038)	(0.085)
5. income quintile	-0.025	0.015	-0.018	0.054	-0.023	-0.002	0.035	-0.065	0.010	0.009	0.053	0.095
	(0.074)	(0.050)	(0.050)	(0.044)	(0.028)	(0.030)	(0.060)	(0.070)	(0.172)	(0.036)	(0.039)	(0.101)
assets	-0.012	0.014	-0.002	0.049	0.032	-0.011	-0.035	0.069	0.124	-0.041	0.047	-0.069
	(0.034)	(0.029)	(0.018)	(0.015)***	(0.011)***	(0.015)	(0.038)	(0.033)**	(0.088)	(0.029)	(0.022)**	(0.056)
liabilities	0.018	-0.017	0.021	-0.040	-0.027	-0.025	-0.002	-0.011	-0.009	-0.002	0.004	0.092
	(0.015)	(0.015)	(0.017)	(0.007)***	(0.005)***	(0.009)***	(0.022)	(0.021)	(0.062)	(0.014)	(0.013)	(0.037)**
hhsize_1	-0.048	0.073	-0.080	0.057	-0.121	0.033	-0.185	0.039	0.040	0.009	0.061	-0.018
	(0.084)	(0.056)	(0.061)	(0.041)	(0.045)***	(0.034)	(0.133)	(0.065)	(0.223)	(0.035)	(0.048)	(0.134)
hhsize_3	-0.126	0.070	-0.073	0.018	-0.062	0.004	-0.039	0.108	0.111	0.024	-0.021	0.004
	(0.075)*	(0.055)	(0.052)	(0.033)	(0.027)**	(0.033)	(0.068)	(0.076)	(0.210)	(0.043)	(0.039)	(0.104)
hhsize_4	-0.016	-0.032	-0.021	0.060	-0.012	0.041	0.063	0.021	0.153	0.019	-0.005	-0.090
	(0.086)	(0.058)	(0.048)	(0.035)*	(0.026)	(0.034)	(0.066)	(0.083)	(0.198)	(0.047)	(0.043)	(0.112)
hhsize_5plus	0.025	-0.017	-0.008	0.020	0.013	0.028	-0.032	0.117	0.303	0.011	0.012	-0.197
	(0.104)	(0.068)	(0.051)	(0.047)	(0.033)	(0.041)	(0.088)	(0.079)	(0.229)	(0.055)	(0.060)	(0.157)
hhchild_yes	-0.083	0.020	-0.089	0.017	0.001	-0.011	0.027	-0.097	0.001	-0.010	-0.021	0.031
	(0.079)	(0.048)	(0.038)**	(0.033)	(0.024)	(0.029)	(0.054)	(0.063)	(0.182)	(0.044)	(0.035)	(0.086)
N	391	639	547	835	1,172	2,185	402	326	89	613	1,013	223
R2_P	0.06	0.04	0.09	0.16	0.12	0.02	0.06	0.07	0.15	0.04	0.02	0.08

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

INR_loan1	AT	BE	CY	DE	ES	FR	GR	LU	MT	NL	PT	SK
gender_man	-0.001	-0.026	-0.097	-0.067	-0.056	0.009	-0.030	-0.095	0.136	-0.022	-0.046	-0.043
	(0.055)	(0.037)	(0.031)***	(0.025)***	(0.019)***	(0.015)	(0.033)	(0.036)***	(0.113)	(0.095)	(0.030)	(0.048)
age_16b34	0.077	0.003	0.006	0.006	0.016	-0.064	-0.027	0.011	-0.239	0.176	0.021	-0.001
	(0.083)	(0.063)	(0.049)	(0.038)	(0.035)	(0.025)**	(0.047)	(0.055)	(0.200)	(0.114)	(0.048)	(0.068)
age_35b44	0.070	-0.033	0.035	0.038	-0.020	-0.020	0.006	-0.007	0.082	0.171	-0.001	0.040
	(0.083)	(0.053)	(0.039)	(0.037)	(0.029)	(0.021)	(0.043)	(0.051)	(0.119)	(0.112)	(0.042)	(0.069)
age_55b64	0.138	-0.032	0.067	0.079	-0.005	0.028	-0.052	-0.013	-0.149	-0.184	0.006	-0.124
	(0.107)	(0.062)	(0.045)	(0.038)**	(0.026)	(0.024)	(0.079)	(0.062)	(0.135)	(0.100)*	(0.044)	(0.167)
age_65plus	0.276	0.040	0.104	0.069	0.024	0.049	-0.009	-0.000	-0.188	-0.236	-0.001	-0.097
	(0.137)**	(0.123)	(0.100)	(0.077)	(0.033)	(0.038)	(0.099)	(0.116)	(0.296)	(0.184)	(0.064)	(0.289)
workst_self	-0.110	-0.118	0.041	0.029	0.056	-0.031	-0.009	0.058	-0.220	-0.023	0.019	0.008
	(0.130)	(0.128)	(0.036)	(0.043)	(0.027)**	(0.021)	(0.044)	(0.054)	(0.172)	(0.133)	(0.046)	(0.075)
workst_unem/other	-0.105	0.030	-0.021	0.099	0.022	-0.033	0.028	0.054	0.029	0.082	-0.048	0.069
	(0.094)	(0.052)	(0.047)	(0.034)***	(0.024)	(0.031)	(0.043)	(0.053)	(0.134)	(0.103)	(0.049)	(0.072)
workst_ret	-0.146	-0.021	-0.091	-0.044	-0.004	-0.079	0.023	0.059	0.171	0.213	0.019	0.270
	(0.117)	(0.106)	(0.098)	(0.069)	(0.035)	(0.031)**	(0.089)	(0.076)	(0.170)	(0.167)	(0.050)	(0.209)
edu_primary	0.068	0.017	0.030	0.068	-0.000	0.024	-0.022	0.026	0.213	0.258	-0.003	-0.115
	(0.074)	(0.049)	(0.041)	(0.040)*	(0.024)	(0.018)	(0.040)	(0.044)	(0.119)*	(0.090)***	(0.039)	(0.182)
edu_tertiary	0.039	0.033	0.047	0.021	0.006	-0.052	-0.050	-0.002	-0.074	0.029	-0.054	0.069
	(0.088)	(0.043)	(0.034)	(0.028)	(0.025)	(0.018)***	(0.048)	(0.045)	(0.146)	(0.088)	(0.058)	(0.059)
1. income quintile	-0.018	-0.014	-0.017	-0.022	0.022	0.005	0.018	-0.052	-0.298	0.211	0.098	0.113
	(0.102)	(0.070)	(0.055)	(0.047)	(0.034)	(0.032)	(0.059)	(0.081)	(0.227)	(0.141)	(0.053)*	(0.091)
2. income quintile	0.025	-0.042	-0.039	-0.063	-0.006	0.006	-0.014	0.044	-0.156	0.058	0.023	-0.081
	(0.087)	(0.065)	(0.043)	(0.045)	(0.028)	(0.025)	(0.051)	(0.061)	(0.131)	(0.118)	(0.048)	(0.094)
4. income quintile	-0.051	-0.127	-0.077	-0.052	-0.018	-0.018	0.001	-0.027	-0.052	0.081	0.007	0.102
	(0.080)	(0.057)**	(0.044)*	(0.038)	(0.027)	(0.022)	(0.047)	(0.066)	(0.127)	(0.106)	(0.039)	(0.066)
5. income quintile	-0.120	-0.087	-0.079	-0.010	-0.047	-0.014	0.020	0.049	-0.040	0.088	0.022	0.124
	(0.092)	(0.054)	(0.044)*	(0.037)	(0.028)*	(0.023)	(0.047)	(0.059)	(0.144)	(0.100)	(0.044)	(0.071)*
assets	0.033	0.005	0.004	0.019	0.045	-0.003	0.003	-0.014	-0.019	0.022	0.015	-0.006
	(0.016)**	(0.011)	(0.010)	(0.007)**	(0.008)***	(0.005)	(0.011)	(0.011)	(0.033)	(0.030)	(0.010)	(0.013)
liabilities	-0.042	-0.004	-0.002	-0.008	-0.030	-0.011	-0.020	0.011	0.050	0.036	-0.004	0.005
	(0.014)***	(0.012)	(0.011)	(0.006)	(0.003)***	(0.005)**	(0.010)*	(0.012)	(0.033)	(0.029)	(0.008)	(0.017)
hhsize_1	-0.029	0.085	-0.059	0.047	-0.022	0.007	-0.075	0.028	0.259	-0.114	-0.007	-0.000
	(0.073)	(0.065)	(0.087)	(0.037)	(0.033)	(0.023)	(0.061)	(0.066)	(0.216)	(0.099)	(0.049)	(0.108)
hhsize_3	0.057	0.135	-0.032	0.028	-0.017	-0.011	-0.080	-0.141	-0.021	0.187	-0.013	-0.027
	(0.094)	(0.061)**	(0.059)	(0.035)	(0.025)	(0.022)	(0.049)	(0.097)	(0.166)	(0.119)	(0.039)	(0.075)
hhsize_4	-0.103	0.126	0.071	-0.095	-0.002	0.019	-0.037	0.066	0.151	-0.040	-0.019	0.017
	(0.118)	(0.066)*	(0.047)	(0.054)*	(0.028)	(0.025)	(0.047)	(0.056)	(0.157)	(0.120)	(0.048)	(0.082)
hhsize_5plus	0.120	0.190	0.100	-0.099	0.040	0.002	-0.062	0.015	0.123	-0.059	0.065	0.050
	(0.136)	(0.075)**	(0.053)*	(0.065)	(0.033)	(0.030)	(0.068)	(0.070)	(0.191)	(0.141)	(0.052)	(0.100)
hhchild_yes	-0.109	-0.031	-0.070	0.058	0.017	0.024	0.011	0.006	-0.032	-0.198	-0.041	0.021
	(0.102)	(0.052)	(0.037)*	(0.040)	(0.026)	(0.023)	(0.041)	(0.051)	(0.122)	(0.115)*	(0.041)	(0.065)
N	252	379	403	690	1,276	4,130	381	291	103	212	554	293
R2_P	0.10	0.06	0.12	0.07	0.20	0.01	0.06	0.14	0.18	0.10	0.04	0.07

* $p<0.1$; ** $p<0.05$; *** $p<0.01$, standard error in parentheses

Table A7: Decomposition of INR rates (assets)

INR_hmr	AT		%	BE		%	CY	%	ES		%	GR		%	LU		%	MT		%	NL		%	PT		%	SK		%
gender_man	-0.007	***	35.00	-0.004	***	50.00	0	0.00	-0.005	***	83.33	-0.011	***	36.67	-0.003	**	150.00	-0.006	***	54.55	0.007	***	63.64	0.003	***	37.50	-0.009	***	19.15
age_16b34	0		0.00	0		0.00	-0.001	7.14	0		0.00	-0.001		3.33	-0.001		50.00	0		0.00	0		0.00	0		0.00	-0.002		4.26
age_35b44	-0.003		15.00	-0.002		25.00	-0.008	57.14	-0.001		16.67	-0.006		20.00	-0.006		300.00	-0.004		36.36	-0.002		-18.18	-0.001		-12.50	-0.007		14.89
age_55b64	0		0.00	0.001		-12.50	0.003	-21.43	0.001		-16.67	0.002		-6.67	0		0.00	0		0.00	-0.001		-9.09	0		0.00	0.002		-4.26
age_65plus	0.001		-5.00	0.001		-12.50	0.003	-21.43	0		0.00	0.002		-6.67	0.002		-100.00	0.001		-9.09	0.001		9.09	0		0.00	0.003		-6.38
workst_self	-0.002		10.00	0.003	*	-37.50	-0.002	14.29	0		0.00	-0.004		13.33	0		0.00	0.003	*	-27.27	0.002	*	18.18	0		0.00	0.001		-2.13
workst_unem/other	0.001		-5.00	0		0.00	0	0.00	-0.007		116.67	-0.005		16.67	-0.001		50.00	-0.008		72.73	0		0.00	0		0.00	0		0.00
workst_ret	0		0.00	0		0.00	0	0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00
edu_primary	0.003		-15.00	0.004		-50.00	0.003	-21.43	0.013		-216.67	0.011		-36.67	0.004		-200.00	0.018		-163.64	0.004		36.36	0.018		225.00	-0.001		2.13
edu_tertiary	0.001		-5.00	-0.001		12.50	-0.001	7.14	0		0.00	0.001		-3.33	0		0.00	0.001		-9.09	-0.001		-9.09	0.001		12.50	0.001		-2.13
1. income quintile	-0.001		5.00	-0.001		12.50	-0.001	7.14	-0.001		16.67	-0.001		3.33	-0.001		50.00	-0.002		18.18	-0.001		-9.09	-0.001		-12.50	-0.002		4.26
2. income quintile	-0.005		25.00	-0.002		25.00	-0.002	14.29	-0.002		33.33	-0.005		16.67	0		0.00	-0.005		45.45	-0.001		-9.09	-0.002		-25.00	-0.007	*	14.89
4. income quintile	0		0.00	0		0.00	0	0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00
5. income quintile	-0.001		5.00	-0.001		12.50	-0.001	7.14	-0.001		16.67	-0.001		3.33	0		0.00	-0.001		9.09	-0.001		-9.09	-0.001		-12.50	-0.001		2.13
assets	-0.001		5.00	0.001		-12.50	0.003	-21.43	0.001		-16.67	-0.005		16.67	0.005		-250.00	-0.001		9.09	0.001		9.09	-0.004		-50.00	-0.01		21.28
liabilities	-0.003		15.00	-0.001		12.50	0.004	-28.57	-0.003		50.00	-0.003		10.00	0.003		-150.00	-0.004		36.36	0.004		36.36	-0.002		-25.00	-0.006		12.77
hhsize_1	-0.007	**	35.00	-0.007	*	87.50	0.002	-14.29	-0.003		50.00	0		0.00	-0.003		150.00	-0.002		18.18	-0.005	**	-45.45	-0.004	*	-50.00	-0.005	*	10.64
hhsize_3	0		0.00	0		0.00	0	0.00	0		0.00	-0.001		3.33	0		0.00	0		0.00	0.001		9.09	0		0.00	-0.001		2.13
hhsize_4	0.001		-5.00	0.001		-12.50	-0.001	7.14	0		0.00	-0.001		3.33	0		0.00	-0.001		9.09	0.001		9.09	0		0.00	0		0.00
hhsize_5plus	0.001		-5.00	0.001		-12.50	-0.004	28.57	0.001		-16.67	0.001		-3.33	0		0.00	0.001		-9.09	0.001		9.09	0.002		25.00	0.001		-2.13
hhchild_yes	0.001		-5.00	0		0.00	-0.01	71.43	0.001		-16.67	-0.002		6.67	-0.002		100.00	-0.001		9.09	0.001		9.09	0		0.00	-0.004		8.51
housest_mort	0		0.00	0		0.00	0	0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00
			105			87.5		92.86			100			96.67			150			100			100			112.5			100
Pr_0	0.091			0.091			0.091		0.091			0.091			0.091			0.091			0.091			0.091			0.091		
Pr_1	0.245			0.075			0.179		0.091			0.09			0.121			0.326			0.051			0.07			0.186		
Diff	-0.153			0.017			-0.088		0			0.002			-0.03			-0.234			0.04			0.021			-0.095		
Expl	-0.02		13.07	-0.008		-47.06	-0.014	15.91	-0.006			-0.03		-1500	-0.002		6.67	-0.011		4.70	0.011		27.5	0.008		38.10	-0.047		49.47
Unexpl	-0.133		86.93	0.025		147.06	-0.074	84.09	0.006			0.032		1600	-0.028		93.33	-0.223		95.30	0.029		72.5	0.013		61.90	-0.048		50.53
			100			100		100						100			100			100			100			100			100

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

INR_business1	AT		%	BE		%	CY		%	ES		%	GR		%	IT		%	LU		%	MT		%	NL		%	SK		%
gender_man	-0.011	***	28.95	0.001		-1.92	0.017	***	-19.10	0.012	***	109.09	-0.031	***	63.27	0.001		2.56	0.009	**	-16.36	-0.007	**	46.67	0.009	*	-24.32	-0.022	***	220.00
age_16b34	-0.003		7.89	-0.01		19.23	-0.009		10.11	0.003		27.27	-0.024		48.98	-0.002		-5.13	-0.004		7.27	-0.004		26.67	-0.011		29.73	-0.032		320.00
age_35b44	-0.002		5.26	-0.002		3.85	-0.004		4.49	0.001		9.09	-0.006		12.24	-0.002		-5.13	-0.004		7.27	-0.001		6.67	-0.001		2.70	-0.003		30.00
age_55b64	-0.004		10.53	-0.001		1.92	-0.006		6.74	0		0.00	-0.009		18.37	-0.001		-2.56	-0.002		3.64	0.002		-13.33	-0.001		2.70	-0.008		80.00
age_65plus	-0.005		13.16	-0.003		5.77	-0.006		6.74	0.005		45.45	-0.008		16.33	-0.001		-2.56	-0.003		5.45	-0.006		40.00	-0.004		10.81	-0.009		90.00
workst_self	0.002		-5.26	-0.002		3.85	-0.005		5.62	-0.001		-9.09	0.003		-6.12	0		0.00	0		0.00	-0.006		40.00	-0.003		8.11	0		0.00
workst_unem/other	-0.001		2.63	-0.001		1.92	0.001		-1.12	-0.004		-36.36	-0.007		14.29	-0.003		-7.69	0.001		-1.82	-0.013		86.67	-0.004		10.81	-0.003		30.00
workst_ret	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0		0.00	0.001		-10.00
edu_primary	0.005		-13.16	0.005		-9.62	0.011		-12.36	0.029		263.64	0.034		-69.39	0.037		94.87	0.008		-14.55	0.061		-406.67	0.008		-21.62	-0.003		30.00
edu_tertiary	0.004		-10.53	-0.001		1.92	0		0.00	0		0.00	0.005		-10.20	0.003		7.69	0.002		-3.64	0.003		-20.00	-0.003		8.11	0.004		-40.00
1. income quintile	0.001		-2.63	0		0.00	0		0.00	0		0.00	0.002		-4.08	0.001		2.56	0.001		-1.82	0.001		-6.67	0.003		-8.11	-0.001		10.00
2. income quintile	-0.001		2.63	-0.001		1.92	-0.002		2.25	0		0.00	-0.002		4.08	-0.001		-2.56	-0.002		3.64	-0.002		13.33	-0.002		5.41	-0.001		10.00
4. income quintile	0.003		-7.89	0.001		-1.92	0.009	**	-10.11	-0.002		-18.18	0		0.00	0.001		2.56	-0.008		14.55	0.002		-13.33	-0.008		21.62	-0.004		40.00
5. income quintile	-0.022	***	57.89	-0.015	**	28.85	-0.04	***	44.94	-0.005		-45.45	-0.035	***	71.43	-0.02	**	-51.28	-0.019	**	34.55	-0.031	**	206.67	-0.043	***	116.22	-0.004		40.00
assets	-0.006	**	15.79	-0.014	**	26.92	-0.031	**	34.83	-0.023	**	-209.09	0.042	**	-85.71	0.026	**	66.67	-0.035	**	63.64	-0.009		60.00	0.015	**	-40.54	0.078	**	-780.00
liabilities	0.001		-2.63	0		0.00	-0.002		2.25	0.001		9.09	0.001		-2.04	0.002		5.13	-0.001		1.82	0.001		-6.67	-0.001		2.70	0.002		-20.00
hhsize_1	0.001		-2.63	0.002		-3.85	-0.002		2.25	0		0.00	-0.002		4.08	0.002		5.13	0.005		-9.09	0		0.00	0.007		-18.92	0.003		-30.00
hhsize_3	0		0.00	0		0.00	0		0.00	0.001		9.09	0.001		-2.04	0.001		2.56	0		0.00	0		0.00	-0.001		2.70	0.001		-10.00
hhsize_4	0.001		-2.63	-0.005		9.62	-0.008		8.99	-0.004		-36.36	-0.01		20.41	-0.004		-10.26	-0.001		1.82	-0.004		26.67	0.001		-2.70	-0.005		50.00
hhsize_5plus	-0.001		2.63	-0.001		1.92	-0.005		5.62	0		0.00	0		0.00	0		0.00	-0.001		1.82	-0.002		13.33	0.001		-2.70	0		0.00
hhchild_yes	-0.001		2.63	-0.004		7.69	-0.008		8.99	-0.001		-9.09	-0.004		8.16	-0.002		-5.13	-0.002		3.64	0		0.00	0		0.00	-0.003		30.00
			102.63			98.08			101.12			109.09			102.04			97.44			101.82			100.00			102.70			90
Pr_0	0.27			0.27			0.27			0.27			0.27			0.27			0.27			0.27			0.27			0.27		
Pr_1	0.679			0.46			0.539			0.409			0.21			0.021			0.488			0.632			0.559			0.542		
Diff	-0.409			-0.19			-0.269			-0.139			0.06			0.249			-0.218			-0.361			-0.289			-0.272		
Expl	-0.038		9.29	-0.052		27.37	-0.089		33.09	0.011		-7.91	-0.049		-81.67	0.039		15.66	-0.055		25.23	-0.015		4.16	-0.037		12.80	-0.01		3.68
Unexpl	-0.371		90.71	-0.138		72.63	-0.18		66.91	-0.15		107.91	0.109		181.67	0.21		84.34	-0.163		74.77	-0.346		95.84	-0.252		87.20	-0.262		96.32
			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

INR_savingaccount	AT		%	BE		%	CY		%	ES		%	FR		%	GR		%	IT		%	LU		%	MT		%	NL		%	PT		%	SK		%
gender_man	-0.005	***	23.81	-0.001	**	5.26	0.003	***	-6.52	0		0.00	0.002	***	-20.00	-0.004	**	7.84	-0.001	**	2.86	0.001		-3.03	-0.002	**	4.08	0.006	***	40.00	0.006	***	-100.00	-0.006	***	18.18
age_16b34	-0.001		4.76	0		0.00	0		0.00	0.001		-2.86	0		0.00	0		0.00	0.001		-2.86	0		0.00	0.001		-2.04	0.001		6.67	0.001		-16.67	-0.002		6.06
age_35b44	0		0.00	0		0.00	-0.001		2.17	0		0.00	0		0.00	-0.001		1.96	0		0.00	-0.001		3.03	0		0.00	0		0.00	0		0.00	-0.001		3.03
age_55b64	-0.002	*	9.52	-0.002	*	10.53	-0.005	**	10.87	-0.002	*	5.71	-0.002	*	20.00	-0.004	**	7.84	-0.003	*	8.57	-0.002	*	6.06	0.002	**	-4.08	0.002	**	13.33	-0.001		16.67	-0.004	**	12.12
age_65plus	-0.009		42.86	-0.003		15.79	-0.015		32.61	0.006	**	-17.14	-0.004		40.00	-0.011		21.57	0.002		-5.71	-0.011		33.33	-0.005		10.20	-0.001		-6.67	0.002		-33.33	-0.019	*	57.58
workst_self	-0.001		4.76	0.001		-5.26	-0.001		2.17	-0.001		2.86	-0.002		20.00	-0.003		5.88	0		0.00	-0.001		3.03	0.001		-2.04	0		0.00	-0.001		16.67	0		0.00
workst_unem/other	-0.001		4.76	-0.002		10.53	0		0.00	-0.005		14.29	0		0.00	-0.006		11.76	-0.001		2.86	0		0.00	-0.007		14.29	-0.001		-6.67	0		0.00	0		0.00
workst_ret	0.004		-19.05	0.003		-15.79	0.009		-19.57	0.003		-8.57	0.003		-30.00	0.008		-15.69	0		0.00	0.007		-21.21	0.005		-10.20	0.003		20.00	0.001		-16.67	0.01		-30.30
edu_primary	0		0.00	0		0.00	0		0.00	0.001		-2.86	0		0.00	0		0.00	0.001		-2.86	0		0.00	0.001		-2.04	0		0.00	0.001		-16.67	0		0.00
edu_tertiary	-0.007	*	33.33	0.001		-5.26	0.002		-4.35	0		0.00	-0.003	*	30.00	-0.003		5.88	-0.007	*	20.00	0		0.00	-0.006	*	12.24	0.001		6.67	-0.006	*	100.00	-0.005	*	15.15
1. income quintile	-0.002		9.52	-0.001		5.26	-0.001		2.17	-0.001		2.86	-0.002		20.00	0		0.00	-0.002		5.71	-0.001		3.03	-0.002		4.08	-0.001		-6.67	-0.001		16.67	-0.001		3.03
2. income quintile	-0.003		14.29	-0.002		10.53	-0.002		4.35	-0.001		2.86	-0.002		20.00	0.002		-3.92	-0.002		5.71	-0.001		3.03	-0.003		6.12	-0.002		-13.33	-0.001		16.67	-0.004		12.12
4. income quintile	-0.002		9.52	-0.002		10.53	0		0.00	-0.002	*	5.71	-0.003	*	30.00	0		0.00	-0.002		5.71	-0.001		3.03	-0.002	*	4.08	-0.001		-6.67	-0.002		33.33	-0.003	*	9.09
5. income quintile	-0.011	**	52.38	-0.008	**	42.11	-0.005	**	10.87	-0.003	*	8.57	-0.006	**	60.00	0		0.00	-0.009	**	25.71	-0.005	**	15.15	-0.011	**	22.45	-0.008	**	-53.33	-0.006	**	100.00	-0.01	**	30.30
assets	0.018	***	-85.71	-0.005	***	26.32	-0.027	***	58.70	-0.02	***	57.14	0.005	**	-50.00	-0.008	***	15.69	0.004	**	-11.43	-0.023	***	69.70	-0.001		2.04	-0.001		-6.67	0.009	***	-150.00	0.033	***	-100.00
liabilities	-0.007	***	33.33	-0.002		10.53	0.016	***	-34.78	-0.007	***	20.00	0		0.00	-0.008	***	15.69	-0.013	***	37.14	0.01	***	-30.30	-0.01	***	20.41	0.011	***	73.33	-0.006	***	100.00	-0.016	***	48.48
hhsize_1	0.004		-19.05	0.003		-15.79	-0.002		4.35	0		0.00	0.002		-20.00	-0.002		3.92	0.001		-2.86	0.001		-3.03	-0.001		2.04	0.002		13.33	0.001		-16.67	0		0.00
hhsize_3	0.001		-4.76	0		0.00	-0.001		2.17	-0.002		5.71	0		0.00	-0.007		13.73	-0.003		8.57	-0.001		3.03	-0.002		4.08	0.002		13.33	-0.003		50.00	-0.004		12.12
hhsize_4	0.001		-4.76	0		0.00	-0.007		15.22	-0.002		5.71	-0.001		10.00	-0.008		15.69	-0.003		8.57	-0.003		9.09	-0.005		10.20	0.001		6.67	-0.002		33.33	-0.003		9.09
hhsize_5plus	0		0.00	-0.001		5.26	-0.017	*	36.96	0.001		-2.86	-0.001		10.00	0.003		-5.88	0.001		-2.86	-0.004	*	12.12	-0.002		4.08	0.001		6.67	0.002	*	-33.33	-0.002		6.06
hhchild_yes	0		0.00	0.001		-5.26	0.007		-15.22	0		0.00	0.002		-20.00	0.003		-5.88	0.001		-2.86	0.003		-9.09	0.001		-2.04	0		0.00	0.001		-16.67	0.003		-9.09
			109.52			105.26			102.17			97.14			120.00			96.08			100.00			96.97			97.96			100.00			83.33			103.03
Pr_0	0.136			0.136			0.136			0.136			0.136			0.136			0.136			0.136			0.136			0.136			0.136			0.136		
Pr_1	0.365			0.203			0.122			0.16			0.691			0.28			0.506			0.422			0.664			0.03			0.135			0.384		
Diff	-0.229			-0.066			0.014			-0.024			-0.554			-0.144			-0.37			-0.286			-0.528			0.106			0.001			-0.248		
Expl	-0.021		9.17	-0.019		28.79	-0.046		-328.57	-0.035		145.83	-0.01		1.81	-0.051		35.42	-0.035		9.46	-0.033		11.54	-0.049		9.28	0.015		14.15	-0.006		-600.00	-0.033		13.31
Unexpl	-0.208		90.83	-0.047		71.21	0.06		428.57	0.011		-45.83	-0.544		98.19	-0.093		64.58	-0.335		90.54	-0.253		88.46	-0.479		90.72	0.091		85.85	0.007		-700.00	-0.215		86.69
			100			100			100			100			100			100			100			100			100			100			100			100

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A8: Decomposition of INR rates (liabilities)

INR_hmrmort1	AT		%	BE		%	CY		%	ES		%	FR		%	GR		%	LU		%	MT		%	NL		%	PT		%	SK		%
gender_man	-0.016	***	64.00	-0.009	***	34.62	-0.002		6.90	-0.01	***	71.43	0.003	**	-300.00	-0.023	***		-0.005	**	71.43	-0.008	**	160.00	0.01	***	23.26	0.009	***	15.79	-0.017	***	141.67
age_16b34	-0.011	*	44.00	-0.015	*	57.69	-0.018	*	62.07	-0.01		71.43	-0.014	*	1400.00	-0.022			-0.015	*	214.29	-0.018	*	360.00	-0.001		-2.33	-0.008	*	-14.04	-0.048	*	400.00
age_35b44	-0.001		4.00	-0.001		3.85	-0.001		3.45	-0.001		7.14	-0.001		100.00	-0.001			-0.002		28.57	-0.002		40.00	0.001		2.33	-0.001		-1.75	-0.001		8.33
age_55b64	0.001		-4.00	0.001		-3.85	0.001		-3.45	0.001		-7.14	0.001		-100.00	0.001			0.001		-14.29	0.002		-40.00	0		0.00	0		0.00	0.002		-16.67
age_65plus	0.002		-8.00	0.004		-15.38	0.005		-17.24	0.003		-21.43	0.004		-400.00	0.004			0.004		-57.14	0.005		-100.00	-0.002		-4.65	0.003		5.26	0.006		-50.00
workst_self	0		0.00	0.001		-3.85	0		0.00	0		0.00	-0.001		100.00	-0.001			0.001		-14.29	0.001		-20.00	0.001		2.33	0		0.00	0		0.00
workst_unem/other	0		0.00	0		0.00	0		0.00	-0.002		14.29	0.001		-100.00	-0.002			0		0.00	-0.002		40.00	0		0.00	0		0.00	0		0.00
workst_ret	0		0.00	0.002		-7.69	0.002		-6.90	0.002		-14.29	0.002		-200.00	0.001			0.002		-28.57	0.002		-40.00	-0.002		-4.65	0		0.00	0.004		-33.33
edu_primary	0.005		-20.00	0.002		-7.69	0.001		-3.45	0.014		-100.00	0.003		-300.00	0.01			0.006		-85.71	0.019		-380.00	0.006		13.95	0.021		36.84	-0.002		16.67
edu_tertiary	0.012		-48.00	-0.006		23.08	-0.006		20.69	-0.002		14.29	-0.002		200.00	0.009			-0.001		14.29	0.003		-60.00	-0.005		-11.63	0.005		8.77	0.008		-66.67
1. income quintile	-0.003		12.00	-0.004		15.38	-0.004		13.79	-0.002		14.29	-0.002		200.00	-0.003			-0.002		28.57	-0.002		40.00	-0.006		-13.95	-0.002		-3.51	-0.006		50.00
2. income quintile	-0.012		48.00	-0.004		15.38	-0.012		41.38	-0.008		57.14	-0.005		500.00	-0.018			-0.009		128.57	-0.008		160.00	-0.011		-25.58	-0.005		-8.77	-0.021		175.00
4. income quintile	-0.002		8.00	-0.005		19.23	-0.006		20.69	-0.004		28.57	-0.005		500.00	-0.002			-0.007		100.00	-0.005		100.00	-0.002		-4.65	-0.002		-3.51	-0.006		50.00
5. income quintile	0.017		-68.00	0.015		-57.69	0.02		-68.97	0.015		-107.14	0.012		-1200.00	0.021			0.014		-200.00	0.013		-260.00	0.016		37.21	0.01		17.54	0.032		-266.67
assets	0.005		-20.00	-0.003		11.54	-0.039	***	134.48	-0.006	*	42.86	-0.001		100.00	0.032	***		-0.039	***	557.14	0.005		-100.00	0.001		-2.33	0.021	***	36.84	0.073	***	-608.33
liabilities	-0.02	***	80.00	0.007	*	-26.92	0.045	***	-155.17	0.003		-21.43	0.014	***	-1400.00	0.001			0.053	***	-757.14	-0.001		20.00	0.037	***	86.05	0.007		12.28	-0.029	***	241.67
hhsize_1	-0.005		20.00	-0.005		19.23	0.001		-3.45	-0.001		7.14	-0.004		400.00	0			-0.007		100.00	0.001		-20.00	-0.009		-20.93	-0.003		-5.26	-0.001		8.33
hhsize_3	0		0.00	0		0.00	0		0.00	-0.001		7.14	0		0.00	0			0		0.00	0		0.00	0.002		4.65	-0.001		-1.75	-0.003		25.00
hhsize_4	0.005		-20.00	-0.001		3.85	-0.007		24.14	-0.002		14.29	-0.002		200.00	-0.006			0.001		-14.29	-0.005		100.00	0.009		20.93	0.001		1.75	0		0.00
hhsize_5plus	0		0.00	0		0.00	-0.003		10.34	0		0.00	0		0.00	0			0		0.00	0		0.00	0.001		2.33	0.001		1.75	0.001		-8.33
hhchild_yes	-0.001		4.00	-0.003		11.54	-0.007		24.14	-0.003		21.43	-0.005		500.00	-0.002			-0.002		28.57	-0.004		80.00	0.002		4.65	-0.001		-1.75	-0.005		41.67
			96			92.31			103.45			100.00			200.00						100.00			80.00			106.98			96.49			108.33
Pr_0	0.129			0.129			0.129			0.129			0.129			0.129			0.129			0.129			0.129			0.129			0.129		
Pr_1	0.417			0.219			0.13			0.106			0.247			0.224			0.141			0.322			0.091			0.203			0.324		
Diff	-0.288			-0.09			0			0.024			-0.117			-0.095			-0.012			-0.193			0.038			-0.074			-0.195		
Expl	-0.025		8.68	-0.026		28.89	-0.029			-0.014		-58.33	-0.001		0.85	0		0.00	-0.007		58.33	-0.005		2.59	0.043		113.16	0.057		-77.03	-0.012		6.15
Unexpl	-0.263		91.32	-0.064		71.11	0.029			0.038		158.33	-0.116		99.15	-0.095		100.00	-0.005		41.67	-0.188		97.41	-0.005		-13.16	-0.131		177.03	-0.183		93.85
			100.00			100.00						100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

INR_loan1	AT		%	BE		%	CY		%	ES		%	FR		%	GR		%	LU		%	MT		%	NL		%	PT		%	SK		%
gender_man	-0.012	**	-200.00	-0.006	**	18.75	0.002		66.67	-0.005	**	6.25	0.004	**	-23.53	-0.013	**	48.15	0.003		-15.79	-0.006	*	11.76	0.01	**	-52.63	0.005	**	-17.86	-0.009	**	-69.23
age_16b34	0		0.00	0.001		-3.13	0		0.00	0.001		-1.25	0		0.00	0		0.00	0		0.00	0.001		-1.96	0		0.00	0		0.00	-0.001		-7.69
age_35b44	-0.004		-66.67	-0.002		6.25	-0.005		-166.67	-0.002		2.50	-0.002		11.76	-0.006		22.22	-0.004		21.05	-0.005		9.80	0		0.00	-0.002		7.14	-0.005		-38.46
age_55b64	0.004		66.67	-0.006		18.75	0.004		133.33	-0.004		5.00	-0.006	*	35.29	0.008		-29.63	-0.006		31.58	-0.007		13.73	-0.01	*	52.63	-0.006		21.43	0.008		61.54
age_65plus	-0.002		-33.33	-0.002		6.25	0.001		33.33	-0.009		11.25	-0.003		17.65	0		0.00	0.002		-10.53	0.004		-7.84	-0.004		21.05	-0.003		10.71	0.005		38.46
workst_self	0.001		16.67	0.002		-6.25	-0.001		-33.33	-0.001		1.25	-0.003		17.65	-0.004		14.81	0		0.00	0		0.00	0		0.00	0		0.00	-0.001		-7.69
workst_unem/other	0.003		50.00	-0.008		25.00	0.005		166.67	-0.019	**	23.75	0.013	**	-76.47	-0.006		22.22	0.003		-15.79	-0.021	**	41.18	-0.003		15.79	0.003		-10.71	0.005	*	38.46
workst_ret	0.004		66.67	0.003		-9.38	-0.001		-33.33	0.001		-1.25	0.004		-23.53	0		0.00	0.001		-5.26	-0.001		1.96	0.001		-5.26	0.004		-14.29	-0.002		-15.38
edu_primary	-0.011		-183.33	-0.013		40.63	-0.008		-266.67	-0.035		43.75	-0.014		82.35	-0.018		66.67	-0.016		84.21	-0.046		90.20	-0.012		63.16	-0.049		175.00	0.004		30.77
edu_tertiary	0.006		100.00	0.001		-3.13	0		0.00	0.003		-3.75	0.002		-11.76	0.006		-22.22	0.002		-10.53	0.007		-13.73	-0.001		5.26	0.008		-28.57	0.004		30.77
1. income quintile	0.001		16.67	0		0.00	-0.001		-33.33	-0.001		1.25	-0.001		5.88	0		0.00	0		0.00	-0.002		3.92	0		0.00	-0.001		3.57	-0.001		-7.69
2. income quintile	0.002		33.33	0		0.00	0.002		66.67	0.003		-3.75	0		0.00	0		0.00	0		0.00	0.006		-11.76	0.001		-5.26	0		0.00	0.003		23.08
4. income quintile	0.003		50.00	-0.001		3.13	0		0.00	0		0.00	0		0.00	0.001		-3.70	0.001		-5.26	0.003		-5.88	0		0.00	0.005		-17.86	0		0.00
5. income quintile	-0.001		-16.67	0		0.00	0.001		33.33	0		0.00	0.001		-5.88	0		0.00	0.001		-5.26	-0.001		1.96	0.001		-5.26	-0.001		3.57	0		0.00
assets	0.005		83.33	-0.026	**	81.25	-0.045	**	-1500.00	-0.046	**	57.50	-0.031	**	182.35	-0.021	**	77.78	-0.046	**	242.11	-0.032	**	62.75	-0.031	**	163.16	-0.007		25.00	0.001		7.69
liabilities	-0.002		-33.33	0.004		-12.50	0.016		533.33	0.002		-2.50	0.005		-29.41	0.001		-3.70	0.014		-73.68	-0.001		1.96	0.019		-100.00	0		0.00	-0.009		-69.23
hhsize_1	-0.005		-83.33	0.004		-12.50	0.01		333.33	0.01		-12.50	0.004		-23.53	0.007		-25.93	0.004		-21.05	0.011		-21.57	-0.001		5.26	0.008		-28.57	0.007		53.85
hhsize_3	0.005		83.33	0.002		-6.25	0.002		66.67	-0.001		1.25	0.003		-17.65	0		0.00	0.002		-10.53	0		0.00	0.004		-21.05	-0.002		7.14	-0.002		-15.38
hhsize_4	0.004		66.67	0.011	**	-34.38	0.015	**	500.00	0.016	*	-20.00	0.006	*	-35.29	0.018	*	-66.67	0.015	**	-78.95	0.034	*	-66.67	0.003		-15.79	0.009	*	-32.14	0.01	**	76.92
hhsize_5plus	0		0.00	0.005		-15.63	0.016	*	533.33	0.005		-6.25	0.003		-17.65	0.004		-14.81	0.007		-36.84	0.008		-15.69	0		0.00	0.005		-17.86	0.002		15.38
hhchild_yes	0.004		66.67	-0.002		6.25	-0.009		-300.00	-0.001		1.25	-0.001		5.88	-0.004		14.81	-0.002		10.53	-0.006		11.76	0.005		-26.32	-0.003		10.71	-0.005		-38.46
			83.33			103.13			133.33			103.75			94.12			100.00			100.00			105.88			94.74			96.43			107.69
Pr_0	0.122			0.122			0.122			0.122			0.122			0.122			0.122			0.122			0.122			0.122			0.122		
Pr_1	0.266			0.145			0.087			0.135			0.28			0.092			0.103			0.282			0.5			0.116			0.201		
Diff	-0.144			-0.023			0.035			-0.013			-0.159			0.03			0.019			-0.16			-0.378			0.006			-0.08		
Expl	0.006		-4.17	-0.032		139.13	0.003		8.57	-0.08		615.38	-0.017		10.69	-0.027		-90.00	-0.019		-100.00	-0.051		31.88	-0.019		5.03	-0.028		-466.67	0.013		-16.25
Unexpl	-0.15		104.17	0.009		-39.13	0.032		91.43	0.067		-515.38	-0.142		89.31	0.057		190.00	0.038		200.00	-0.109		68.13	-0.359		94.97	0.034		566.67	-0.093		116.25
			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00			100.00

* $p<0.1$; ** $p<0.05$; *** $p<0.01$