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ABSTRACT: We use a representative survey of the Turkish household sector and investigate factors impinging on saving-borrowing behavior. We run four probit regressions to elucidate (i) the saving decision, (ii) asset choice or portfolio composition for those who save, (iii) the bank loan decision and lastly (iv) the formal versus informal borrowing decision. We find income, education, marital status and region within country strongly correlate with those decisions. We offer some insights regarding the influence of variables like rural to urban migrant status and religious belief on saving and borrowing decisions. We discuss the long-term implications of our findings on the Turkish household savings performance.

KEY WORDS: Financial inclusion, household finance, human resources

JEL codes: D14, G21, O15.

According to the World Bank (2014) Turkey is an upper middle income country whose per capita GNI averaged to $10,970 during 2010–2014. As such income-wise it is closer to the higher end of the $4,126–$12,745 range for its group. Comparable members include Brazil, Bulgaria, Malaysia, Mexico, and Poland. The same source indicates Turkey saves a smaller share of its income (14%) than similar economies – 15, 22, 33, 23, and 19% for the five reference countries, respectively.[1]

Currently the country has a population of around 77.7 million, Turkstat (2014). A most salient demographic fact about Turkey is the ongoing rural to urban migration process. This is a characteristic shared by comparable countries like Brazil, Malaysia, or Mexico. Urban Turkish population constituted around 44% of the total in 1980; it had gone up to 77% in 2012. Concomitantly, the contraction of the village-based agricultural sector is paralleled by an expansion in urban, cities as well metropolitan areas, based service and manufacturing sectors.

The falling savings ratio is worrisome from a macroeconomic policy perspective. The necessity to modernize and industrialize and to provide employment to a rapidly urbanizing population coupled with the falling domestic savings rate makes the country overly dependent on international capital inflows. In its turn, this dependence contributes to the "dollarization" process, which constrains the conduct of monetary policy. Such concerns[2] have elicited research on the determinants of household savings and their future path [see Aktaş et al. (2012), Ceritoğlu (2013), Ceritoğlu and Eren (2014), and Van Rijckeghem and Üçer (2009)]. Ceritoğlu and Eren (2014) and Van Rijckeghem and Üçer (2009) argue that due to demographic and social changes, household savings ratio will increase in the coming years. Since we use a different data source, Konda instead of Turkish Statistical Institute (TUIK) (see Data section), we shed some further light on this matter. Unlike those used by the cited papers, our data set comprises information on the regional and cultural characteristics of survey respondents. In particular, the Konda survey contains information regarding the degree of religiosity of the respondents. As such it is better suited than TUIK's data to investigate the impact of religiosity on financial outcomes.

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A further commonality Turkey has with its above-mentioned peers, and which is connected to the migration and modernization processes, is the existence of a sizeable *informal* sector. Schneider and Enste (2013) provide an authoritative survey of this worldwide phenomenon. Estimates of the magnitude of Turkish informality vary from a low of 25% to 40% of GDP (Davutyan 2008).

From a development perspective, the main drawback of informal firms is their inability to adopt modern productive methods and grow. In addition to collateral issues, their opacity, e.g. less than perfect bookkeeping, complicates project evaluation. This further restricts their access to bank credit, condemning them to internal sources of finance, which is typically insufficient (Bianchi 2010; Levine et al. 2010). Davutyan and Ozar (2006) as well as Aysan, Disli, and Schoors (2014) deal with this issue from a Turkish perspective. The large and growing *financial inclusion* literature (e.g., Allen, Demirgüç-Kunt, Klapper, and Peria 2012; Ben Naceur, Barajas, and Massara 2015; Demirgüç-Kunt and Klapper 2012; Demirguc-Kunt, Klapper, and Randall 2013), has sprung partly as a response to such phenomena and their ramifications. This literature is based on the idea that as countries develop economically as well as socially, access to finance becomes available to ever wider segments of the society, and financial inclusion increases. This is a mutually reinforcing process whereby inclusion and prosperity feed on each other. Thus easier and greater use of the financial system enables hitherto excluded strata to participate in productive activity and engenders virtuous cycles.

In this context, one point needs some clarification. The financial inclusion literature (e.g., Demirguc-Kunt, Klapper, and Randall 2013) looks at the possible impact of Islam on financial development using cross-country data, where the countries in question have sizeable Moslem versus non-Moslem populations. However, we think in Turkey the relevant sociocultural divide, with a possible impact on financial behavior, is not religion proper but the "traditional/religious/practising" versus "modern/secular/non-practising" distinction (Hosgor 2011; Madi 2014). Therefore, in our study we include a dummy capturing that dichotomy.

Against this background, Aysan, Dolgun, and Turhan (2013) argue Islamic financial institutions known as "*participation banks* expand the scope for financial inclusion for those who stay away from conventional banking due to religious sensitivity". In addition, such institutions ". play a pivotal role in channeling the idle capital into more productive sectors". We should note Turkish policymakers frequently complain about banks' tendency to finance consumption rather than investment projects.[3] As such participation banks would not only attract hitherto excluded people and firms, but also channel savings toward investment rather than consumer durables. Finally "the close ties of the participation banks with the real side of the economy, healthy lending processes, and working on a principle of profit-and-loss sharing" might mitigate the opacity problem of informal sector firms.[4] Indeed the term "participation banking" emphasizes this aspect of the bank–client relationship, namely partnership in the sense of risk-sharing. Since our data set contains information on degree of religiosity, we provide some clarification on this matter. In particular we present evidence that religiosity associates negatively with holding financial as distinct from real assets. But pious, i.e. practicing, people seem to be indistinguishable from their non-practicing counterparts regarding saving as well as bank loan decisions.

The rest of this article is organized as follows. The next section describes our regression model and the Data section follows. The results are presented and discussed, and the last section concludes.

Model Estimation

Our main empirical specifications focus on four dimensions of saving and lending decisions: (i) saving versus consuming, (ii) form of saving, (iii) bank loans, and (iv) formal versus informal loans, i.e., non-bank loans such as from family, friends and the like. In each case the dependent variable y_i is a zero/one dummy depicting the relevant decision. Therefore, we use the following model to investigate variables associated with the choices involved.

$$y_{i,j} = x_{i,j}{}'\beta + z_j{}'\gamma + \varepsilon_{i,j} \qquad (1)$$

where individuals are indexed by i and $x_{i,j}$ is a vector of traits for a person from region j, z_j is a vector of NUTS1-level regional characteristics, β and γ are parameter vectors, and $\varepsilon_{i,j}$ is a normally distributed error term with zero mean and variance equal to one. We estimate (1) as a pooled probit model by maximum likelihood using clustering on each region.

The personal characteristics comprise age, gender, education, marital, occupational, residential and migrancy status, household size, income and a degree of religiosity dummy. The regional controls consist of NUTS1-level residence dummies. Occasionally we interact two individual traits, e.g., piousness and self-employment, or a trait with location dummies to allow for nonlinearities.[5] In such cases we estimate

$$y_{i,j} = x_{i,j}{}'\beta + z_j{}'\gamma + x_{a,i,j}{}^*z_{b,j}{}^*\delta + \varepsilon_{i,j} \qquad (2)$$

and the marginal effect of x_a becomes

$$\delta E\left(y_{i,j}|xz\right)/\delta\, x_a = f(x'\beta){*}\beta_a + f(x'\beta){^*}z_b{^*}\delta \qquad (3)$$

The Stata 12 software routinely computes these effects.

Data

This article uses the results of a survey covering a representative sample of Turkish household sector. It was conducted by Konda in early 2014 by face-to-face interviews with 2,607 individuals. Konda is a well-respected private polling agency. The survey comprised a battery of questions eliciting demographic, social, cultural and religious as well as financial information.[6] The questions are categorized in three levels. The first set elicits demographic information. The respondents were prompted to answer questions on gender, age, education, own birthplace, father's birthplace, region of survey, employment, urban or rural residence, household size, marital status, religion and economic status. The second set of questions pertained to saving habits and monetary assets. The respondents were asked whether they save and *if yes* for what purpose they save for. The third set of questions sought information on borrowing habits such as loan sources – formal financial institutions versus family or friends, and whether they currently owe money to formal or informal groups. Table 1 displays sample statistics from Konda's survey and those obtained from TUIK's Household Labor Force Survey (HLFS) from 2013 and 2014. Although TUIK's samples are larger by a factor of 133 and 138 (347,931 and 358,763 versus 2,607 respondents), the distributions across NUTS1 regions and age are quite close. In terms of tertiary education, all three surveys have a very similar respondent composition. Taking the much larger HLFS findings as the accurate ones, Konda undersamples respondents with a primary school and below level of education and oversamples those with a secondary level of education. However, as will be seen subsequently, what is important for our study is the split between individuals with a tertiary (i.e. college or more) education versus those below that level. Hence it is reassuring to observe the surveys have a very similar structure from that angle, namely about 14% tertiary and 86% below. Konda respondents' gender composition is very close to half and half, 51% female and 49% male. Finally proportions regarding the regional composition of employment and unemployment status are of the same order of magnitude.

We constructed four response dummies and a set of regressors to run four separate probit regressions to analyze various aspects of saving-borrowing behavior. For each case we used the same regressors. All our variables are displayed and explained in the Appendix. The 0/1 dependent variables are as follows: *Save, Financial, Bank Loan* and *Only Bank Loan*.

Table 1. Konda versus TUIK HLFS (Household labor force statistics).

Variable	KONDA 2014					HLFS 2013			HLFS 2014				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Min	Max
Region (nuts)													
1	2,607	0.1826	0.3864	0	1	3,47,931	0.1833	0.3869	3,58,763	0.1950	0.3962	0	1
2	2,607	0.0560	0.2300	0	1	3,47,931	0.0486	0.2151	3,58,763	0.0462	0.2099	0	1
3	2,607	0.1554	0.3623	0	1	3,47,931	0.1383	0.3452	3,58,763	0.1382	0.3451	0	1
4	2,607	0.0932	0.2908	0	1	3,47,931	0.1030	0.3039	3,58,763	0.0983	0.2977	0	1
5	2,607	0.1009	0.3012	0	1	3,47,931	0.0974	0.2966	3,58,763	0.0987	0.2982	0	1
6	2,607	0.1235	0.3291	0	1	3,47,931	0.1270	0.3329	3,58,763	0.1250	0.3307	0	1
7	2,607	0.0483	0.2145	0	1	3,47,931	0.0499	0.2176	3,58,763	0.0496	0.2171	0	1
8	2,607	0.0606	0.2387	0	1	3,47,931	0.0612	0.2397	3,58,763	0.0605	0.2385	0	1
9	2,607	0.0345	0.1826	0	1	3,47,931	0.0359	0.1860	3,58,763	0.0345	0.1826	0	1
10	2,607	0.0138	0.1167	0	1	3,47,931	0.0241	0.1532	3,58,763	0.0250	0.1560	0	1
11	2,607	0.0345	0.1826	0	1	3,47,931	0.0436	0.2041	3,58,763	0.0437	0.2044	0	1
12	2,607	0.0967	0.2956	0	1	3,47,931	0.0878	0.2830	3,58,763	0.0854	0.2795	0	1
Educ													
1 (less than secondary)	2,589	0.5616	0.4963	0	1	3,47,931	0.6768	0.4677	3,58,763	0.6752	0.4683	0	1
2 (secondary)	2,589	0.3001	0.4584	0	1	3,47,931	0.1922	0.3940	3,58,763	0.1880	0.3907	0	1
3 (tertiary and above)	2,589	0.1383	0.3453	0	1	3,47,931	0.1310	0.3374	3,58,763	0.1368	0.3437	0	1
Gender female	2,602	0.5092	0.5000	0	1	3,47,931	0.4982	0.5001	3,58,763	0.5060	0.5000	0	1
Age	2,606	40.1554	14.6481	18	83	3,47,931	41.4115	15.7201	3,58,763	41.7862	15.9308	18	83

Variable region (nuts)	Unemployed		Employed	
	KONDA 2014	TUIK 2014	KONDA 2014	TUIK 2014
1	0.0399	0.0626	0.4118	0.5268
2	0.0137	0.0346	0.5068	0.5204
3	0.0272	0.0484	0.3605	0.5328
4	0.0288	0.0421	0.4115	0.5182
5	0.0342	0.0498	0.4030	0.5084
6	0.0807	0.0551	0.4441	0.4955
7	0.0476	0.0426	0.4127	0.4815
8	0.0380	0.0317	0.4430	0.5106
9	0.0333	0.0330	0.2111	0.5289
10	0.0556	0.0278	0.3611	0.5268
11	0.0333	0.0507	0.4333	0.4766
12	0.0794	0.0643	0.4127	0.4128
Total	0.0437	0.0501	0.4074	0.5051

Tables 3 and 4 display the regression coefficients of our four equations and the relevant marginal effects, respectively. For ease of interpretation when presenting our results, we will discuss the estimated marginal effects of Table 4. As can be seen, for each regression we present coefficients obtained via interacting religiosity and self-employment dummies. Thus Table 3 gives the coefficients of Dreligious, Dselfemployed and their interaction separately. However, the marginal effects of Table 4 subsume the impact of the interaction under those of its components, i.e. Dreligious and Dselfemployed.

Results

Saving Decisions

Table 2 provides information on how some important demographic and social characteristics likely to impinge on saving behavior vary by income quintile.

As one would expect, the ratio of savers in the general population rises with income, urban residence, years of education and being male. On the other hand, rural residence, age, marriage rate and religiosity fall with income level. Interestingly, household size seems to remain constant around four.

Our probit equations elucidating how the decision to save changes taking account of various regressors are shown in the first column (Save) of Tables 3 and 4. Table 3 displays the regression coefficients, and Table 4 the associated marginal effects. For ease of interpretation we discuss the marginal effect of each regressor. We have 708 savers and 1,899 non-savers. Due to missing values for some of the regressor variables, particularly income, we can only use 2,402 observations out of a total of 2,607.

Focusing on the first column (Save) of Table 4, we note being married increases the likelihood of saving by almost 12 percentage points. Being marginally above the average age of 40 implies a nearly 1% rise in the likelihood of being a saver. However, being very young and very old are negatively associated with saving.

Household size and saving are negatively correlated. Living in a household larger than the average size of 4, all else equal, is associated with a 9% reduced chance of saving.

One's status on the income scale matters considerably. We note someone in the fourth income quintile is 22% more likely to be a saver compared to her/his bottom quintile counterpart. The corresponding magnitude for a fifth quintile person is 19%. Since the other quintile dummies are insignificant, we conclude household saving is done by the top 40% of the income distribution.[7] Aktaş et al. (2012, p30) report a comparable finding.[8]

Table 2. Income and demographics.

		Income quintile				
		I	II	III	IV	V
Monthly	incomeTL	698	1047	1538	2183	4035
Monthly	income$	333	499	733	1040	1921
Eduyear		5.8	7.1	8.2	9.4	11.1
Male		0.4	0.48	0.52	0.52	0.56
Age		45	41.6	39.3	37.6	36.9
Married		0.84	0.79	0.78	0.71	0.66
Religious		0.82	0.74	0.71	0.63	0.57
Country		0.36	0.29	0.22	0.13	0.11
City		0.28	0.3	0.31	0.29	0.31
Metropol		0.36	0.41	0.47	0.57	0.58
Householdsize	4.05	3.85	3.87	4.11	3.98	
Save	0.14	0.23	0.25	0.32	0.43	

Table 3. Probit regression coefficients.

	Save		Financial		Bank_Loan		Only_Bank_Loan	
	b/se		b/se		b/se		b/se	
Female	−0.057		−0.240	*	−0.180	****	0.085	
	0.063		0.141		0.046		0.086	
Age	0.030	**	0.035		0.068	****	0.046	***
	0.014		0.028		0.015		0.017	
Agesq	0.000	***	0.000		−0.001	****	0.000	
	0.000		0.000		0.000		0.000	
Married	0.396	****	0.140		0.479	****	0.429	***
	0.082		0.173		0.091		0.138	
Lhhsize	−0.294	****	−0.172		−0.053		−0.063	
	0.080		0.127		0.063		0.164	
educ2	0.152	***	0.372	**	0.187	***	0.181	***
	0.059		0.146		0.063		0.064	
Dinc_qnt2	0.009		−0.085		−0.009		0.049	
	0.086		0.276		0.073		0.058	
Dinc_qnt3	0.096		−0.020		0.050		0.084	
	0.104		0.254		0.105		0.122	
Dinc_qnt4	0.722	****	−0.099		0.176		0.186	
	0.260		0.304		0.132		0.265	
Dinc_qnt5	0.624	****	0.113		0.337	***	0.525	****
	0.101		0.203		0.101		0.120	
Dregion2	−0.154		−0.232		−0.216		0.139	
	0.166		0.218		0.147		0.224	
Dregion3	0.291	**	0.177		0.296	***	0.241	
	0.118		0.183		0.108		0.169	
Dregion4	0.209	**	0.289	**	−0.263	***	−0.272	*
	0.085		0.114		0.079		0.140	
Dregion5	0.233	****	0.074		0.138	****	0.377	****
	0.026		0.095		0.035		0.036	
Dregion6	0.377	****	−0.348	***	−0.027		0.088	
	0.091		0.136		0.092		0.135	
Dregion7	0.786	****	1.123	****	0.190	*	−0.043	
	0.131		0.235		0.115		0.176	
Dregion8	0.024		0.635	***	0.086		0.052	
	0.156		0.209		0.148		0.239	
Dregion9	0.124		0.036		−0.051		−0.112	
	0.168		0.240		0.149		0.231	
Dregion10	0.848	****	1.711	****	−0.112			
	0.163		0.186		0.140		(omitted/collinear)	
Dregion11	0.329	*	0.329		−0.099		−0.222	
	0.170		0.280		0.158		0.253	
Dregion12	0.736	****	−0.323	**	−0.165	*	−0.961	****
	0.099		0.155		0.099		0.119	
Dselfemployed	−0.183		−0.269		−0.292	**	−0.470	***
	0.186		0.302		0.126		0.174	
Dreligious	−0.063		−0.331		−0.012		0.093	
	0.115		0.227		0.111		0.172	
Dselfemployed*Dreligious	0.173		0.340		0.100		0.124	
	0.172		0.414		0.132		0.211	

(*Continued*)

Table 3. Probit regression coefficients (Continued).

	Save		Financial		Bank_Loan		Only_Bank_Loan	
	b/se		b/se		b/se		b/se	
Dcity	−0.131		0.767	****	0.200	*	0.433	*
	0.126		0.202		0.106		0.223	
Dmetro	−0.212		0.624	***	0.036		0.238	
	0.150		0.197		0.110		0.234	
imm_stbl	0.237	*	0.249	**	0.169	**	0.493	****
	0.141		0.124		0.067		0.128	
stbl_imm	−0.109		0.188		0.004		−0.085	*
	0.070		0.162		0.090		0.049	
imm_imm	−0.214		0.614	*	0.190		0.291	
	0.201		0.334		0.131		0.214	
_cons	−1.156	****	−1.572	***	−2.196	****	−2.667	****
	0.439		0.580		0.315		0.454	
N	2,409		661		2,409		1,202	
r2_p	0.097		0.156		0.080		0.143	
chi2	0.000		0.000		0.000		0.000	
Ll	−1,277.745		−372.867		−1,445.304		−576.118	

*$p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$ (probability p-values in parenthesis).

Education too correlates positively with being a saver. Holding all regressors at their mean, being college or more educated increases the chance of being a saver by almost 5%.

This positive relationship between education and likelihood of saving is robust to alternative specifications, like years of schooling instead of a college dummy. Currently the share of college-educated people in Turkey is low compared to developed economies. However, this share is increasing and the trend is upward. Therefore a higher proportion of college graduates is one channel through which the declining Turkish savings ratio could be expected to reverse in the future. Ceritoğlu and Eren (2014) present detailed simulations regarding the workings of this effect.

Education in conjunction with income level and age can be expected to correlate closely with financial literacy or sophistication. In particular, fixing income and education constant at high enough levels, one would expect younger people would be more likely to save since they would have access to a wider range of savings products via the Internet. This channel turned out to be (weakly) operative among college graduates in the top 1 percentile of the income scale when comparing the saving behavior of 30 versus 45 versus 60 age groups.[9]

Urbanization is negatively associated with saving decisions. Being an urban dweller is linked to a 4% decline of saving likelihood relative to a rural person. The same holds true for a metropolitan individual whose reduced likelihood is about 6.4%. However they are insignificant since we are using clustered robust standard errors. We use Dregion1, metropolitan Istanbul whose GDP and population account for about one-fifth of the national totals. It can be seen that with the exception of West Marmara, West and East Black Sea – regions 2, 8, 9 – all the rest of the country saves significantly more than Istanbul. For instance relative to an Istanbul dweller, someone from Central Anatolia, region7, has a 24% higher chance of being a saver. The comparable figure for someone from North Eastern Anatolia is 26%. Since Istanbul is the most urbanized metropolis attracting people from all the rest of the country, these findings are consistent with a reduction in the precautionary motive for saving as people move from rural to urban settings (Loayza et al. 2000a, 2000b; Ceritoğlu and Eren 2014).[10] Thus we conclude the ongoing Turkish urbanization process contributes to the observed decline of saving as a share of GDP. On the bright or countervailing side we should point out the positive impact of being a second-generation immigrant, imm_stbl, on saving. We note someone born

Table 4. Probit coefficients for marginal effects.

	Save		Financial		Bank_Loan		Only_Bank_Loan	
	b/se		b/se		b/se		b/se	
Female	−0.017		−0.077	*	−0.061	****	0.023	
	0.019		0.046		0.015		0.023	
Age	0.009	**	0.011		0.023	****	0.012	***
	0.004		0.009		0.005		0.004	
Agesq	0.000	***	0.000		0.000	****	0.000	
	0.000		0.000		0.000		0.000	
Married	0.119	****	0.045		0.163	****	0.116	***
	0.024		0.055		0.031		0.036	
Lhhsize	−0.088	****	−0.055		−0.018		−0.017	
	0.023		0.040		0.021		0.044	
educ2	0.046	***	0.119	***	0.064	***	0.049	***
	0.017		0.046		0.021		0.017	
Dinc_qnt2	0.003		−0.027		−0.003		0.013	
	0.026		0.088		0.025		0.158	
Dinc_qnt3	0.029		−0.006		0.017		0.023	
	0.031		0.081		0.036		0.033	
Dinc_qnt4	0.217	***	−0.032		0.060		0.050	
	0.076		0.097		0.045		0.072	
Dinc_qnt5	0.187	****	0.036		0.115	***	0.141	****
	0.027		0.065		0.034		0.031	
Dregion2	−0.005		−0.074		−0.074		0.038	
	0.050		0.070		0.050		0.060	
Dregion3	0.087	**	0.057		0.101	***	0.065	
	0.035		0.059		0.037		0.046	
Dregion4	0.063	**	0.092	**	−0.090	***	−0.073	**
	0.026		0.037		0.027		0.037	
Dregion5	0.070	****	0.024		0.047	****	0.102	****
	0.008		0.030		0.012		0.010	
Dregion6	0.113	****	−0.111	**	−0.009		0.024	
	0.027		0.044		0.031		0.037	
Dregion7	0.236	****	0.359	****	0.065	*	−0.012	
	0.039		0.075		0.039		0.047	
Dregion8	0.007		0.203	***	0.029		0.014	
	0.047		0.067		0.050		0.065	
Dregion9	0.037		0.012		−0.017		−0.030	
	0.050		0.077		0.051		0.062	
Dregion10	0.254	****	0.547	****	−0.038			
	0.050		0.055		0.048		(omitted/collinear)	
Dregion11	0.099	*	0.105		−0.034		−0.060	
	0.051		0.089		0.054		0.068	
Dregion12	0.221	****	−0.103	**	−0.056	*	−0.259	****
	0.030		0.049		0.034		0.032	
Dselfemployed	−0.019		−0.015		−0.075	****	−0.099	****
	0.034		0.049		0.019		0.011	
Dreligious	−0.004		−0.079		0.005		0.032	
	0.034		0.055		0.031		0.036	
Dcity	−0.039		0.245	****	0.068	*	0.117	**
	0.038		0.063		0.036		0.059	

(*Continued*)

Table 4. Probit coefficients for marginal effects (Continued).

	Save		Financial		Bank_Loan		Only_Bank_Loan	
	b/se		b/se		b/se		b/se	
Dmetro	−0.064		0.199	***	0.012		0.064	
	0.045		0.062		0.038		0.063	
imm_stbl	0.071	*	0.080	**	0.058	**	0.133	****
	0.042		0.040		0.023		0.034	
stbl_imm	−0.033		0.060		0.001		−0.023	*
	0.021		0.052		0.031		0.013	
imm_imm	−0.064		0.196	*	0.065		0.078	
	0.059		0.107		0.045		0.058	
N	2,409		661		2,409		1,202	

$*p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$ (probability p-values in parenthesis).

to a migrant father but who lives where s/he was born has a 7% higher chance of being a saver relative to a person who lives where her/his father was born, stbl_stbl. First-generation immigrants comprise 756 individuals, 29% of our sample. Thus in the medium run their offspring would swell the share of the second generation who have a higher likelihood to save.

It is worth pointing out the above-outlined regional saving differences, assuming stability, could be valuable in mapping out the future trend of Turkey's saving to GDP ratio. Of course such an exercise would require forecasting the future regional composition of the population. It could be a useful research avenue.

Asset Choice

The idea that as income and education levels rise with urbanization, financial assets tend to replace real ones in people's portfolios has been around for a long time. Goldsmith (1969) is an early classic, and Levine (1997) is a good survey. Arrondel et al. (2014) discuss recent material on household asset allocation focusing on Euro area countries. Our data does not contain information on the monetary value of asset holdings and their composition. However it asks each respondent whether they save for investment purposes or not. The 708 individuals who respond in the affirmative are further asked about the form their investment takes. Focusing on those who save and invest allows calculating the proportion of individuals holding each asset class as a form of investment and their educational achievement, monthly income as well as their rural versus urban status. Table 5 summarizes this information.

As can be seen households' asset choices by the rural–urban divide as well as average years of schooling and monthly income by asset class conform to theoretical expectations. For each real asset the rural proportion exceeds the urban one, while the reverse holds for financial assets. The relevant differences are statistically significant for only two real assets – gold, other – and two financial ones – TL and foreign exchange accounts.[11] We believe this pattern is consistent with the rural–urban migration process. According to our sample 38% of Turks are first- or second-generation urbanites. Many urban residents still maintain rural ties. Thus only a very small minority holds equity or foreign exchange accounts. Recalling the huge devaluation of 2001 where holders of Turkish lira (TL) accounts suffered serious losses, one would expect a higher prevalence of forex accounts.[12] The age composition of the saving population partly explains the phenomenon. Not surprisingly, forex holders are the oldest group: their average age is 44 years against 38 for those who prefer TL accounts as well as all other categories. The difference is very significant statistically. A complementary explanation involves the relative monetary size of forex versus TL bank account holdings. Since 37% of the total bank deposits are denominated in foreign exchange, see footnote 11, assuming uniform size distributions for TL as well as forex holdings one would expect 98

Table 5. Real versus financial asset choice.

	Rural (n = 566)	Urban (n = 2,041)	Education (years)	TL income
Gold***n = 250	0.131	0.086	9.3	2,288 ($1,090)
Real estate n = 207	0.088	0.077	8.8	2,148 ($1,023)
Other (cash, jewelry, etc.)*** n = 30	0.023	0.008	8.4	2,326 ($1,108)
TL accounts? n = 235	0.078	0.094	10.1	2,547 ($1,213)
Equity n = 17	0.005	0.0069	12.1	2,959 ($1,409)
Forex accounts** n = 30	0.004	0.014	10.3	2,523 ($1,201)

(***), (**), and (*) indicate the rural–urban proportions differ significantly at 1, 5, and 12% levels, respectively. Average income [education] for real versus financial asset holders is 2143TL [9] and 2537TL [10.1], respectively. Both differences are significant at 1% ($1 = 2.1 TL as of January 2014).

(0.37*(235 + 30)) forex account holders. The much fewer – 30 – observed forex holders are consistent with the reported asymmetry of these holdings. Notably according to Bloomberg[13] the size distribution of forex accounts is more right skewed than the TL ones. According to that report TL accounts exceeding 1 million liras constitute 46% of the total TL accounts, whereas accounts above 1 million liras form 55% of forex accounts. It follows that the size of an average forex account must be larger than the corresponding TL one. This is consistent with the observed numbers of TL versus forex account holders. Since 1 million TL is about 41 times per capita income, it would follow that wealthier people tend to have longer memories. This latter characteristic is implied by the "chronological versus psychological time" distinction introduced by 1988 Nobel laureate Allais, see Barthalon (2014).

Finally, we note as expected, holders of gold, real estate and other tend to be less educated and to have lower monthly incomes than those who prefer financial assets like equity, foreign exchange or TL-denominated bank accounts. The relevant statistically significant differences are displayed in Table 5.

We also ran a probit regression to elucidate the variables bearing on the financial versus real asset choice. The regression coefficients and the associated marginal effects are displayed in the second column (*Financial*) of Tables 3 and 4, respectively. The dependent variable *Financial* takes the value 1 for the 282 financial asset holders and 0 for the 487 who prefer real assets. We note the estimation utilizes only 661 observations owing to missing values on some of our regressors.

Focusing on the marginal effects shown in the second column of Table 4, we note all else equal, women are about 8% less likely to prefer financial over real assets. Being a city dweller raises that same likelihood by almost 25 percentage points, whereas the comparable magnitude for a metropolitan person is around 20%. We note migrants are more likely to hold financial assets than the most "stable" individuals (stbl_stbl). However, the effect is statistically significant only for second-generation migrants, i.e. imm_stbl and imm_imm.

We note the being religious, with a *p*-value of 0.15, is marginally significant. Its coefficient on the second column of Table 4 indicates that, holding all other determinants at their mean value, being religious, i.e. practicing, reduces the likelihood of choosing a financial asset by about 8%. We also used a sharper measure of piousness, Ddevout, 12% of our respondents, instead of Dreligious, 70% of our sample. This measure assigns 1 to devout respondents and 0 otherwise, whereas under Dreligious both devout or religious individuals got 1 and the rest 0. Under this sharper measure the impact of religiosity on preference for financial assets turned out to be negative but indistinguishable from zero, with a *p*-value of 0.47.[14]

Turning to our other demographic variables, we observe age,[15] marital status and household size seem to be unrelated to the wealth holding form decision. All four income quintile dummies are insignificant. Thus one's relative position in the income distribution ladder, as distinct from size, does not seem to matter. On the other hand, education impinges strongly on the financial versus real decision. Being college educated is associated with an almost 12% increased preference for financial assets.

Looking at the regional dummies, we note significant variation across regions. For instance people from Mediterranean and South Eastern Anatolia, regions 6 and 12, are about 11% less likely to hold financial assets relative to Istanbouliotes. On the other hand, individuals residing in North Eastern, Central Anatolia and on the Western Black Sea coast, regions 10, 7 and 8, seem to have a greater preference for financial assets than those from Istanbul. In particular a resident of North Eastern Anatolia is 55% more likely to hold financial, as distinct from real wealth, than her/his Istanbul counterpart. The comparable figures for Central Anatolia and Western Black Sea are 36% and 20%, respectively.

The Bank Loan Decision

In our sample, mortgages are the most common form of bank loan, closely followed by car loans. Out of 923 individuals who have taken a bank loan, 386 state mortgage as the reason while 323 give car purchase. Business and education loans come as a distant third (163) and fourth (98). Finally 78 individuals mention "loan repayment" as their reason for taking a bank loan. (The numbers do not add up to 923 because the categories are not mutually exclusive.) These numbers and casual observation suggest Turkish bank loans to households typically finance home and car purchases associated with family formation. The two-way tabulation of married versus mortgage and car loan holders in Table 6 confirms this expectation. Almost 87% of those who hold a mortgage are married, whereas among nonmortgage people the marriage rate is 68%. A very similar pattern is valid for car loans: 85% versus 69%, respectively. Those differences are strongly significant. Comparing the individuals who stated having contracted a business loan with the rest of the sample reveals interesting insights. They are, as expected, mostly self-employed people with irregular incomes residing in non-metropolitan areas. In addition, they are more likely to be savers and to also borrow informally, suggesting all three sources are used to finance business ventures. Table 7 shows the break-up of income regularity, namely wage, salary earner versus self-employed status and business loan usage. It can be seen that although the self-employed constitute around 30% of our sample, their proportion among business loan takers is much higher, 42%. The reverse holds true among salary earners: 70% in general but 58% among those taking a business loan. These are statistically significant differences.

The third column of Tables 3(coefficients) and 4 (marginal effects) displays the results of our probit equation regarding choice of a bank loan. The 923 individuals who affirm having taken a *Bank Loan* get one, and the remaining 1,684 who have not taken such a loan are assigned zero. As in the *Save* regression, due to missing values for some regressors, we can only use 2,409 observations out of a total of 2,607.

Table 6. Marriage versus home and car loans.

0 no, 1 yes	Married 0	Married 1	Totals
Mortgage (Car) 0	709 (712)	1,512 (1,572)	2,221 (2,284)
Mortgage (Car) 1	51 (48)	335 (275)	386 (323)

The differences are significant at 1%.

Table 7. Income regularity versus business loans.

0 no, 1 yes	Self-employed	Wage and salary	Row totals
Business Loan 0	722 (29.5%)	1,722 (70.5%)	2,444 (100%)
Business Loan 1	69 (42.3%)	94 (57.7%)	163 (100%)
Total	791 (30.3%)	1,816 (69.7%)	2,607 (100%)

The differences are significant at 1%.

Focusing on marginal effects, the third column in Table 4 reveals marriage has the largest impact. All else equal, being married associates with a full 16 percentage points increased likelihood of taking a bank loan. Age has a small but very significant relationship with bank loans. Being (marginally) older than the average, 40 years, increases the likelihood of taking a bank loan by 2.3%. However the impact of age squared is negative and significant, implying reduction of that chance for the too young and too old. Being female reduces the chance of being a bank borrower by 6.1%.

As expected, socioeconomic attributes significantly correlate with borrowing/lending decisions. For instance, being self-employed reduces the likelihood of borrowing by 7.5%. Those with a college education (or more) have a 6.4% higher probability of contracting a *Bank Loan* compared to their less-educated peers. Looking at income, we note that distribution has a strong impact. All else equal, an individual in the top income quintile is 11% more likely to take out a *Bank Loan* compared to someone in the bottom quintile. Moreover, statistically speaking there is almost no difference in the borrowing behavior of the population belonging to the bottom four income quintiles. According to our results, borrowing from banks is restricted to the top income quintile.

The coefficients of NUTS1 level region dummies indicate that when it comes to bank loans, there is no difference between our reference region Istanbul, and the Western Marmara, Black Sea Mediterranean coasts, as well as North East, Central East Anatolia. On the other hand people from the Aegean and Western Anatolia regions are more likely to contract a bank loan than Istanbouliotes, by 10% and 5%, respectively. Finally individuals from Eastern Marmara and Southeastern Anatolia are less likely than those from Istanbul to borrow from a bank. The relevant differences are (minus—) 9% and (minus -) 6%.

The rural/urban/metropolitan divide has some influence on the likelihood of borrowing from a bank. The coefficient of Dcity indicates a city dweller has a 7% higher chance of contracting a bank loan compared to her/his rural peer. Second-generation migrants are 6% more likely to take out a bank loan compared to non-migrants, namely stbl_stbl. This effect is strongly significant for imm_stbl with a *p*-value of 0.012, whereas it is only marginally significant for imm_imm whose *p*-value is 0.15.

Regarding religiosity we note the marginal effect of Dreligious is basically zero with a *p*-value of 0.871. As mentioned above the marginal impact of being self-employed is strongly negative, minus −7.5% *p*-value = 0.000. Since we interact religiosity with being self-employed, as our Equation 3 shows, these marginal effects reflect the combined influence of both channels. Thus we conclude being self-employed correlates with less usage of formal bank loans. But this is unrelated with religiosity as measured by Dreligious. Religious people look indistinguishable from their non-practicing counterparts in terms of formal borrowing behavior. We note this finding is robust. When we interact religiosity with regional as well as urbanization dummies, the results do not change. As mentioned in the Asset Choice section, we also used a sharper measure of religiosity namely Ddevout, assigning 1 to devout respondents and 0 otherwise, whereas under Dreligious both devout and religious individuals got 1 and the rest 0. When interacted with Dselfemployed, being devout had a significant negative association with taking out a bank loan. The magnitude of the marginal effect was minus 5% with an associated *p*-value of 0.004.[16]

All in all, our findings are consistent with policymakers' complaints regarding the large share of consumption credits and the low share of business loans in bank loan portfolios [see Aysan, Dolgun, and Turhan (2013) and footnote 3]. However, religiosity does not seem to be associated with the decisions involved. In our view to the extent that they concentrate on small business loans, participation banks might help reduce the opacity problem connected with evaluating loans to such businesses. But substantiating this opinion requires careful evaluation using detailed and comparative credit data and not a consumer survey. Next we focus our attention on the bank loan versus informal loan distinction since it is closely related to the difficulty banks have in assessing loans to small and medium enterprises.

Formal Versus Informal Loans

A recurring theme of the informality literature involves the extra evaluative difficulty it causes for access to credit. In addition to collateral requirements that can be hard to fulfill, the opacity associated with informality can severely restrict such firms' ability to obtain formal credit. Bianchi (2010) explores the linkage between entrepreneurship, credit constraints and economic development theoretically, whereas Levine et al. (2010) carried out an extensive survey. The issue is closely intertwined with banks' ability and willingness to assess SMEs'[17] (small and medium-sized enterprise) creditworthiness because informal firms are invariably smaller than their formal counterparts. Davutyan and Ozar (2006) as well as Aysan, Disli, and Schoors (2014) explore various dimensions of this problem in a Turkish context.

Konda's survey allows us to construct a dummy variable Dselfemployed, which is 1 for the self-employed, e.g. artisans, farmers and other small businesses, and 0 for regular wage and salary earners. Combining that information with those who obtained bank loans and informal loans, i.e. from friend and family, allows us to construct Table 8.

It can be seen that the self-employed are more likely to use informal loans as compared to formal loans. Among the 1,529 informal loan users the ratio of the self-employed is 33%, whereas the corresponding percentage for the 914 formal borrowers is 24%. This is a statistically significant difference.

In order to sharply focus on the formal (bank) versus informal (friends and family) loan dichotomy, we construct a dummy variable *Only Bank Loan*. As explained in the Data Appendix, we exclude those who never borrow (686) and those who borrow from both (594) sources. We end up with 1,327 individuals: 329 formal and 998 informal borrowers. In this sample the contrast gets sharper. As displayed on Table 9, the self-employed who borrow exclusively informally significantly outnumber the ones who borrow exclusively formally. The informal borrowers' ratio is 37% whereas the formal one equals 21%.

The last column of Table 4 presents the marginal effects for our regressors on the formal versus informal loan decision for those who borrow exclusively from one or the other source, *Only Bank Loan*. Again, due to missing values for some RHS variables, the regression utilizes only 1,202 of our 1,327 exclusively formal versus informal borrowers.

Focusing on the last two columns of Table 4, we note there are considerable differences. Although demographic variables like age and marital status are still significant, the magnitude and strength of the association decline. The same is true for the influence of a college education whose marginal effect

Table 8. Self-employment status and access to formal versus informal loans.

0 no, 1 yes	Dselfemployed 0	Dselfemployed 1	Totals
Formal (infrml) 0	1,124 (726)	550 (246)	1,674 (972)
Formal (infrml) 1	692 (1,026)	222 (503)	914 (1,529)

The differences are significant at 1%.

Table 9. Self-employment status and access to exclusively formal versus informal loans.

	Self-employed	Wage and salary	Total
Only friend loan	368 (37%)	630 (63%)	999 (100%)
Only bank loan	68 (21%)	261 (79%)	329 (100%)
Total	436 (33%)	891 (67%)	1,327

The differences are significant at 1%.

goes down from 6.4 to 5%. On the other hand, the strongly significant negative influence of being self-employed endures and gets larger, minus -10% instead of minus—7.5%.

Regional differences impinge considerably on the formal versus informal borrowing behavior. The coefficient and strength of association changes significantly when we compare formal to informal borrowers. Regional dummies indicate all else equal formal loans relative to informal ones are much more prevalent in Western Marmara (Dregion5) relative to Istanbul. Similarly, formal loans seem to be much less prevalent in South Eastern Anatolia (Dregion12) relative to Istanbul. We note for these two regions a similar pattern held under contracting a bank loan relative to no bank loan. However, the difference gets magnified from 5% to 10% for Western Marmara, and from minus -6% to minus—26% for South Eastern Anatolia. The corresponding z and *p*-values show a very significant rise in the strength of the association.

Rural urban differences get magnified as well. The positive impact of City over Country goes from 7 to 12%. The coefficient of imm_stbl, second-generation migrants, gets strongly significant and its magnitude doubles from 6 to 13%.

We note the marginal effect of Dreligious, directly plus through its interaction with the self-employment dummy, is indistinguishable from zero with a *p*-value of 0.38. Thus as in the Bank Loan case, being religious does not seem to be associated with the formal versus informal loan decision. When we interact Dreligious with the regional or urbanization dummies, this insignificance persists.[18]

In light of these findings we conclude evidence, pointing to the difficulty in accessing formal loans for the self-employed, does exist. Available statistical information indicates the self-employed have a harder time accessing formal as distinct from informal loans. However, there is no indication this comparative inaccessibility is related to any unwillingness to use or to extend formal loans on religious grounds.[19] A natural question involves the loan granting behavior of participatory versus commercial banks. Unfortunately our data does not allow us to separate formal loans on that basis. Therefore, regarding the issue raised by Aysan, Dolgun, and Turhan (2013), participation banks extending inclusion to religious individuals, a fair assessment would be the following. Our data does not indicate the existence of any exclusion from formal loans on the basis of religiosity. But we find robust evidence for a negative association between formal loans and being self-employed. It would be reasonable to posit that part of the negative relationship could be due to the opacity of the business structure of the self-employed. Therefore it might be easier for a participation bank to assess the business prospects of such firms. This conclusion follows from the fact that credits granted by such banks are not *loans per se* but equity in a joint venture between the bank and the business in question. As such they require greater information sharing by the self-employed, which would reduce opacity.

As mentioned previously we cannot split our formal loans along participatory versus non-participatory lines. Ongena and Yuncu's (2011) is the only empirical work we know that makes such a distinction. They report Turkish participation banks have a tendency to work with relatively small and new firms. Their finding seems to point to Anatolian firms as distinct from the old established ones of metropolitan Istanbul.[20] Interestingly Ongena and Yuncu (2011) report that participation banks mainly deal with "transparent" firms. We believe this issue deserves careful analysis with detailed comparative data.

Conclusion

We use a representative survey of the Turkish household sector and investigate factors that correlate with saving and borrowing decisions. We use the same set of regressors and run four probit regressions to elucidate (i) the saving decision, (ii) asset choice or portfolio composition for those who save, (iii) the bank loan decision and lastly (iv) the formal versus informal borrowing decision.

We find that gender matters. All else equal, women who save are less likely to choose a financial asset and prefer real ones. Also women are less likely to borrow formally. Mature people are more likely to save and to borrow from banks as well as to borrow formally, but this positive impact is tempered by negative squared age effects for the bank borrowing cases. We note being married strongly increases the likelihood of saving, taking a bank loan and formal borrowing. We argue the

latter two effects reflect most bank loans being taken to finance home and car purchases, which are related to family formation.

A college education is strongly positively associated with saving, preferring financial as distinct from real assets and formal borrowing. All else equal, a college degree is associated with a 4.6% increased likelihood of being a saver. Since the share of college graduates is expected to converge to the higher levels seen in developed countries, this finding bodes well for the future of household savings in Turkey.

Income and its distribution among both individuals and regions matter a great deal. We note according to our data only the top 40% of Turkish households save. Similarly, bank loans seem to be restricted to the top 20% of the income scale. The real versus financial asset choice decision, all else equal, does not correlate with income distribution.

Predictably urbanization is associated with saving-borrowing decisions. All else equal, urban dwellers are less likely to save compared to their rural counterparts.

This must be a contributing factor to the currently observed decline in the household saving ratio. On the other hand urbanites are more likely to choose financial over real assets. To the extent that financial assets can be deployed more productively than real ones, this bodes well for Turkey's growth prospects.

Finally urbanization is also positively associated with bank loan usage.

Being self-employed matters a great deal for bank borrowing behavior. All else equal, such individuals are 7.5–10% less likely to borrow formally. As shown on Table 7, self-employed people are more likely to borrow for business purposes. Also as documented on Table 6 and discussed previously, there exists strong positive correlation between marriage and bank loans. As such there is support for policymakers' complaint regarding the excessive share of consumer loans in bank loan portfolios.

Regarding the possible impact of religion on financial behavior, our findings indicate religious individuals have some preference for real as distinct from financial assets but the evidence is weak. When it comes to saving and bank loan decisions, we found no difference between religious and non-practicing people. On the other hand being devout, as distinct from being religious, associates negatively with utilizing formal bank loans.

Notes

1. The saving ratio figures pertain to 2012. Turkish savings are on a falling trend, going from around 24% in 1998 to the current 14%. http://search.worldbank.org/data. Accessed on 08/02/2015.
2. Turkey shares these problems with other nations, e.g., Brazil. Loayza, Schmidt-Hebbel, and Serven (2000a, 2000b) provide an overview of what drives savings in developing countries and in general, respectively.
3. See for instance, the interview with Minister of Development Cevdet Yılmaz in http://www.sabah.com.tr/Ekonomi/2013/09/21/yatirim-kredileri-artirilsin, "Investment credits should be expanded."
4. Although Aysan, Dolgun, and Turhan (2013) do not make this point explicitly, it is implicit to their argumentation.
5. We are grateful to an anonymous referee for suggesting this route as well as clustering on NUTS1 regions.
6. We note the survey was conducted as part of Konda's business routine. In other words, it was not bespoke for our study. The authors had no involvement whatsoever with questionnaire design and we did not pay the firm to conduct the survey.
7. The fourth quintile starts at $1,040, the fifth at $1,921. See Table 2.
8. Thanks are due to an anonymous referee for bringing this point to our attention.
9. Given the small samples involved we do not report these results. They are available upon request.

10. The finding is also robust with respect to various alternative specifications like interacting the urbanization dummies with religiosity. It is worth mentioning Istanbul comes closest to representing "average Turkey" since "the Istanbul vote share" of a political party closely approximates its national share.

11. According to the Turkish Central Bank, currently 63% of total bank deposits in Turkey are denominated in TL, the rest, namely 37%, in dollars or euros. http://www.tcmb.gov.tr/ Accessed on 31/01/2015.

12. Ozatay and Sak (2002) is the best source on the 2000–2001 Turkish banking-cum-currency crisis.

13. http://www.bloomberght.com/haberler/haber/1305535-mevduat-zenginleri-artiyor. Accessed on 04/02/2015.

14. This result, which is not reported for brevity, is available upon request.

15. As one referee pointed out, the two financial crises of recent memory, 1994 and 2001, would have nudged elderly people away from Turkish Lira and towards foreign exchange financial assets. However since our real versus financial asset distinction lumps TL and forex together as financial, the regression is unable to identify the age effect discussed previously.

16. In the interest of brevity we do not report these results. They are available upon request.

17. The Micro and Small Enterprises (MSEs) pose a greater challenge. See Davutyan and Ozar (2006).

18. The insignificance still holds when we measure piousness with Ddevout instead of Dreligious. These results are available upon request.

19. Excepting the negative association between being devout and utilizing bank loans presented in the section The Bank Loan Decision. We note only 12% of our respondents characterize themselves as devout, whereas the religious comprise 70%.

20. See "Rise of Anatolian Tigers" for a detailed discussion, World Bank TEPAV Report (2015).

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Appendix

Variables

Save: A 0/1 dummy taking the value 1 for those responding yes (708 individuals) to the question "Are you saving/investing now?" Those who say no are assigned 0 (1,899 individuals).

Financial: The 708 savers were further asked about the major saving instrument they used. There were six categories: Turkish lira bank accounts, foreign exchange denominated bank accounts, equity, gold, real estate and other, e.g. cash in mattress, jewelry, chattel. See Table 5 for the breakup. We characterize the first three forms as "financial" and assign value 1; the rest are classified as "real" and get value 0. We have 282 ones and 487 zeros.

Bankloan: 923 individuals respond yes to "Have you taken a bank loan?" They are assigned value 1. The remaining 1684 people respond no, and receive 0.

Only BankLoan: The survey has another question where people are asked whether "they have borrowed from friends and family". To sharply distinguish between the determinants of formal versus informal borrowing, we exclude those who never borrowed from either source and those who borrowed from both sources (686 and 594 people, respectively). We thus end up with 329 individuals who exclusively borrowed formally and 998 people who only borrowed informally. Formal borrowers get a 1, whereas informal borrowers are assigned value 0.

We use the same explanatory variables for all four probit regressions. Excepting per capita NUTS1 level of income obtained from Turkstat (2014) they all come from the Konda survey. These are:

female: 1 for female 0 for male.

age: Age of the respondent.

agesq: squared age.

married: 1 for married 0 otherwise.

lhhsize: natural log of household size.

educ2: 1 for college education or more, 0 otherwise.

Dinc_qnt(i): 1 for belonging for the relevant income quintile, 0 else.

Thus Dinc_qnt5 equals 1 for someone belong to the top 20% of the income distribution and 0 otherwise. Dinc_qnt1, the lowest 20% is taken as reference. The top two rows of Tables 1 and 2 give the cutoff limits for each income quintile.

Dselfemployed: 1 if the person is self-employed, regular wage and salary earners are assigned 0.

NUTS1 level region dummies: Dregion1 = Istanbul, Dregion 2 = West Marmara, Dregion3 = Aegean, Dregion4 = East Marmara, Dregion5 = West Marmara, Dregion6 = Mediterranean, Dregion7 = Central Anatolia, Dregion8 = West Black Sea, Dregion9 = East Black Sea, Dregion10 = North East Anatolia, Dregion11 = Central East Anatolia, Dregion12 = South East Anatolia. Thus when a respondent resides in the Aegean region Dregion3 gets 1 and 0 otherwise. We use Istanbul as the reference dummy.

Dcity: 1 if the respondent lives in a city, 0 otherwise.

Dmetro: 1 if respondent lives in a metropolitan area, 0 otherwise. The third residence category, namely country or rural, is used as reference.

When discussing asset choice, we combine city and metro dwellers into a single category and focus on the urban–rural distinction.

Dreligious: 1 if the respondent characterizes herself/himself as mildly or devoutly religious, people identifying themselves as non-practicing are assigned 0 and used as the reference category. Thus, in this study, we use religious and practicing interchangeably.

stbl_stbl: 1 if both the respondent's and her/his father's birth region is the same as the respondent's current region of residence; this is the excluded reference category.

imm_imm: 1 if the respondent and her/his father were born in different regions and the respondent's birth region differs from her/his current region of residence.

stbl_imm: 1 if both the respondent and her/his father were born in the same region, but the respondent currently resides in a different region.

imm_stbl: 1 if the respondent and her/his father were born in different regions, but the respondent currently resides in her/his birth region.