Appendix accompanying:

Does Households' Wealth Predict the Efficiency of their Asset Mix? Empirical Evidence

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Contents

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This paper uses data from the Deutsche Bundesbank Panel on Household Finances. The results published and the related observations and analysis may not correspond to results or analysis of the data producers.
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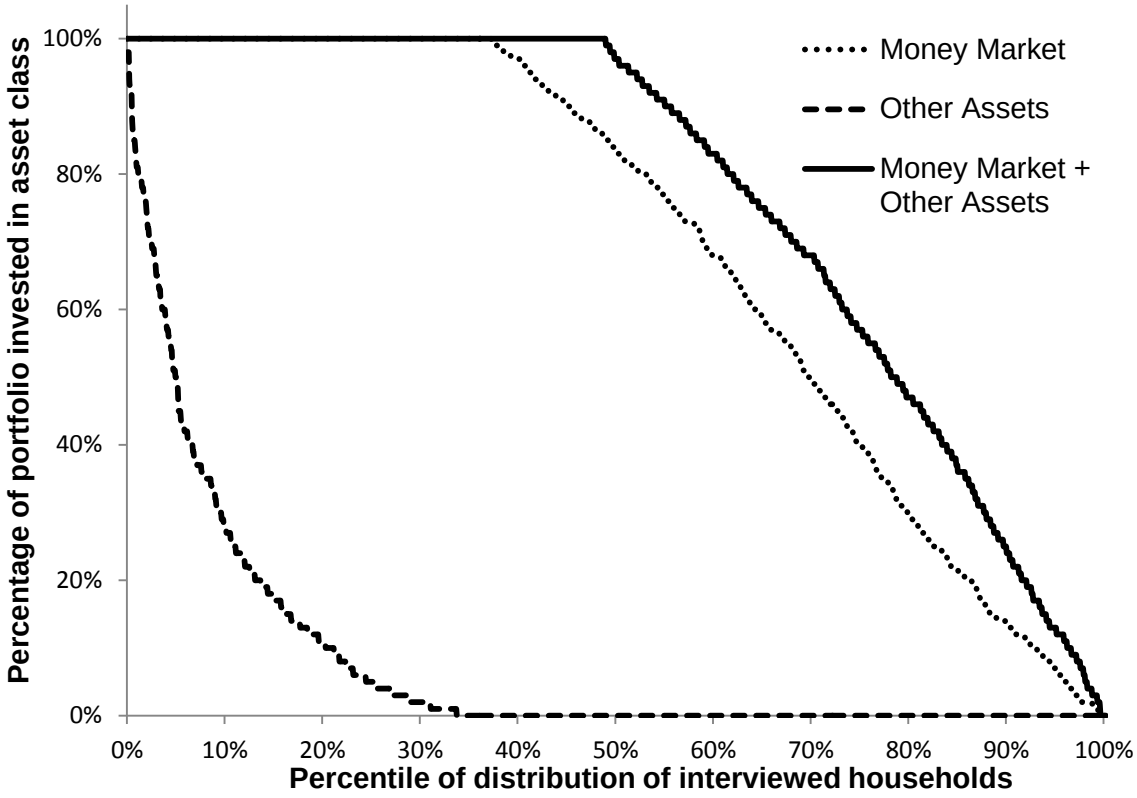
A. The exclusion of households which invest more than 90 percent of their portfolios' net value in the asset classes *Money market* and *Other assets*

After excluding leveraged portfolios and those households whose portfolio undercuts a net value of 1,000 EUR our sample size shrinks from 3,565 to 1,845 households. In Figure A.1 we present the amounts of the remaining households' portfolios that are invested in the asset classes *Money market* and O*ther assets*.

Figure A.1: Amounts of households' portfolios invested in *Money market* and O*ther assets*



Nearly 40 percent of these remaining households invest their entire portfolio's net value in the asset class *Money market*. These households' portfolios are per definition on the efficient frontier, since the asset class *Money market* represents an investment in the risk free asset. We therefore have to exclude these households to not skew our results. Roughly 10 percent of the 1845 households invest more than 30 percent of their portfolios' net value in the asset class O*ther assets.* Since the various different assets and purposes associated with this asset class do not allow an appropriate analysis we have to preclude the asset class O*ther assets* from the calculations of the portfolio outcomes. By normalizing the sum of the remaining asset classes' amounts to 100 percent, we have to be aware that if households invest solely in the two asset classes O*ther assets* and *Money market*, the amount invested in the class *Money market* will be normalized to 100 percent. This, again, would lead to the above described effect that these households' portfolios would be on the efficient frontier. We consequently have to exclude the households that solely invest in the two asset classes O*ther assets* and *Money market*. The described

exclusions reduce our sample size to 948 households. Calvet, Campbell, and Sodini (2007) observe that "[r]ich and educated households select portfolios with a high Sharpe-Ratio but also a high risky share, resulting in a high complete return loss. Conversely, unsophisticated households allocate a small fraction of their financial wealth to an inefficient risk portfolio and overall incur low complete portfolio return losses." (Calvet, Campbell, and Sodini 2007, p. 738) To prevent this effect, we remove the 118 households from our sample that invest less than 10 percent of the net value of their portfolio in risky assets. We present descriptive statistics of the removed portfolios' net value in Table A.1. In addition, we provide statistics of the portfolios that would have been removed, if we excluded all portfolios that invested less than 5 or less than 15 percent of the portfolio's net value in risky assets. The 20th and 80th percentile and the median of the portfolios' net values of the three samples are very similar to the net value of the 830 portfolios that we use for our further analyses. We therefore state that the 118 excluded households are not less wealthy than the remaining households (and would therefore be able to invest in risky assets) but are just not interested in investing their wealth in risky assets. In addition, we do not assume that the decision to set the minimal amount of risky assets to 10 percent harms the generalizability of our results since setting the minimal amount to 5 or 15 percent would not change the structure regarding the portfolios' net values in our sample.

Table A.1: Descriptive statistics of the net value of portfolios which show a high amount of investments in the asset classes *Money market* and *Other assets*

	Percentage of portfolio invested in asset classes *Money market* and *Other assets*		
	>95	>90	>85
Mean	147,850	126,966	121,170
20th percentile	35,630	33,380	34,100
Median	80,600	73,000	73,000
80th percentile	195,480	197,176	186,008
Sdv.	176,309	147,093	151,358
N	55	118	187

B. Households' ability and purpose to save (subsample of 830 households with unlevered speculation portfolios)

We provide descriptive statistics on households' assessment whether their income is appropriate to cover their needs ($ApprIncome_h$, see Table B.1), and household's estimation whether they will be able to save in the next year ($FutSavings_h$, see Table B.2). As presented in Table B.1, only .5 percent of the households state that their monthly income covers their expenses "with great difficulties". In contrast 93.3 percent of the households state that their monthly income (fairly) easily captures their expenses. The latter finding supports our assumption that our approach is adequate to extract those households who are able to establish a speculation portfolio.

Table B.1: Households' assessment whether their monthly income is sufficient to capture expenses

	N	Percentage
with great difficulty	4	0.5
with some difficulties	52	6.3
fairly easily	281	33.9
easily	493	59.4
Σ	830	100

Table B.2: Households' estimation regarding future savings

	N	Percentage
Question filtered, do not know	36	4.3
A smaller share	164	19.8
The same share	543	65.4
A larger share	87	10.5
Σ	830	100

We present descriptive statistics of Households' main purpose for saving in Table B.3. More than 60 percent of the households primarily save for old-age provisions and emergency situation. Combined with the 3rd and 4th popular purposes ("large purchase excl. vehicles" and "training/supporting children or grandchildren") our ANOVA analysis covers roughly 80 percent of households saving purposes.

Table B.3: Households' main purpose for saving

	N	Percentage
old-age provision	269	32.4
funds for emergency situations	246	29.6
larger purchase excl vehicles (second property, furniture, etc)	74	8.9
training / supporting children or grandchildren	61	7.3
holiday / travel	39	4.7
other	141	17.0
Σ	830	100

C. Stepwise regression analyses

We use stepwise regression analyses to check whether the net value of households' portfolios shows more explanatory power regarding households' investment outcomes than wealth measures of former studies (households' total wealth and monthly income). Our analyses show that former wealth measures are not statistically significant when the net value of households' portfolios is included as independent variable to explain the return loss ($RL_{h,T}$, see Tables C.1 and C.2 in section a), the unnecessary volatility ($UV_{h,T}$, see Tables C.3 and C.4 in section b), and the Sharpe-Ratio ($SR_{h,T}$, see Tables C.5 and C.6 in section c) of households' portfolios. We, therefore, assume our approach to be a more appropriate proxy to control for the influence of households' wealth on investment outcomes.

a. Stepwise regression analyses with households' return loss as dependent variable and different wealth measures as independent variables

Table C.1: Influence of the net value of households' portfolio and households' monthly income on the return loss of households' portfolios

Estimation period of $RL_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.004***	.004***	.005*	.005**	.002	.001*	.001
	(.001)	(.001)	(.003)	(.002)	(.001)	(.001)	(.001)
$Income_h$	-.000	-.000	-.000	-.000	-.000	-.000	-.000
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\beta_{0i,h}$	-0.013	-.011	.037	.002	.031**	.013*	.021***
	(.016)	(.011)	(.029)	(.020)	(.013)	(.007)	(.007)
R^2	.012	.017	.004	.011	.002	.004	.001
R^2 adj.	.009	.014	.002	.009	.000	.001	-.001
F-Test	4.944	7.079	1.641	4.580	.994	1.471	.605

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using the logarithmized net value of the respective household's portfolio (SP_h) and the household's monthly income in Euros ($Income_h$) as independent variable with the return loss of households' portfolios per estimation period ($RL_{i,h}$) as dependent variable. Estimation periods with a negative sign denote the return loss that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the return loss that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the return loss of households' portfolios of the year before the survey took place on SP_h and $Income_h$ yields a coefficient of the net value of the portfolio of .004 with a statistical significance at the one percent level and an adjusted R^2 of .009.

Table C.2: Influence of the net value of households' portfolio and households' total wealth on the return loss of households' portfolios

Estimation period of $RL_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.004***	.003***	.005	.006***	.002	.001	.001
	(.002)	(.001)	(.003)	(.002)	(.001)	(.001)	(.001)
$TWealth_h$	.001	.000	-.002	.000	.000	.000	.000
	(.002)	(.001)	(.003)	(.002)	(.001)	(.001)	(.001)
$\beta_{0i,h}$	-.021	-.011	.052	.003	.033**	.012	.019**
	(.018)	(.012)	(.034)	(.023)	(.015)	(.008)	(.008)
R^2	.015	.015	.003	.012	.003	.004	.002
R^2 adj.	.012	.013	.001	.010	.001	.002	.000
F-Test	6.198	6.269	1.397	5.039	1.233	1.773	.861

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using the logarithmized net value of the respective household's portfolio (SP_h) and the household's logarithmized total wealth in EUR ($TWealth_h$) as independent variable with the return loss of households' portfolios per estimation period ($RL_{i,h}$) as dependent variable. Estimation periods with a negative sign denote the return loss that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the return loss that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the return loss of households' portfolios of the year before the survey took place on SP_h and $TWealth_h$ yields a coefficient of the net value of the portfolio of .004 with a statistical significance at the one percent level and an adjusted R^2 of .012.

b. Stepwise regression analyses with the unnecessary volatility of households' portfolios as dependent variable and different wealth measures as independent variables

Table C.3: Influence of the net value of households' portfolio and households' monthly income on the unnecessary volatility of households' portfolios

Estimation period of $UV_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.002***	.001***	-.005**	.007***	.003	.002	.001
	(.001)	(.000)	(.002)	(.002)	(.002)	(.001)	(.001)
$Income_h$	-.000	-.000**	-.000	-.000	-.000	-.000	-.000
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\beta_{0i,h}$	-.006	-.003	.134***	.004	.031*	.016	.019*
	(.007)	(.003)	(.025)	(.023)	(.018)	(.010)	(.010)
R^2	.012	.024	.006	.013	.003	.003	.002
R^2 adj.	.010	.021	.004	.011	.001	.001	.000
F-Test	5.230	10.073	2.607	5.557	1.288	1.346	1.014

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using the logarithmized net value of the respective household's portfolio (SP_h) and the household's monthly income in Euros ($Income_h$) as independent variable with the unnecessary volatility of households' portfolios per estimation period ($UV_{i,h}$) as dependent variable. Estimation periods with a negative sign denote the return loss that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the return loss that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the unnecessary volatility of households' portfolios of the year before the survey took place on SP_h and $Income_h$yields a coefficient of the net value of the portfolio of .002 with a statistical significance at the one percent level and an adjusted R^2 of .010.

Table C.4: Influence of the net value of households' portfolio and households' total wealth on the unnecessary volatility of households' portfolios

Estimation period of $UV_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.002***	.001***	-.003	.008***	.003*	.002	.002
	(.001)	(.000)	(.003)	(.002)	(.002)	(.001)	(.001)
$TWealth_h$	.000	.000	-.004	-.001	-,001	.000	.000
	(.001)	(.000)	(.003)	(.002)	(.002)	(.001)	(.001)
$\beta_{0i,h}$	-.010	-.002	.160***	.010	.032	.017	.017
	(.008)	(.004)	(.029)	(.027)	(.021)	(.012)	(.012)
R^2	.016	.022	.009	.015	.004	.003	.003
R^2 adj.	.013	.020	.007	.013	.002	.001	.001
F-Test	6.531	9.220	3.807	6.247	1.688	1.422	1.294

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using the logarithmized net value of the respective household's portfolio (SP_h) and the household's logarithmized total wealth in EUR ($TWealth_h$) as independent variable with the unnecessary volatility of households' portfolios per estimation period ($UV_{i,h}$) as dependent variable. Estimation periods with a negative sign denote the unnecessary volatility that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the unnecessary volatility that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the unnecessary volatility of households' portfolios of the year before the survey took place on SP_h and $TWealth_h$yields a coefficient of the net value of the portfolio of .002 with a statistical significance at the one percent level and an adjusted R^2 of .016.

c. Stepwise regression analyses with households' Sharpe-Ratio as dependent variable and different wealth measures as independent variables

Table C.5: Influence of the net value of households' portfolio and households' monthly income on the Sharpe-Ratio of households' portfolios

Estimation period of $SR_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.005 (.007)	-.080** (.039)	-.033 (.030)	-.036*** (.013)	-.005 (.009)	-.002 (.005)	.005 (.007)
$Income_h$	-.000 (.000)	.000 (.000)	.000 (.000)	-.000 (.000)	-.000 (.000)	.000 (.000)	-.000 (.000)
$\beta_{0i,h}$	.629*** (.073)	1.996*** (.428)	-.163 (.330)	.236* (.139)	.470*** (.103)	.545*** (.057)	.629*** (.073)
R^2	.001	.005	.002	.012	.002	.000	.001
R^2 adj.	-.002	.003	-.001	.010	-.001	-.002	-.002
F-Test	.356	2.154	.638	5.155	.645	.206	.356

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using the logarithmized net value of the respective household's portfolio (SP_h) and the household's monthly income in Euros ($Income_h$) as independent variable with the Sharpe-Ratio of households' portfolios per estimation period ($SR_{i,h}$) as dependent variable. Estimation periods with a negative sign denote the Sharpe-Ratio that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the Sharpe-Ratio that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the Sharpe-Ratio of households' portfolios of the year before the survey took place on SP_h and $Income_h$ yields a coefficient of the net value of the portfolio of .005 with no statistical significance and an adjusted R^2 of -.002.

Table C.6: Influence of the net value of households' portfolio and households' total wealth on the Sharpe-Ratio of households' portfolios

Estimation period of $SR_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.003 (.008)	-.077* (.045)	-.011 (.035)	-.039*** (.015)	-.008 (.011)	-.001 (.006)	-.003 (.008)
$TWealth_h$	.000 (.000)	.005 (.044)	-.027 (.034)	.000 (.014)	-.001 (.011)	-.002 (.006)	.000 (.008)
$\beta_{0i,h}$	.649*** (.085)	1.905*** (.497)	-.051 (.382)	.264 (.161)	.506*** (.119)	.560*** (.066)	.649*** (.085)
R^2	.000	.005	.002	.013	.001	.000	.000
R^2 adj.	-.002	.002	-.001	.010	-.001	-.002	-.002
F-Test	.085	1.974	.773	5.240	.427	.145	.085

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using the logarithmized net value of the respective household's portfolio (SP_h) and the household's logarithmized total wealth in EUR ($TWealth_h$) as independent variable with the Sharpe-Ratio of households' portfolios per estimation period ($SR_{i,h}$) as dependent variable. Estimation periods with a negative sign denote the Sharpe-Ratio that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the Sharpe-Ratio that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the Sharpe-Ratio of households' portfolios of the year before the survey took place on SP_h and $TWealth_h$ yields a coefficient of the net value of the portfolio of .003 with no statistical significance and an adjusted R^2 of -.002.

D. The correlation between the net value of households' speculation portfolio and the return, volatility, return loss, additional volatility, and Sharpe ratio of their asset mix subdivided by quarters

Table D.1: Correlation Coefficients (Pearson) between the net value of the speculation portfolio and the *expected* return, volatility, return loss, additional volatility (both as deviation from the efficient frontier of the respective estimation period), and Sharpe-Ratio

Panel A: Fourth quarter 2010, 226 portfolios					
Estimation period	Return	Volatility	Return loss	Unnecessary volatility	Sharpe-Ratio
-12 month	-,011	,018	,066	,051	,027
-9 month	,009	,019	,045	,045	,026
-6 month	,007	,028	,067	,066	,021
-3 month	-,036	,025	,084	,082	-,041
Panel B: First quarter 2011, 253 portfolios					
Estimation period	Return	Volatility	Return loss	Unnecessary volatility	Sharpe-Ratio
-12 month	-,030	,012	,122*	,164***	-,063
-9 month	-,044	,003	,154**	,184***	-,063
-6 month	-,032	-,001	,147**	,174***	-,044
-3 month	-,039	,003	,147**	,162***	-,046
Panel C: Second quarter 2011, 351 portfolios					
Estimation period	Return	Volatility	Return loss	Unnecessary volatility	Sharpe-Ratio
-12 month	,012	,089*	-,003	,088	,005
-9 month	,052	,084	,071	,130**	,017
-6 month	,055	,080	-,020	,095*	,023
-3 month	,064	,078	,049	,078	,019

Notes: We report Pearson correlation coefficients between the net value of households' portfolios and the expected return, volatility, return loss, unnecessary volatility (both as deviation from the efficient frontier of the respective estimation period), and Sharpe-Ratio. For estimating the return, volatility, return loss, unnecessary volatility, and Sharpe-Ration, we use benchmark data of the last 12, 9, 6, and 3 months *before* the households were interviewed. We subdivide our sample according to the point in time when they were interviewed. Panel A includes portfolios of households which were interviewed in the 4th quarter 2010; Panel B (C) includes portfolios of households which were interviewed in the 1st quarter 2011 (2nd quarter 2011). The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: For the estimation period which starts 12 months and ends one day before the households in the fourth quarter 2010 were interviewed, the Pearson correlation coefficient between the net value of households' portfolios and the return loss of households' portfolios is .066 with no statistical significance.

Table D.2: Correlation Coefficients (Pearson) between the net value of the speculation portfolio and the ***realized*** return, volatility, return loss, additional volatility (both as deviation from the efficient frontier of the respective estimation period), and Sharpe-Ratio

Panel A: Fourth quarter 2010, 226 portfolios

Estimation period	Return	Volatility	Return loss	Unnecessary volatility	Sharpe-Ratio
3 months	-,011	,030	,017	,168**	-,027
6 months	-,006	,038	,111*	,203***	-,014
9 months	-,140**	,028	,121*	,110*	-,117*
12 months	-,148**	,041	,126*	,111*	-,097
2 years	-,063	,047	,092	,090	-,077
3 years	,006	,046	,080	,082	-,036
4 years	,003	,046	,070	,074	-,041

Panel B: First quarter 2011, 253 portfolios

Estimation period	Return	Volatility	Return loss	Unnecessary volatility	Sharpe-Ratio
3 months	,144**	,027	-,074	,024	,095
6 months	-,098	,005	,098	,004	-,111*
9 months	-,120*	,024	,124**	,024	-,148**
12 months	-,132**	,030	,112*	,080	-,109*
2 years	-,101	,029	,109*	,90	-,088
3 years	-,018	,028	,082	,074	-,043
4 years	-,021	,030	,086	,081	-,046

Panel C: Second quarter 2011, 351 portfolios

Estimation period	Return	Volatility	Return loss	Unnecessary volatility	Sharpe-Ratio
3 months	-,128**	,068	,128**	,070	-,067
6 months	-,131**	,079	,131**	,079	-,076
9 months	-,068	,084	,098	,148***	-,061
12 months	-,069	,084	,093	,152***	-,053
2 years	,059	,082	,061	,069	-,004
3 years	,069	,084	,054	,078	-,004
4 years	,092	,085	,041	,055	,019

Notes: We report Pearson correlation coefficients between the net value of households' portfolios and the realized return, volatility, return loss, unnecessary volatility (both as deviation from the efficient frontier of the respective estimation period), and Sharpe-Ratio. For estimating the return, volatility, return loss, unnecessary volatility, and Sharpe-Ration, we use benchmark data of the 3, 6, 9, and 12 months as well as for the 2, 3, and years *after* the households were interviewed. We subdivide our sample according to the point in time when they were interviewed. Panel A includes portfolios of households which were interviewed in the 4th quarter 2010; Panel B (C) includes portfolios of households which were interviewed in the 1st quarter 2011 (2nd quarter 2011). The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: For the households that were interviewed in the fourth quarter of the year 2010 and for the estimation period which starts one day and ends 3 months after the households were interviewed, the Pearson correlation coefficient between the net value of households' portfolios and the return loss of households' portfolios is -.074 with no statistical significance.

E. Regression analyses subdivided by quarters

Table E.1: Regression analyses with households' return loss as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables

Panel A: Fourth quarter 2010, 226 portfolios

Estimation period of $RL_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.002 (.002)	.005* (.003)	.000 (.006)	.000 (.003)	-.001 (.002)	.000 (.001)	-.001 (.001)
$Gender$	-.009** (.005)	-.009 (.006)	-.026** (.013)	-.012* (.006)	-.010** (.005)	-.004* (.002)	-.005* (.003)
Age_h	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
$Income_h$	-.000 (.000)	-.000 (.000)	-.000 (000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)
$TWealth_h$	.001 (.002)	.001 (.003)	-.001 (006)	.001 (.003)	.001 (.002)	.001 (.001)	.001 (.001)
$RiskAtt_h$	.014*** (.004)	.013** (.006)	.058*** (.012)	.030*** (.006)	.024*** (.004)	.010*** (002)	.014*** (.003)
$ApprIncome_h$	.002 (.003)	.003 (.005)	*-.001 (.010)	.002 (.005)	.001 (.004)	.001 (.002)	.000 (.002)
$FutSavings_h$	.002 (.003)	-.001 (.004)	.019** (.009)	.010** (.004)	.007** (.003)	.003* (.002)	.004** (.002)
$\beta_{0i,h}$	-.025 (.029)	-.044 (.041)	.025 (.083)	-.031 (.040)	-.007 (.031)	-.002 (.015)	.002 (.018)
R^2	.096	.073	.138	.156	.160	.123	.158
R^2 adj.	.066	.043	.110	.128	.132	.094	.130
F-Test	3.209	2.392	4.849	5.594	5.763	4.238	5.681

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using Equation (1) with the return loss of households' portfolios per estimation period as dependent variable. We subdivide our sample according to the point in time when the households were interviewed. Panel A includes portfolios of households which were interviewed in the 4th quarter 2010; Panel B (C) includes portfolios of households which were interviewed in the 1st quarter 2011 (2nd quarter 2011). Estimation periods with a negative sign denote the return loss that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the return loss that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the return loss of households' portfolios of the year before the survey took place on the model of Equation (1) yields a coefficient of the net value of the portfolio of .002 with no statistical significance and an adjusted R^2 of .066.

Table E.1: Regression analyses with households' return loss as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables (cont'd)

Panel B: First quarter 2011, 253 portfolios

Estimation period of $RL_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.001 (.001)	.002 (.001)	.006 (.005)	.003 (.004)	.000 (.002)	.000 (.001)	.000 (.001)
$Gender$	-.001 (.002)	.001 (.002)	-.024** (.010)	-.023*** (.008)	-.015*** (.005)	-.006*** (.002)	-.007*** (.002)
Age_h	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
$Income_h$	-.000 (.000).	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	.000 (.000)
$TWealth_h$	.000 (.000)	.000 (.001)	.000 (.005)	.000 (.004)	-.001 (.002)	.000 (.001)	.000 (.001)
$RiskAtt_h$	.004** (.001)	.000 (002)	.064*** (.008)	.049*** (.007)	.027*** (.004)	.013*** (.002)	.013*** (.002)
$ApprIncome_h$	.000 (.001)	.001 (.002)	-.010 (.008)	-.009 (.006)	-.006* (.004)	-.002 (.002)	-.003* (.002)
$FutSavings_h$	-.003*** (.001)	-.006*** (.002)	.003 (.007)	.004 (.006)	.002 (.003)	.001 (.002)	.001 (.002)
$\beta_{0i,h}$	.007 (.010)	.003 (.015)	.002 (.061)	.019 (.048)	.067** (.029)	.023* (.014)	.036 (.014)
R^2	.059	.056	.190	.186	.168	.165	.170
R^2 adj.	.037	.034	.172	.167	.149	.146	.151
F-Test	2.678	2.528	10.060	9.744	8.653	8.465	8.779

Table E.1: Regression analyses with households' return loss as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables (cont'd)

Panel C: Second quarter 2011, 351 portfolios

Estimation period of $RL_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.007 (.005)	.001 (.001)	.001 (.001)	.008** (.004)	.004 (.003)	.002 (.002)	.002 (.002)
$Gender$	.011 (.010)	.003 (.002)	.001 (.003)	.009 (.008)	.004 (.005)	.003 (.003)	.003 (.004)
Age_h	-.001** (.000)	.000 (.000)	.000 (.000)	-.001* (.000)	-.000** (.000)	.000* (.000)	-.000** (.000)
$Income_h$	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
$TWealth_h$	.007 (.005)	.001 (.001)	.000 (.001)	.006* (.004)	.004* (.002)	.002 (.001)	.003* (.002)
$RiskAtt_h$	.029*** (.009)	.003 (.002)	-.001 (.002)	.025*** (.007)	.016*** (.005)	.008*** (.003)	.010*** (.003)
$ApprIncome_h$	-.004 (.008)	-.003 (.002)	-.001 (.002)	-.003 (.006)	-.001 (.004)	-.002 (.002)	-.001 (.003)
$FutSavings_h$	-.007 (.008)	-.003* (.002)	.000 (.002)	-.007 (.006)	-.002 (.004)	-.003 (.002)	-.002 (.003)
$\beta_{0i,h}$	-.091 (.063)	.005 (.014)	.007 (.017)	-.105** (.050)	-.051 (.032)	-.021 (.020)	-.025 (.022)
R^2	.102	.053	.023	.126	.122	.094	.105
R^2 adj.	.069	.018	-.013	.094	.089	.060	.072
F-Test	3.066	1.511	.638	3.886	3.740	2.781	3.164

Table E.2: Regression analyses with households' additional volatility as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables

Panel A: Fourth quarter 2010, 226 portfolios

Estimation period of $UV_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.001 (.001)	.001* (.001)	-.004 (.004)	-.001 (.005)	-.002 (.004)	-.001 (.002)	-.002 (.002)
$Gender$	-.003** (.002)	-.002 (.001)	-.013 (.009)	-.017* (.010)	-.017** (.008)	-.009** (.004)	-.010** (.005)
Age_h	.000 (.000)	.000 (.000)	.001* (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
$Income_h$	.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)
$TWealth_h$	.000 (.001)	.000 (.001)	-.005 (.004)	-.001 (.005)	.001 (.004)	.001 (.002)	.001 (.002)
$RiskAtt_h$	.006*** (.001)	.003*** (.001)	.019** (.008)	.042*** (.009)	.034*** (.007)	.018*** (.004)	.020*** (.004)
$ApprIncome_h$	.001 (.001)	.000 (.001)	-.004 (.007)	.000 (.007)	.001 (.006)	.002 (.003)	.001 (.004)
$FutSavings_h$	.001 (.001)	.000 (.001)	.009 (.006)	.013* (.007)	.011** (.005)	.005* (.003)	.006* (.003)
$\beta_{0i,h}$	-.011 (.010)	-.013 (.008)	.155 (.056)	.024 (.063)	.004 (.052)	-.002 (.028)	.000 (.030)
R^2	.110	.096	.062	.119	.128	.119	.131
R^2 adj.	.081	.066	.031	.090	.099	.089	.102
F-Test	3.753	3.200	1.997	4.104	4.422	4.069	4.541

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using Equation (2) with the unnecessary volatility of households' portfolios per estimation period as dependent variable. We subdivide our sample according to the point in time when they were interviewed. Panel A includes portfolios of households which were interviewed in the 4th quarter 2010; Panel B (C) includes portfolios of households which were interviewed in the 1st quarter 2011 (2nd quarter 2011). Estimation periods with a negative sign denote the unnecessary volatility that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the unnecessary volatility that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the unnecessary volatility of households' portfolios of the year before the survey took place on the model of Equation (2) yields a coefficient of the net value of the portfolio of .001 with no statistical significance and an adjusted R^2 of .081.

Table E.2: Regression analyses with households' additional volatility as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables (cont'd)

Panel B: First quarter 2011, 253 portfolios

Estimation period of $UV_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.000 (.000)	.001** (.001)	-.006 (.005)	.004 (.004)	-.001 (.003)	.000 (.002)	.000 (.002)
$Gender$	-.001 (.001)	.001 (.001)	-.004 (.009)	-.018** (.007)	-.013** (.005)	-.009** (.004)	-.008*** (.003)
Age_h	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
$Income_h$	-.000 (.000)	-.000 (.000)	.000 (000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)
$TWealth_h$	.000 (.000)	.000 (.001)	-.006 (.004)	.000 (.003)	-.002 (.002)	.000 (002)	-.001 (.001)
$RiskAtt_h$	.003*** (.001)	.002* (.001)	.031*** (.008)	.047*** (.006)	.029*** (.004)	.022*** (.003)	.018*** (.003)
$ApprIncome_h$	.000 (.001)	.000 (.001)	-.009 (.007)	-.008 (.006)	-.007* (.004)	-.004 (.003)	-.004* (.002)
$FutSavings_h$	-.002*** (.001)	-.002*** (.001)	.004 (.007)	.004 (.005)	.003 (.004)	.001 (003)	.001 (.002)
$\beta_{0i,h}$	.001 (.006)	-.001 (.007)	.208*** (.059)	-.005 (.047)	.072** (.033)	.026 (.023)	.036* (.019)
R^2	.092	.070	.058	.175	.142	.157	.157
R^2 adj.	.071	.048	.036	.156	.122	.137	.137
F-Test	4.340	3.205	2.626	9.085	7.090	7.940	7.937

Table E.2: Regression analyses with households' additional volatility as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables (cont'd)

Panel C: Second quarter 2011, 351 portfolios

Estimation period of $UV_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.004 (.002)	.001 (.001)	.001** (.001)	.012** (.005)	.006 (.004)	.003 (.002)	.003 (.002)
$Gender$	.005 (.005)	.002 (.001)	.001 (.001)	.009 (.010)	.009 (.009)	.005 (.004)	.005 (.005)
Age_h	.000** (.000)	.000 (.000)	.000 (.000)	-.001** (.000)	-.001** (.000)	.000* (.000)	.000*** (.000)
$Income_h$	.000 (.000)	-.000 (.000)	.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)
$TWealth_h$	.003 (.002)	.001 (.001)	.000 (.001)	.005 (.004)	.007* (.004)	.003 (.002)	.004* (.002)
$RiskAtt_h$	.014*** (.004)	.002 (.001)	.001 (.001)	.033*** (.009)	.027*** (.008)	.011*** (.004)	.015*** (.004)
$ApprIncome_h$	-.002 (.004)	-.002 (.001)	-.001 (.001)	-.006 (.008)	-.001 (.007)	-.003 (.003)	-.002 (.004)
$FutSavings_h$	-.003 (.004)	-.002 (.001)	.000 (.001)	-.009 (.008)	-.004 (.007)	-.004 (.003)	-.003 (.004)
$\beta_{0i,h}$	-.043 (.030)	.003 (.009)	-.005 (.008)	-.101 (.062)	-.095* (.053)	-.029 (.025)	-.044 (.031)
R^2	.105	.055	.057	.138	.113	.094	.103
R^2 adj.	.072	.020	.022	.106	.080	.060	.070
F-Test	3.153	1.576	1.614	4.315	3.435	2.781	3.098

Table E.3: Regression analyses with households' Sharpe-Ratio as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables

Panel A: Fourth quarter 2010, 226 portfolios

Estimation period of $SR_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.021 (.017)	-.222* (.114)	-.020 (.045)	-.003 (.020)	.011 (.019)	.001 (.010)	.021 (.017)
$Gender$	.052 (.035)	.146 (.236)	.059 (.094)	.046 (.041)	.043 (.039)	.052** (.022)	.052 (.035)
Age_h	.002 (.001)	.009 (.009)	.004 (.003)	.002 (.001)	.002 (.001)	.002** (.001)	.002 (.001)
$Income_h$	.000 (.000)	.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	.000 (.000)	.000 (.000)
$TWealth_h$	-.010 (.016)	-.041 (.111)	-.031 (.044)	-.014 (.019)	-.010 (.018)	-.012 (.010)	-.010 (016)
$RiskAtt_h$	-.110*** (.032)	.436** (.215)	-.403*** (.085)	-.167*** (.037)	-.148*** (.036)	-.045** (.020)	-.110*** (.032)
$ApprIncome_h$	.001 (.026)	-.174 (.178)	.058 (.071)	.013 (.031)	.001 (.030)	.001 (.016)	.001 (.026)
$FutSavings_h$	-.049** (.024)	.306* (.161)	-.135** (.064)	-.056** (.028)	-.053 (.027)	-.020 (.015)	-.049** (.024)
$\beta_{0i,h}$	.726*** (.225)	3.825** (1.525)	-.068 (.603)	.297 (.262)	.517** (.252)	.544*** (.140)	.726*** (.225)
R^2	.114	.059	.164	.160	.133	.099	.114
R^2 adj.	.085	.028	.136	.132	.104	.069	.085
F-Test	3.897	1.892	5.915	5.746	4.625	3.314	3.897

Notes: We provide regression coefficients, their respective standard errors (in parentheses), R^2, adjusted R^2, F-statistics for the regression analysis using Equation (3) with the Sharpe-Ratio of households' portfolios per estimation period as dependent variable. We subdivide our sample according to the point in time when they were interviewed. Panel A includes portfolios of households which were interviewed in the 4th quarter 2010; Panel B (C) includes portfolios of households which were interviewed in the 1st quarter 2011 (2nd quarter 2011). Estimation periods with a negative sign denote the Sharpe-Ratio that households could have expected with their portfolio if the returns in the period until the survey took place would stay stable. Estimation periods with a positive sign denote the Sharpe-Ratio that households achieved with their portfolio in the period after the survey took place. The symbols ***, **, and * denote statistical significance at the one, five, and ten percent level, respectively. Example: Regressing the Sharpe-Ratio of households' portfolios of the year before the survey took place on the model of Equation (3) yields a coefficient of the net value of the portfolio of .021 with no statistical significance and an adjusted R^2 of .085.

Table E.3: Regression analyses with households' Sharpe-Ratio as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables (cont'd)

Panel B: First quarter 2011, 253 portfolios

Estimation period of $SR_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	.006 (.010)	-.039 (.045)	-.087*** (.028)	-.040* (.024)	-.003 (.018)	.004 (.009)	.006 (.010)
$Gender$	.071*** (.019)	-.049 (.088)	.116** (.056)	.144*** (.047)	.127*** (.035)	.054*** (.018)	.071*** (.019)
Age_h	.001 (.001)	.000 (.003)	.004* (.002)	.003 (.002)	.002 (.001)	.001 (.001)	.001 (.001)
$Income_h$	.000 (.000)	.000 (.000)	.000** (.000)	.000* (.000)	.000 (.000)	.000* (.000)	.000 (.000)
$TWealth_h$	.001 (.009)	-.024 (.042)	-.038 (.026)	-.011 (.022)	.006 (.016)	-.003 (.009)	.001 (.009)
$RiskAtt_h$	-.090*** (.017)	.128* (.077)	-.253*** (.048)	-.244*** (.041)	-.156*** (.030)	-.088*** (.016)	-.090*** (.017)
$ApprIncome_h$	.033** (.015)	-.030 (.071)	.043 (.045)	.065* (.038)	.065** (.028)	.020 (.015)	.033** (.015)
$FutSavings_h$	-.013 (.014)	.137** (.065)	-.009 (.041)	-.044 (.034)	-.033 (.025)	-.015 (.013)	-.013 (.014)
$\beta_{0i,h}$	.541*** (.122)	1.009* (.562)	.393 (.354)	.312 (.299)	.304 (.220)	.525*** (.116)	.541*** (.122)
R^2	.149	.030	.164	.166	.146	.132	.149
R^2 adj.	.129	.008	.145	.146	.126	.112	.129
F-Test	7.475	1.332	8.408	8.500	7.307	6.514	7.475

Table E.3: Regression analyses with households' Sharpe-Ratio as dependent variable and the net value of households' speculation portfolio and households' characteristics as independent variables (cont'd)

Panel C: Second quarter 2011, 351 portfolios

Estimation period of $SR_{h,T}$	-1 yr	-0.5 yr	0.5 yr	1 yr	2 yrs	3 yrs	4 yrs
$ValueSP_h$	-.008 (.013)	.011 (.027)	.011 (.064)	-.039 (.033)	-.011 (.017)	-.010 (.014)	-.008 (.013)
$Gender$	-.019 (.028)	-.029 (.056)	-.055 (.134)	-.022 (.070)	-.026 (.036)	-.020 (.029)	-.019 (.028)
Age_h	.004*** (.001)	-.001 (.002)	-.006 (.005)	.003 (.002)	.004*** (.001)	.002* (.001)	.004*** (.001)
$Income_h$	.000 (.000)	.000 (.000)	-.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
$TWealth_h$	-.026** (.012)	.003 (.024)	.013 (.058)	-.031 (.030)	-.037** (.015)	-.015 (.012)	-.026** (.012)
$RiskAtt_h$	-.033 (.024)	.119** (.049)	.210* (.117)	-.015 (.061)	-.052* (.031)	.009 (.025)	-.033 (.024)
$ApprIncome_h$	-.004 (.021)	.008 (.042)	.004 (.101)	.002 (.052)	-.020 (.027)	.012 (.022)	-.004 (.021)
$FutSavings_h$	.012 (.021)	.028 (.042)	.057 (.100)	.046 (.052)	.004 (.027)	.029 (.022)	.012 (.021)
$\beta_{0i,h}$	.808*** (.169)	.198 (.337)	.336 (.811)	.245 (.421)	.809*** (.217)	.591*** (.174)	.808*** (.169)
R^2	.091	.046	.033	.028	.096	.035	.091
R^2 adj.	.058	.011	-.003	-.009	.063	-.001	.058
F-Test	2.701	1.300	.914	.763	2.863	.979	2.701