



# SKATING ON THIN ICE: NEW EVIDENCE ON FINANCIAL FRAGILITY

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# Introduction

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Financial fragility  
**Skating on thin ice**

A vulnerable middle class is also at risk in the Netherlands. Not by spending too much money. It is rising costs with falling incomes that kill many households.

Sacha Hilhorst and Casper Thomas  
July 26, 2017 - appeared in No. 30



A substantial fraction of Dutch households are facing financial difficulties:

- 38% have difficulties making ends meet and 20% has payment problems (Nibud, 2018)
  - Also, common among higher income households
- 15% are dealing with risky or problematic debts (Hoff et al., 2016)
- Lack of precautionary savings and low savings:
  - 20% have no financial reserves and household saving rates are declining (Nibud, 2015; OECD, 2018)

# Introduction

- These figures raise concerns about the financial well-being of Dutch households
- Key element in gauging household's financial well-being is their ability to deal with unexpected financial emergencies

*Financial fragility is the inability to cope with emergency expenses (such as a car or house repair, medical bill, or small legal expense) in a short timeframe*

*(Lusardi, Schneider & Tufano, 2011)*

Background:

- Lusardi et al. (2011) developed an indicator for financial fragility
- 2009 US TNS Global Economics Crisis Study (Lusardi et al., 2011)
  - *Compared evidence in the U.S. to 7 other industrialized countries.*
  - *The Netherlands:*
    - 27% financially fragile (2<sup>nd</sup> lowest)

# Research objectives

- Document the extent of **financial fragility among Dutch households** some years after the financial crisis.
- Fielded a special module on financial fragility in the CentERpanel in 2016
  - *Using the original measure by Lusardi et. (2011)*
  - *Examine the coping methods households intend to use when facing a financial emergency*
- **Contribution paper:** Dive deeper into the factors influencing financial fragility and the choice of coping methods:
  - Financial Literacy
  - Probability Numeracy

# Data & Measures

# Measure of Financial Fragility

How confident are you that you could come up with €2,000 if an unexpected need arose within the next month?

- I am certain I can come up with €2,000
- I could probably come up with €2,000
- I could probably **not** come up with €2,000
- I am certain I could **not** come up with €2,000
- Don't know
- Prefer not to say

**FINANCIALLY FRAGILE**

€2,000 approximates the amount needed to cover a major expense, such as a car or home repair or a legal expense.

# Coping methods measure

If you were to face a €2,000 equivalent unexpected expense in the next month, how would you come up with the funds you need?

- |  |  |
|--|--|
| (1) draw from cash or checking accounts  | (10) take out a personal loan or revolving credit  |
| (2) draw from savings account  | (without collateral)   |
| (3) borrow or ask for help from my family  | (11) use a short term payday loan  |
| (4) borrow or ask for help from my friends (not members of my family)                        | (12) ask for a payroll advance loan  |
| (5) liquidate or sell investments  | (13) work overtime, get a second job, or another member of my household would go to work             |
| (6) draw from annuity or single premium insurance, even if I have to pay a penalty or taxes  | (longer)   |
| (7) sell my home   | (14) pawn an asset I own at a pawnshop (e.g. the 'Stadsbank van lening' or pawnshop 'Used products') |
| (8) use my credit card   | (15) sell things I own (except my home), for example via marktplaats.nl.                             |
| (9) open or use a home equity line of credit or a second mortgage (with house as collateral) |  |

# Data

- Module on financial fragility fielded in July 2016 in the CentERpanel – 88.1% response rate
- Merged data with a financial literacy module that was fielded in September 2015 in the CentERpanel
- Data enriched with demographic information, plus questions on probability numeracy by Hudomiet, Hurd and Rohwedder (2017)
- Final Sample with matched observations: 1,716
- Multiple respondents in one household: clustered standard errors at the household level

# Results

Financial Fragility of Dutch Households

# Financial Fragility of Dutch Households

**Table 1: Confidence in ability to cope with an unexpected expense, by economic and demographic, financial literacy and probability numeracy**

		N	Fragile %
<i>All</i>		1,716	13.7
<i>Gender</i>	Women	782	17.8
<i>Age</i>	20-39	199	18.3
	40-54	471	14.9
	55-64	378	14.9
	65+	668	9.0
<i>Household type</i>	Single, no children	345	22.5
	Single, with children	41	39.6
	Couple, no children	809	7.4
	Couple, with children	490	11.2
	Other	835	9.0
<i>Education</i>	Elementary school or Pre-vocational Education	506	16.0
	Secondary Education	557	15.6
	Tertiary education	653	7.5
Checking accounts with a negative balance	0 accounts	1,402	9.4
	1 or more accounts	121	45.2
Labor market status	Employed	825	10.6
	Unemployed	320	26.5
	Retirees	571	7.7

# Financial Fragility of Dutch Households

**Table 1- continued**

		N	Fragile %
Accommodation	Renter	385	30.4
	Homeowner	1,331	6.7
Household Income	(0-2000]	44	24.8
	(2000-2750]	428	9.3
Monthly/net	(2750-360]	429	5.5
	(>3600)	415	4.4
<i>Financial literacy skills</i>			
Number of correct answers	0	64	31.6
	1	169	21.5
	2	540	16.4
	3	943	8.5
<i>Financial Literacy confidence</i>			
(#correct big 3 self-assessed - #correct big 3 observed) <sup>b</sup>	< -2	136	20.5
	-1	447	15.7
	0	963	11.0
	> 1	170	16.4
<i>Probability Numeracy</i>			
Number of correct answers	0	74	26.24
	1	209	16.4
	2	418	16.8
	3	509	10.9
	4	251	6.8

# Probit regressions explaining financial fragility

**Table 2. Highlighted results- Probit regressions explaining financial fragility**

Variables	Model 1	Model 2	Model 3
Average probability of coping		86.4%	
Female	-0.0112 (0.0129)	-0.00202 (0.0130)	-0.00174 (0.0140)
<i>Educational Level (Reference= Elementary or pre-vocational education)</i>			
Secondary education	0.00753 (0.0191)	0.00439 (0.0187)	-0.00913 (0.0196)
College or graduate education	0.0404** (0.0185)	0.0333* (0.0182)	0.0260 (0.0191)
Financial Literacy underconfidence		-0.0471*** (0.0156)	-0.0328** (0.0165)
Probability Numeracy			0.0524*** (0.0152)
N	1,716	1,716	1,461
Log likelihood	-426.95	-422.04	-351.07
Pseudo-R <sup>2</sup>	0.1760	0.1855	0.2037

# Results

Methods of Coping with Financial Emergency of Dutch Households

# Coping methods measure

If you were to face a €2,000 equivalent unexpected expense in the next month, how would you come up with the funds you need?

(1) draw from cash or checking accounts

(2) draw from savings account **1. Accounts**

(3) borrow or ask for help from my family

(4) borrow or ask for help from my friends (not members of my family) **2. Family or Friends**

(5) liquidate or sell investments

(6) draw from annuity or single premium insurance, even if I have to pay a penalty or taxes

(7) sell my home **3. Sell Non Liquid Assets**

(8) use my credit card **4. Credit Card**

(9) open or use a home equity line of credit or a second mortgage (with house as collateral)

**5. Loan with collateral**

(10) take out a personal loan or revolving credit (without collateral)

(11) use a short term payday loan

**6. Loan without collateral**

(12) ask for a payroll advance loan

(13) work overtime, get a second job, or another member of my household would go to work (longer)

**7. Work more**

(14) pawn an asset I own at a pawnshop (e.g. the 'Stadsbank van lening' or pawnshop 'Used products')

(15) sell things I own (except my home), for example via marktplaats.nl.

**8. Sell Possessions**

# Distribution of Coping Methods

**Table 3. Distribution of coping methods used by all respondents and by respondents relying on single or multiple coping methods**  
Percent using indicated method

Coping Methods	Share of indicated group <sup>a</sup>			
	Share of all respondents	Respondents choosing one method	Respondents choosing two methods	Respondents choosing three or more methods
<i>Categories</i>				
Accounts	89.2	88.6	90.8	89.0
Family or Friends	16.2	4.6	22.5	66.6
Sell Non-Liquid Assets	2.4	0.5	2.9	11.0
Use credit card	9.1	0.6	11.7	49.8
Loan with collateral	1.1	0.6	1.2	3.8
Loan without collateral	3.7	0.4	4.0	21.4
Work more	4.3	3.7	4.0	7.8
Sell Possessions	4.9	1.0	6.0	23.9
Memoranda				
<i>No. of observations</i>	1,675	1,143	347	185
Share of all respondents using indicated number of coping methods	100	68.2	20.7	11.0

a. All frequencies are population weighted.

# Probit Regressions explaining the choice of coping methods

**Table 4. Probit regressions explaining the choice of categories of coping methods with economic and demographic characteristics<sup>a</sup>**

Variables	<i>Dependent Variable: dummy= 1 when respondent selected indicated category</i>					
	Accounts	Family or Friends	Sell Non-Liquid Assets	Credit Card	Loan with collateral	Work more
Female	0.0205 (0.0145)	0.0178 (0.0180)	-0.0216*** (0.00792)	-0.0376** (0.0164)	-0.0115** (0.00564)	-0.00428 (0.00833)
<i>Age (Reference= Younger than 55)</i>						
55-64	-0.00748 (0.0208)	-0.0697** (0.0291)	-0.0204* (0.0121)	-0.0226 (0.0201)	-0.000846 (0.00818)	-0.00492 (0.0109)
Older than 65	-0.0114 (0.0285)	-0.102** (0.0414)	-0.00450 (0.0175)	0.0242 (0.0350)	0.00488 (0.0126)	0.000960 (0.0195)
<i>Additional Variables</i>						
Financial Literacy	-0.00614 (0.0107)	-0.00937 (0.0136)	0.0130 (0.00887)	0.0237* (0.0136)	-0.00280 (0.00369)	-0.00321 (0.00540)
Financial Literacy overconfidence	-0.0235 (0.0275)	-0.0155 (0.0299)	0.0156 (0.0213)	-0.000413 (0.0305)	0.00609 (0.0117)	0.0223 (0.0169)
Financial Literacy underconfidence	0.00107 (0.0167)	-0.00331 (0.0207)	-0.0319*** (0.00633)	0.00554 (0.0179)	-0.000681 (0.00518)	-0.0153* (0.00811)
Probability Numeracy	0.0222 (0.0166)	0.0166 (0.0196)	0.00260 (0.00885)	0.0161 (0.0163)	0.00670 (0.00605)	-0.0185** (0.00908)
N	1,426	1,426	1,426	1,426	1,426	1,426
Log likelihood	-372.6	-496.8	-145.6	-422.0	-90.1	-163.1
Pseudo-R <sup>2</sup>	0.074	0.075	0.186	0.046	0.067	0.088

# Conclusions & Recommendations

# Conclusions

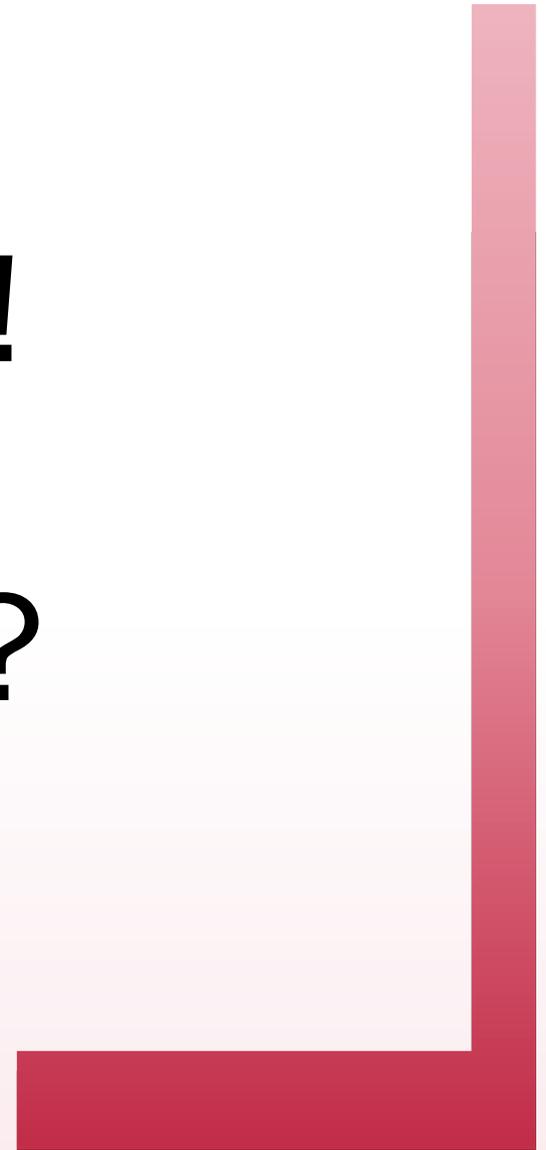
- The fraction of financially fragile households in the Netherlands has decreased since the financial crisis, financial fragility,
- Still, a worrisome level of financial fragility is observed among households and individuals with socioeconomic markers of vulnerability.
- Households rely on formal and informal coping methods. Sometimes a combination of coping methods is needed.
- Financial literacy, financial literacy confidence and probability numeracy are predictors of financial fragility and the choice of coping methods

# Recommendations

- Focus on strengthening the financial security of households, especially vulnerable groups
- Provide financial education programs which are aimed at improving households' ability to manage their resources
  - Implement programs in Dutch schools and the workplace
  - Attention to short- term savings

**THANK YOU!**

**QUESTIONS?**



# Measure of financial literacy

The “Big Three” financial literacy questions (correct answers are in bold):

- **1. Interest question:** *Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?*

More than \$102 / Exactly \$102 / Less than \$102 / Do not know / Refuse to answer % of correct answers: **91.4**

- **2. Inflation question:** *Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?*

More than today / Exactly the same / **Less than today** / Do not know / Refuse to answer % of correct answers: **85.1**

- **3. Risk question:** *Please tell me whether this statement is true or false. “Buying a single company’s stock usually provides a safer return than a stock mutual fund.”*

True / **False** / Do not know / Refuse to answer % of correct answers: **61.2**

- **Expected number of correct answers question:**

*The previous three questions were about savings account and stock investment returns. How many questions do you think you have answered correctly?*

None / One / Two / All three / Do not know / Refuse to answer

# Measure of probability numeracy

Now we would like to ask you some questions about the chances of some events. Please answer the questions on a scale from 0 to 100, where 0 means 'there is absolutely no chance the event will happen' and 100 means 'the event is absolutely sure to happen'.

*1. Consider that you take one ball from a bowl that holds 10 balls without looking. The bowl has 10 white balls and no red balls. What is the percent chance that the ball you take is red?*

*Please answer the questions on a scale from 0 to 100, where 0 means 'there is absolutely no chance of a red ball' and 100 means 'absolutely sure to take a red ball'. Answer: 0- % of correct answers: 84.5*

*2. Now suppose you take one ball from a bowl that holds 10 balls without looking. The bowl has 7 white balls and 3 red balls. What is the percent chance that the ball you take is white? Please answer the questions on a scale from 0 to 100, where 0 means 'there is absolutely no chance of a white ball' and 100 means 'absolutely sure to take a white ball'. Answer: 70- % of correct answers: 54.5*

# Measure of probability numeracy

3. Assume that the weather report accurately reports the chance of rain. Suppose the weather report tells you that the chance it will rain tomorrow is 70%. What is the chance it will NOT rain tomorrow?

Please answer the questions on a scale from 0 to 100, where 0 means 'there is absolutely no chance it will not rain tomorrow' and 100 means 'absolutely sure it will not rain tomorrow'. **Answer: 30- % of correct answers: 80.3**

4. Suppose that whether it rains in your town and whether it rains in Paris are unrelated. The chance that it will rain in your town tomorrow is 50%. The chance that it will rain in Paris is also 50%. What is the chance that it will rain both in your town and in Paris tomorrow?

Please answer the questions on a scale from 0 to 100, where 0 means 'there is absolutely no chance it will rain in both cities tomorrow' and 100 means 'absolutely sure it will rain in both cities tomorrow'. **Answer: 25- % of correct answers: 25.5**