Gender, confidence and financial literacy

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First ..

Disclaimer

Views expressed are personal opinions and do not necessarily coincide with the views of DNB or the ESCB

Motivation

Substantial gender gap in financial literacy

Gender gap persists across different:

- countries
- subgroups
- knowledge domains

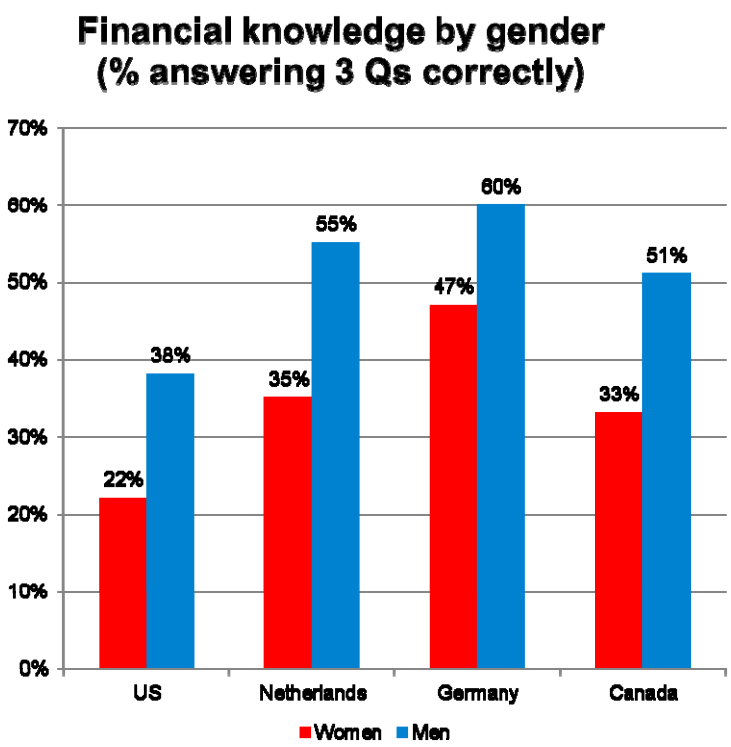
Women more often answer “I do not know”

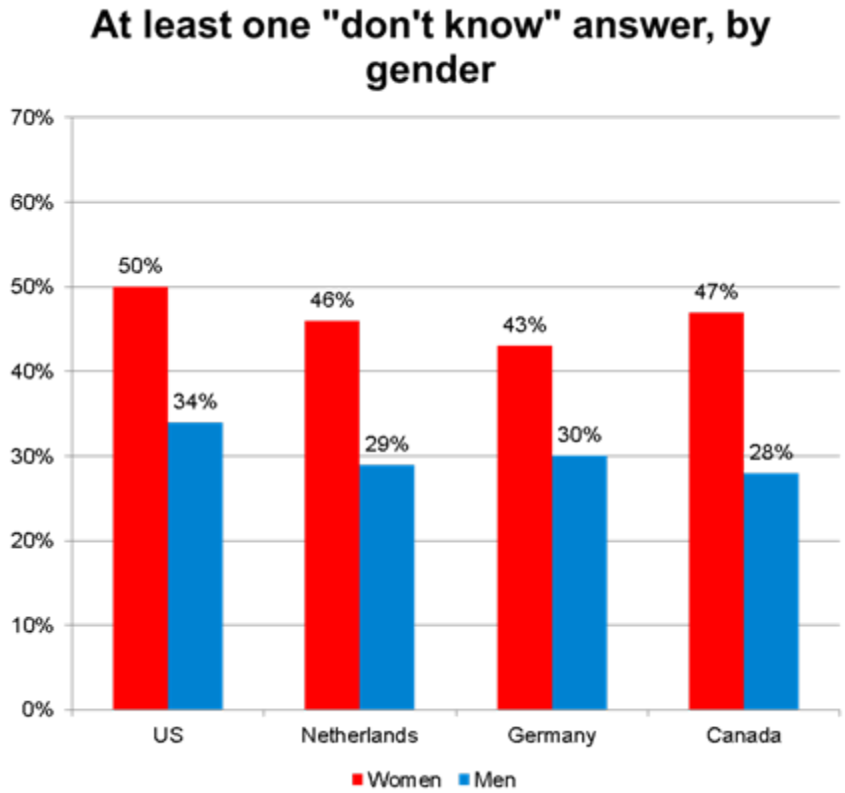
Research questions

What lies behind the gender gap in financial literacy?

Is it lack of knowledge or lack of confidence?

Robust gender gap and women more likely to say “don’t know”





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Survey experiment: design

3 classic financial literacy questions asked twice

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

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

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

Survey experiment: design

3 classic financial literacy questions asked twice

First wave (May 2012): including “do not know” option

Second wave (July 2012): without “do not know” option
with a follow-up question on confidence after each question

Wave 1

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

Wave 2

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

Follow-up (Confidence)

How confident are you in this answer?

Response scale from 1 (not confident at all) to 7 (completely confident)

Survey experiment: sample

Online survey representative of Dutch-speaking households (CentERpanel)

Household heads and partners; aged 18 and older

Survey experiment: sample

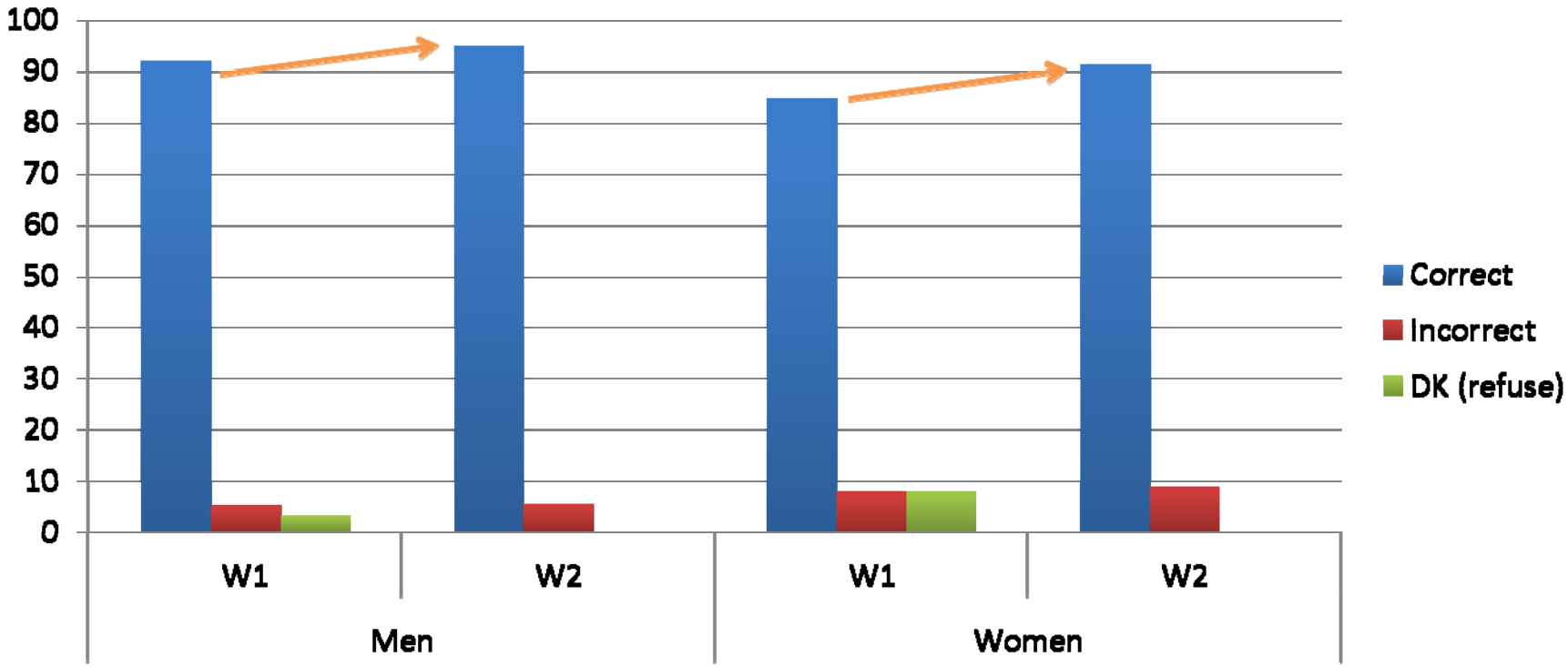
Sample sizes: Wave 1: N= 1,748
Wave 2: N= 1,973 (incl. refresher)

Complete questionnaire in both weeks: N=1,532 (balanced sample)

Attrition?
→ No significant effects of gender or financial literacy on dropping out after wave 1

Learning?
→ Financial literacy responses do not differ significantly between respondents who participate in wave 2 only (N=445) and respondents who participants in both waves.

Interest question: responses wave 1 and 2



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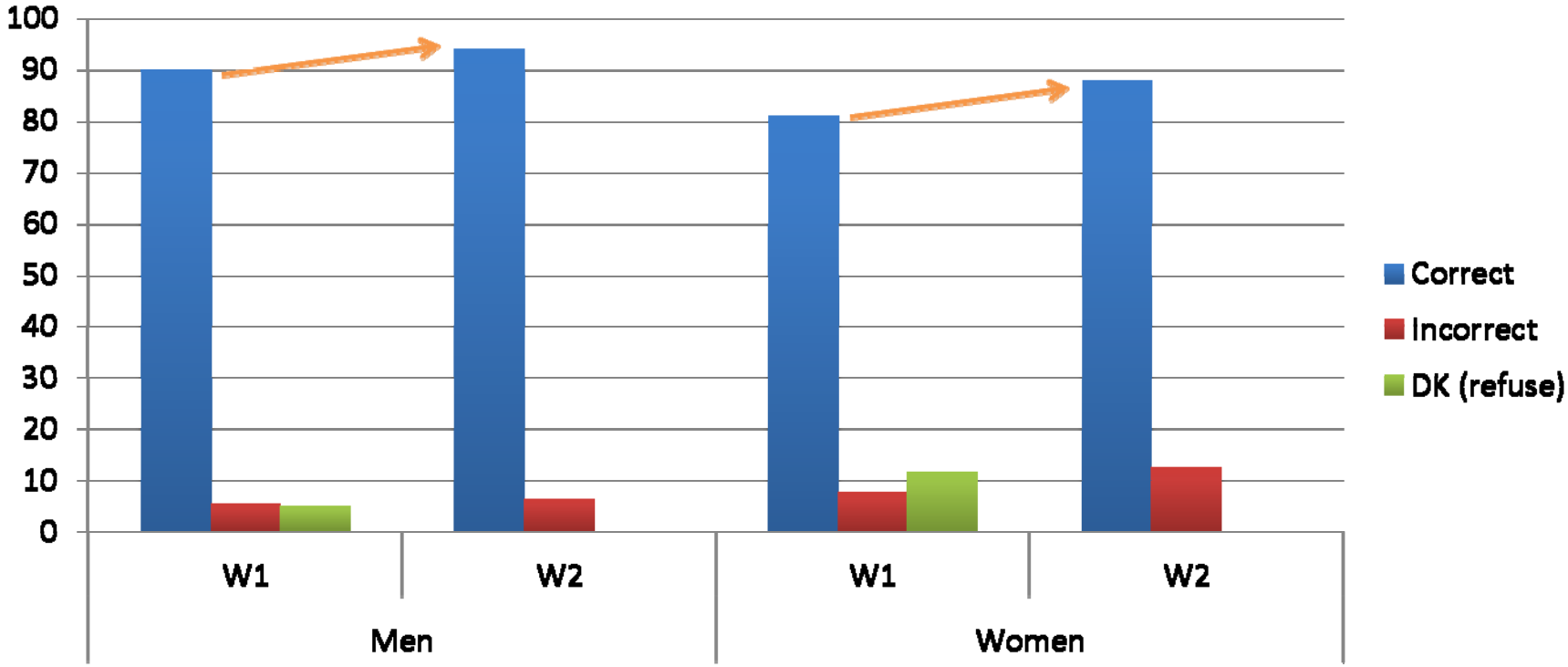
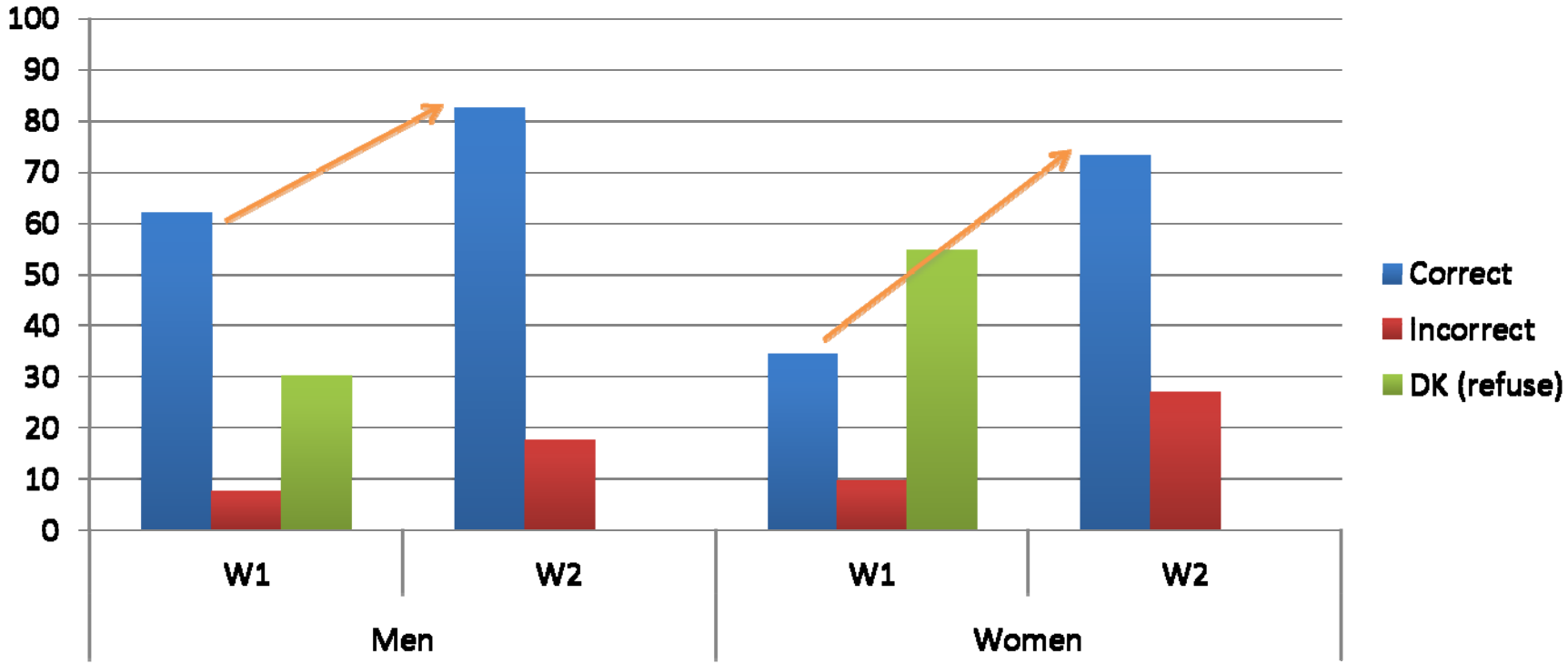
Inflation question: responses wave 1 and 2

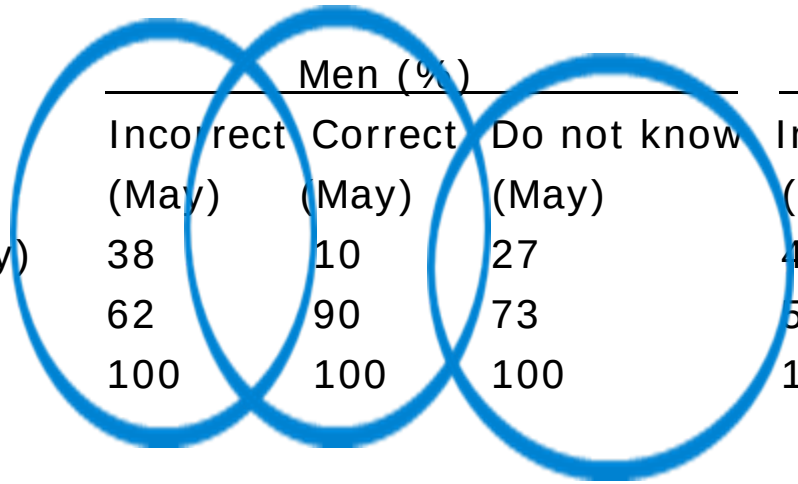


Risk question: responses wave 1 and 2



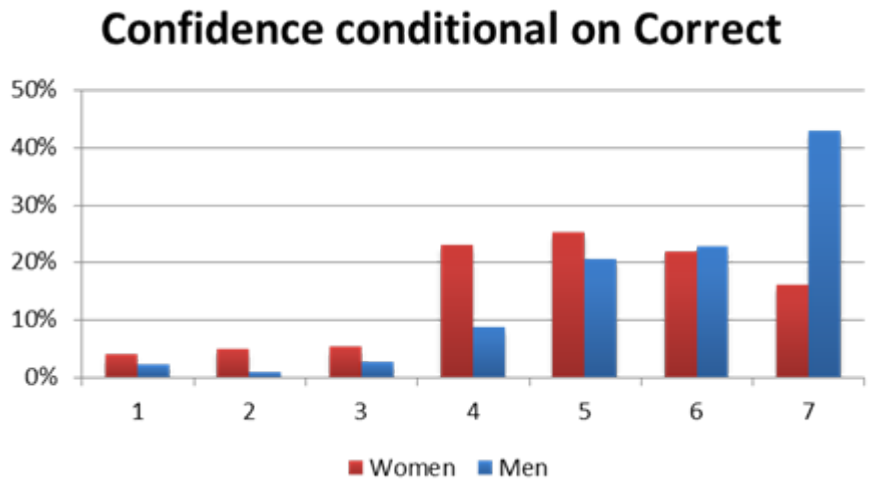
Consistent and inconsistent responses across waves

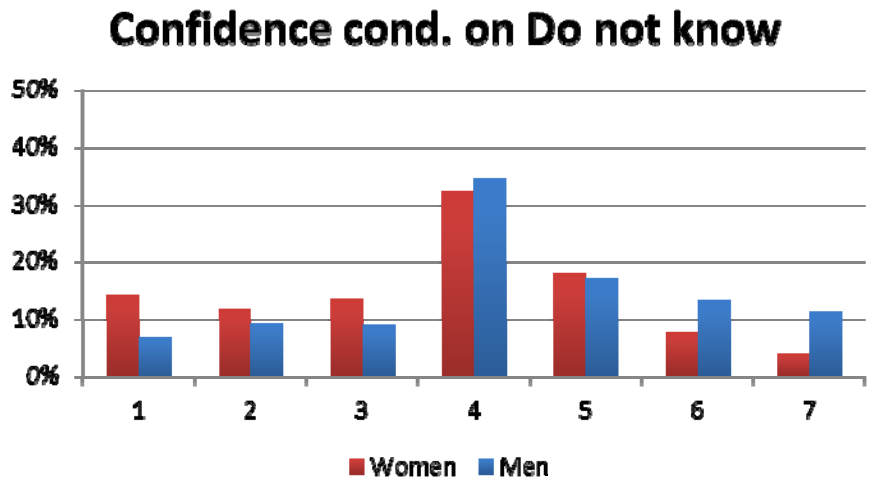
Risk Question: responses July conditional on responses May



	Men (%)			Women (%)		
	Incorrect (May)	Correct (May)	Do not know (May)	Incorrect (May)	Correct (May)	Do not know (May)
Incorrect (July)	38	10	27	48	13	32
Correct (July)	62	90	73	52	87	68
Total	100	100	100	100	100	100

Confidence wave 2 conditional on responses wave 1 (Risk question)





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Stylized facts

“Do not know” in May → likely to be correct in July

Also more correct answers in July due to gambling

“Do not know” in May is correlated with confidence July

Women are less confident than men (even if they answer correctly)

Different measures, different properties

May-measure of financial literacy

- Underestimates knowledge due to DK-choices
- DK-choices may be relevant for economic decisions

July-measure of financial literacy

- Overestimates knowledge
- ‘Noise’ due to guessing
- Confidence may be relevant for economic decisions

Model true knowledge

Combining May and July information, we propose a model for ‘true’ knowledge

Respondent has true knowledge if the following conditions are jointly met:

1) Wave 1: Correct OR ‘Do not Know’
2) Wave 2: Correct & Confidence >=3

Respondent is not knowledgeable if one of the following conditions applies:

1) Incorrect in Wave 1
2) Incorrect in Wave 2
3) Confidence < 3

Alternative literacy measures

Percentage correct per question	May	July	May-July ('true' knowledge)
Interest	89	93	86
Inflation	86	91	83
Risk	50	78	66

Number correct	May	July	May-July ('true' knowledge)
None	5	1	4
One	11	5	11
Two	38	26	31
Three (all)	46	68	54

Gender gap in financial literacy

OLS regressions literacy measures (number correct) on female dummy (all significant)

	May	July	May-July
Female dummy only	-0.44***	-0.19***	-0.32***
With controls for age, income, education, marital status	-0.36***	-0.15***	-0.25***

Does it matter for stock market participation?

OLS regressions for stock market participation on financial literacy measures (i.e. sum of correct answers standardized: mean zero and variance one)

	Female only	May	July	May-July
Other controls	no	yes	yes	yes
Financial literacy		0.090***	0.055***	0.067***
Female	-0.136***	-0.046***	-0.072***	-0.065***

Does it matter for stock market participation?

IV regressions for stock market participation on financial literacy measures
Instrument: economics in high school

	May	July	May-July
Controls	yes	yes	yes
Financial literacy	0.192***	0.222***	0.196***
Female	-0.031	-0.003	-0.026
First stage F-statistic	14.2	9.2	11.8

Follow-up

Try to disentangle impact of confidence and knowledge

Important from a policy perspective for the design of financial education programs

Methodological implications

Gender gap in financial literacy decreases when deleting the DK option, but it does not disappear

Deleting the DK option introduces measurement error due to guessing

We employed the strategy to ask same questions twice (with and without DK), and exploited cross-question consistency and confidence

This may practically be infeasible or costly

An alternative measure using questions without DK and ask for confidence gives similar results (reported in paper)

Conclusion

Gender gap is both: gap in knowledge and gap in confidence

Thank you!