Financial Literacy and Vulnerability
Empirical Evidence from the IACOFI Survey

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June 8-9, 2023

Research Question

SUBJECT

The subject is the analysis of the association between the financial dimensions of inclusion and vulnerability, in particular the relation between financial knowledge (the main component of financial literacy) and financial vulnerability, to understand whether financial literacy protects households from vulnerability and thus prevents the risk of exclusion.
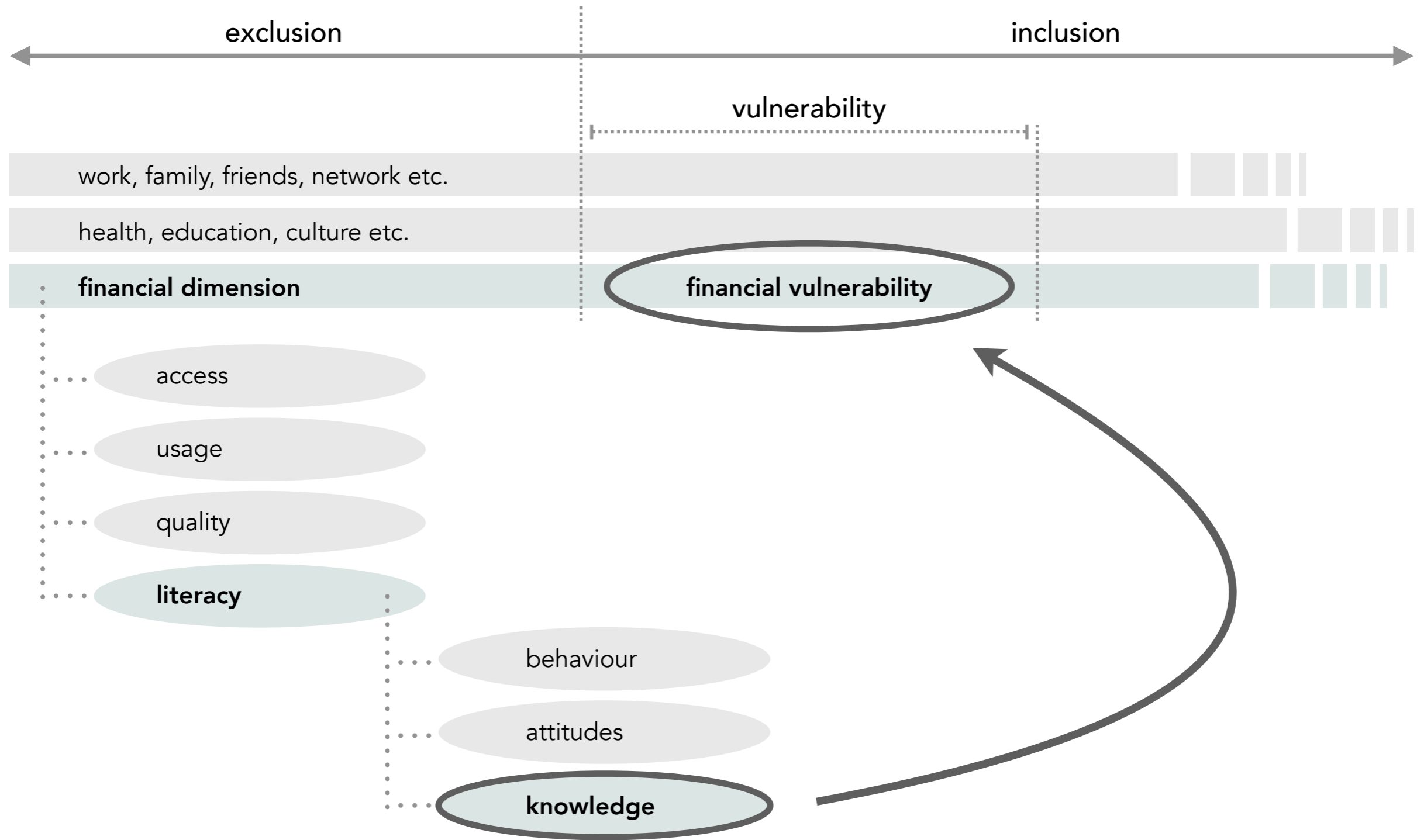
AIM

The aim is to contribute to research in this field with empirical evidence and recommendations for policy makers to define the best measures to counter vulnerability, identifying the most appropriate protection tools and the most effective resources to prevent individuals and families from falling into exclusion.

RESEARCH QUESTIONS

▸ Does financial knowledge have an effect on financial vulnerability?

▸ As financial knowledge increases, does it reduce the probability of a household becoming financially vulnerable?

▸ Can financial knowledge help a family to lift itself out of an existing state of vulnerability?

! The terms 'relation' and 'effect' are used in the broadest sense of parameters for estimating a robust association between the variables under analysis, as the existence of a causal relation cannot be investigated in any other way.

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Analytical Path

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FINANCIAL LITERACY

«A combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being» (OECD, 2011, p. 3)

▸ **Measurement**

   Financial Literacy (FL) = Financial Knowledge (FK) + Financial Behaviour (FB) + Financial Attitudes (FA)

Index	N. questions	Points
FK	7	0-7
FB	8	0-9
FA	3	1-5
FL	**18**	**1-21**

FINANCIAL KNOWLEDGE (FK index)

▸ **FK1**: Purchasing power

▸ **FK2**: Cost of a loan

▸ **FK3**: Simple interest

▸ **FK4**: Simple and compound interest

▸ **FK5**: Return risk

▸ **FK6**: Inflation

▸ **FK7**: Risk diversification

OECD, 2020

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Definitions and Measurement   (2/2)

FINANCIAL VULNERABILITY

«A condition, both actual and perceived, of financial instability caused by a combination of factors: unexpected adverse shocks; low levels of income or wealth; wrong debt choices; lack of preventive and protective measures; lack of risk management skills and tools» (Anderloni and Vandone 2011, p. 4)

▶ **Measurement**

Financial margin liquid assets indicator (FMLAI)

3 elements **>** negative financial margin **|** liquid assets **|** time (months)

▶ **Michelangeli and Rampazzi (2016) | Ampudia et al. (2016)**

FINANCIAL RESILIENCE

4 months

(Italy)

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Sample

Survey on the Financial Literacy and Competence of Italians (IACOFI) – Bank of Italy

▸ OECD International Network on Financial Education (OECD/INFE)

> Internationally comparable dataset on financial literacy

> 26 country (12 OECD)

▸ 2 wave (2017 and 2020)*

▸ Wave 1: Knowledge (FK index) + Behaviour (not complete)

▸ Wave 2: complete FL index (FK + FB + FA)

▸ Observations:

> wave 1: 2,376

> wave 2: 2,036

▸ NO panel

▸ Unified and harmonised (N=4,412)

▸ Some relevant variables only available at Wave 2 were not included (e.g. cohabitation status; household type; home ownership; community size; income bracket)

* Wave 2 (2020) was completed before the pandemic spread of Covid-19.

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Financial Vulnerability Variable
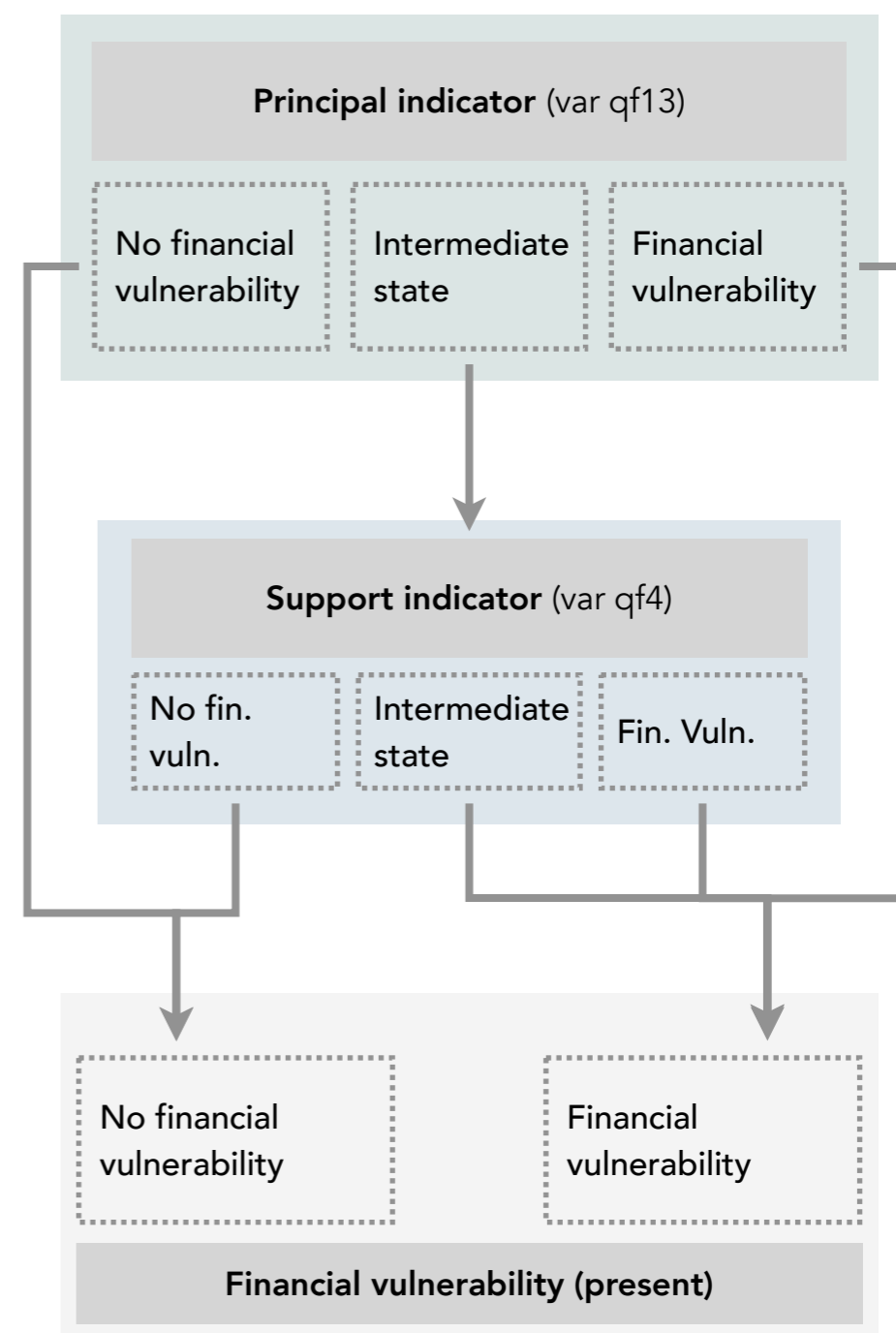
Principal indicator

Question (var qf13): If your family lost its main source of income, how long could you continue to cover living expenses, without borrowing any money?

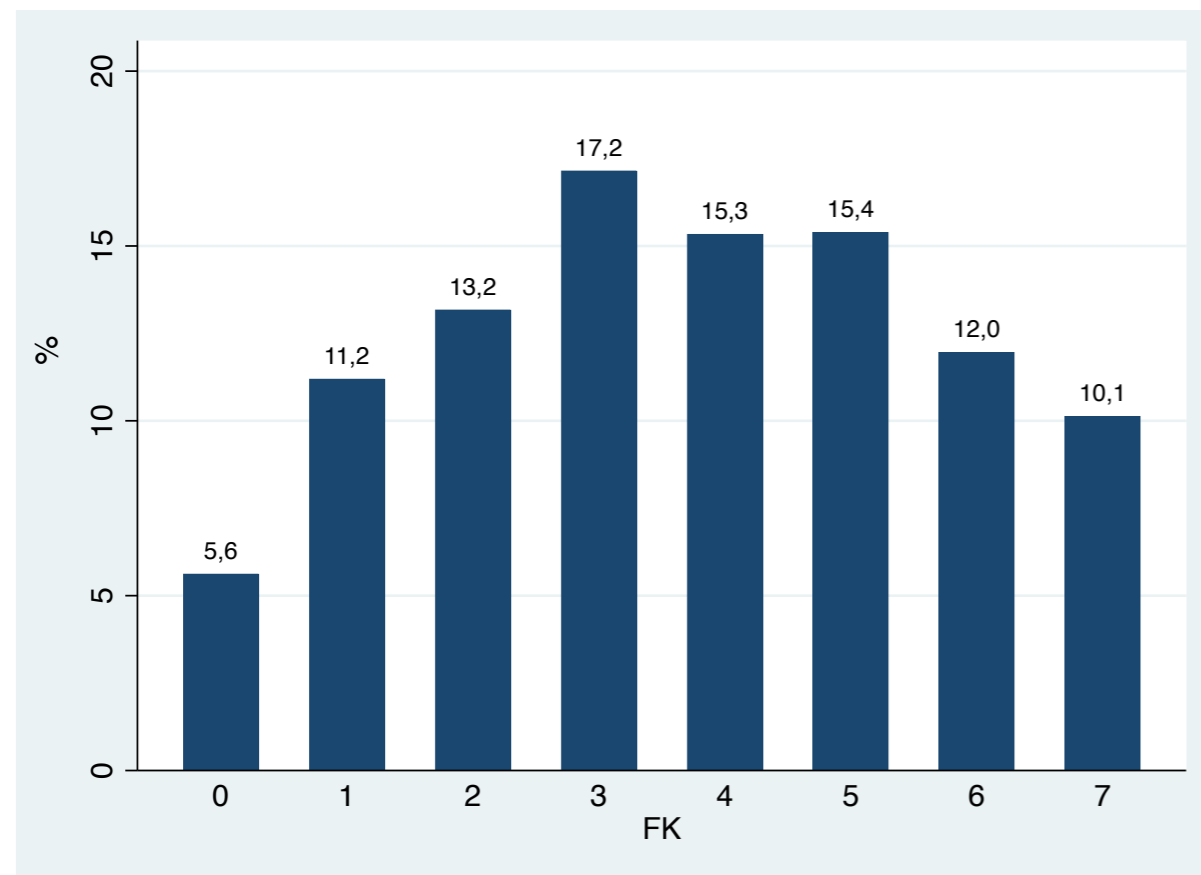| Original levels	Aggregate levels	Financial vuln.
- Less than a week - At least a week, but not one month - At least one month, but not three months - At least three months, but not six months - Six months or more - Don't know - Refused	- Less than three months - Refused	**Fin. Vuln.**
	- At least three months, but not six months - Don't know	**Intermediate state**
	- Six months or more	**No fin. vuln.**

Support indicator

Question (var qf4): If you, personally, faced a major expense today – equivalent to your own monthly income – would you be able to pay it without borrowing the money or asking family or friends to help?
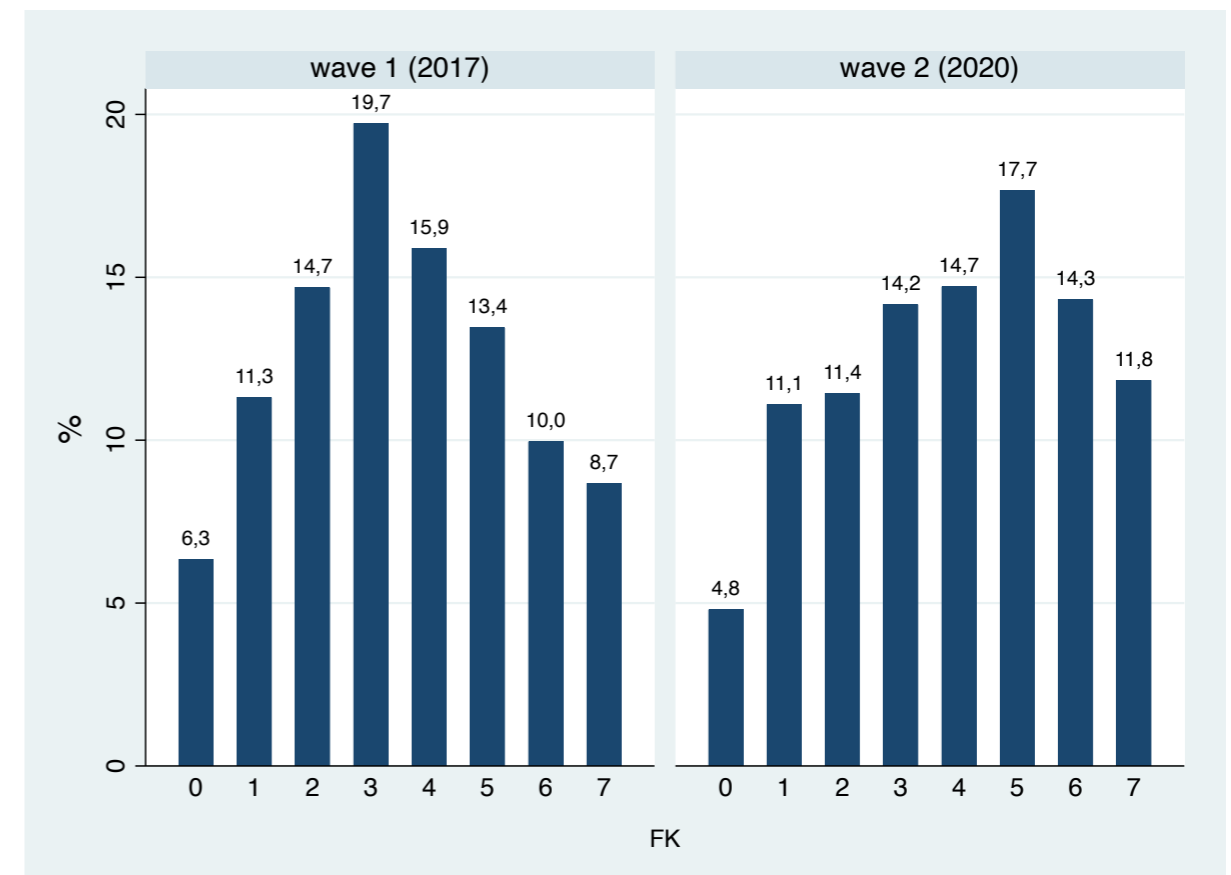
Original levels	Aggregate levels	Financial vuln.
- Yes - No - Don't know - I don't have any personal income - Refused	- Yes	**No fin. vuln.**
	- Don't know - I don't have any personal income	**Intermediate state**
	- No - Refused	**Fin. Vuln.**

Principal indicator (var qf13)

| No financial vulnerability | Intermediate state | Financial vulnerability |

Support indicator (var qf4)

| No fin. vuln. | Intermediate state | Fin. Vuln. |

| No financial vulnerability | Financial vulnerability |

Financial vulnerability (present)

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Financial Knowledge Distribution (FK Index)

▶ wave 1 + wave 2: FK mean **3.70**

▶ wave 1: FK mean **3.51**

▶ wave 2: FK mean **3.92**

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FK by Sociodemographic Variables

Variables		FK index (points 0-7)			Variables		FK index (points 0-7)		
		Obs. (mean)	St. Dev.	Pred. (mean)			Obs. (mean)	St. Dev.	Pred. (mean)
Year	2017+2020	3.70	2.02	–	N. household members	1	3.42	2.04	3.58
	2017	3.51	1.97	3.53		2	3.66	2.02	3.66
	2020	3.92	2.04	3.90		3	3.80	1.98	3.75
Gender	Female	3.58	2.01	3.62		4	3.78	2.04	3.71
	Male	3.83	2.02	3.79		5/more	3.90	1.93	3.97
Age	18-34	3.66	2.01	3.52	Household eco-fin responsible	Only resp.	3.49	2.00	3.54
	35-49	3.84	2.00	3.68		Resp. + others	3.91	1.99	3.89
	50-64	3.87	1.98	3.84		Only others	3.58	2.02	3.54
	65-over	3.44	2.04	3.75		N.k./N.r.	2.59	1.99	2.66
Education	Primary/No	3.07	1.95	3.15	Residence	North-West	3.93	2.09	3.90
	Middle	3.34	1.91	3.36		North-East	3.48	1.87	3.45
	Secondary	3.95	1.98	3.92		Centre	3.84	2.04	3.85
	University	4.21	2.09	4.17		South	3.53	1.97	3.51
Employment	Self-employed	4.12	2.01	3.87		Islands	3.65	2.04	3.76
	Employed	3.88	1.99	3.70					
	Unemployed	3.37	1.90	3.52					
	Retired	3.51	2.01	3.72					
	Student	3.91	2.06	4.06					
	Other	3.28	2.01	3.42					

Gender gap

Financial socialisation processes

Financial socialisation; nature, scope and responsibilities on the job

Sharing difficulties and skills

More complex economic and technological frameworks (industry, technology, finance) > financial socialisation

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Financial Vulnerability by Sociodemographic Variables

Variables		N.	fin. vuln. (present) Obs. (%)	fin. vuln. (present) Pred. (%)	Variables		N.	fin. vuln. (present) Obs. (%)	fin. vuln. (present) Pred. (%)
Year	2017+2020	4412	56.6	–	**N. household members**	1	683	58.4	55.4
	2017	2376	57.0	56.1		2	1325	52.1	57.0
	2020	2036	56.1	57.2		3	1090	55.3	54.3
Gender	Female	2292	58.0	57.3		4	1028	60.9	59.2
	Male	2120	55.1	55.9		5/more	285	62.8	57.1
Age	18-34	981	70.3	67.1	**Household eco-fin responsible**	Only resp.	1208	60.7	64.5
	35-49	1189	54.8	57.9		Resp. + others	2252	48.3	49.8
	50-64	1071	54.0	55.3		Only others	851	69.1	60.4
	65-over	1171	49.4	48.3		N.k./N.r.	100	87.2	86.4
Education	Primary/No	479	57.2	64.0	**Residence**	North-West	1178	47.3	49.2
	Middle	1462	62.8	63.1		North-East	850	56.5	58.2
	Secondary	1605	54.7	53.7		Centre	883	53.6	54.3
	University	865	49.2	46.7		South	1001	63.6	61.4
Employment	Self-employed	476	49.1	52.4		Islands	500	70.0	66.6
	Employed	1598	52.7	53.9					
	Unemployed	367	82.2	76.5					
	Retired	1154	48.6	52.8					
	Student	320	70.4	59.1					
	Other	497	67.2	64.5					

- Job insecurity
- Low income
- Low financial skills
- Expenditure needs **>** debts

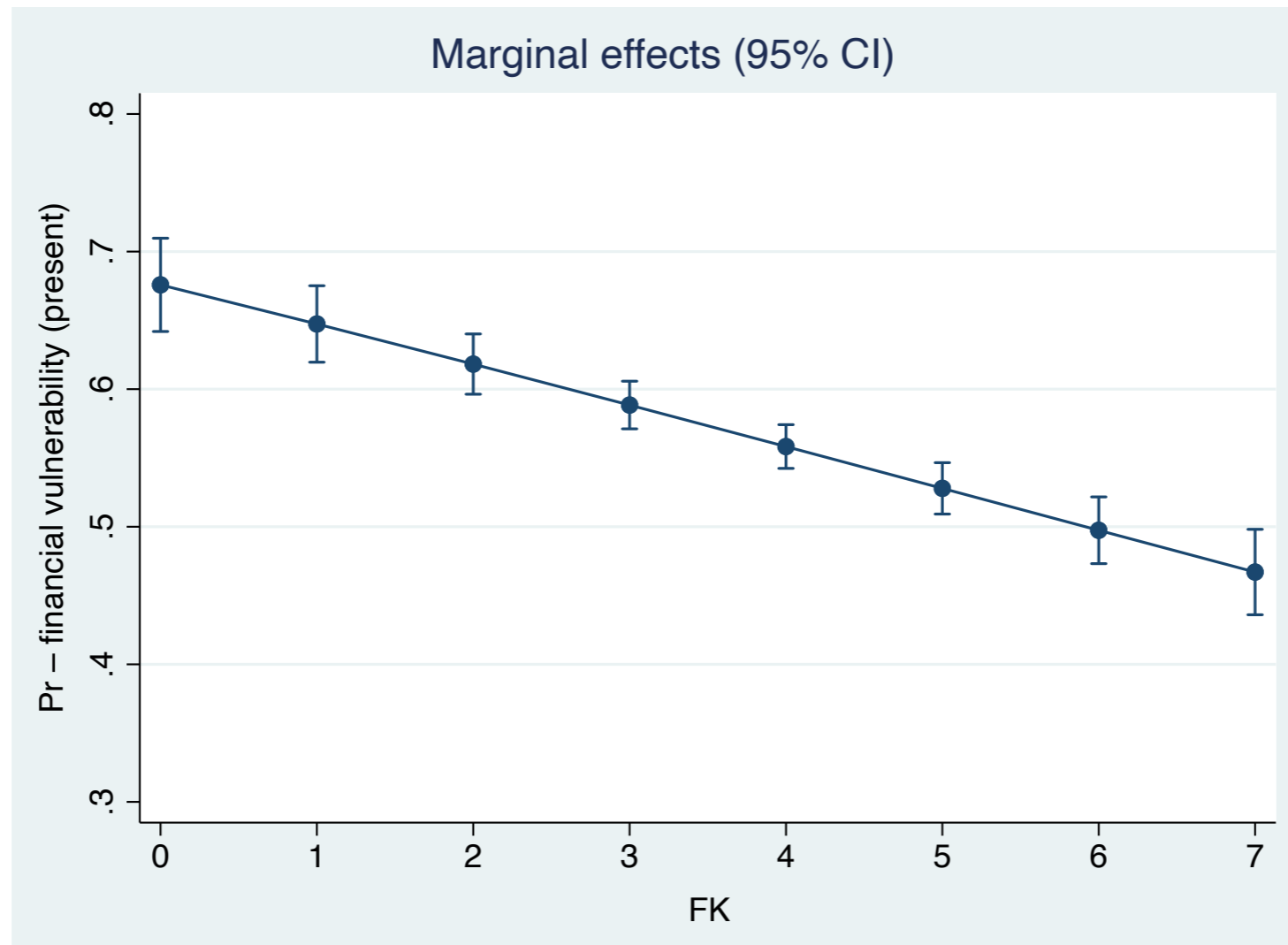Sharing and co-operation

- Economic development, wealth **>** income/assets
- Complex economic fabric (tech. + fin.) **>** financial socialisation **>** fin. skills

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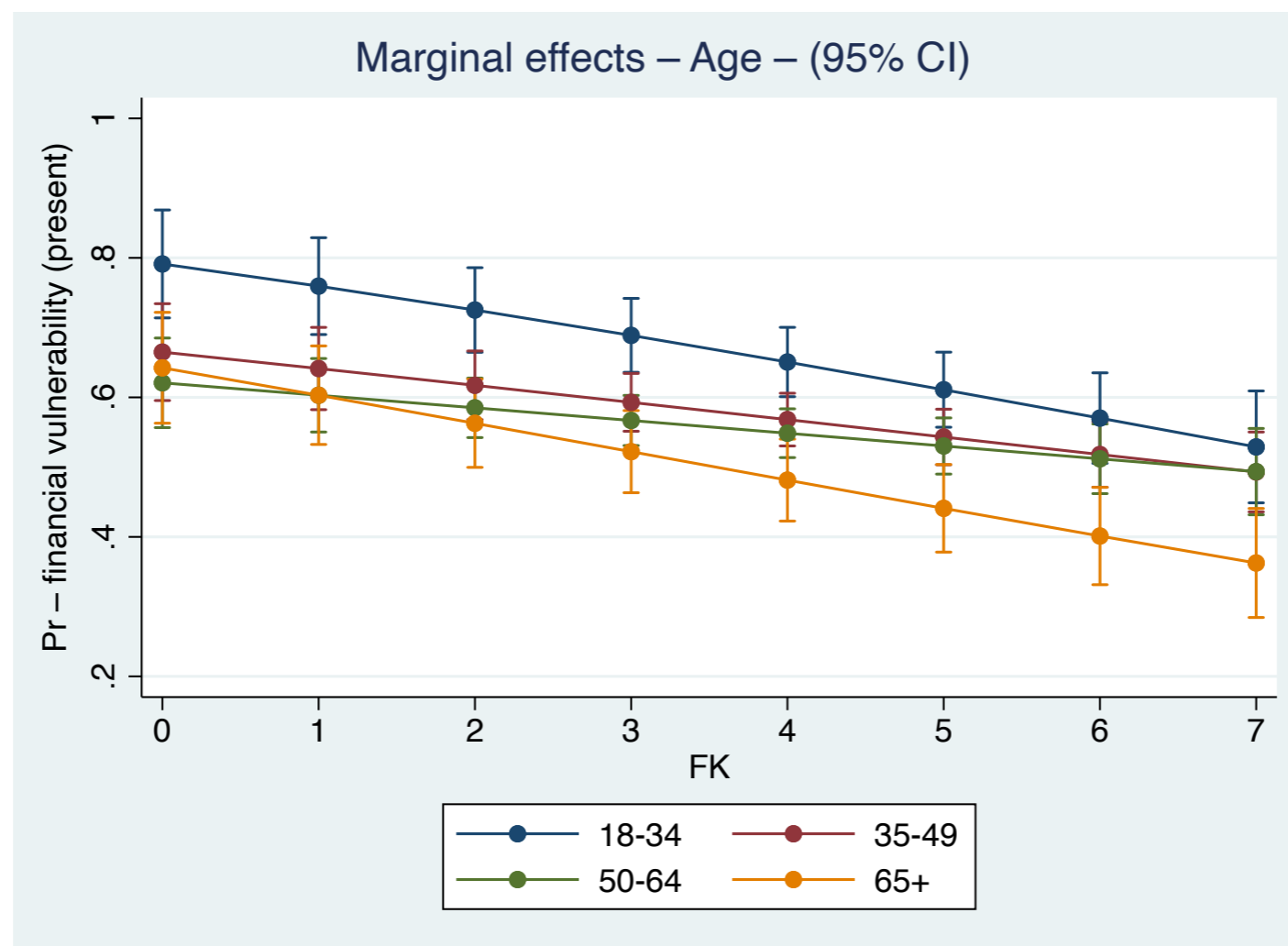Research Centre for Economic and Monetary Policy
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Multivariate Logistic Model

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FK and Probability of Financial Vulnerability

FK=0: Pr **67.6%**

FK=7: Pr **46.7%**

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FK and Probability of FV by Age

Marginal effects – Age – (95% CI)

Pr – financial vulnerability (present) vs FK

Legend: 18-34, 35-49, 50-64, 65+

- Pr FV highest of all groups (any case)
- Expenditure needs > income **>** debt
- Knowledge effect
- Precarity without welfare response **>** calibrated to elderly (less fin. vulnerable)

FV little affected by knowledge

- Pr FV lower than all groups (any case)
- Knowledge effect

▸ **Youths** (18-34): FK=0-7 Pr 79.1% **>** 52.9% (**–26.2**)

▸ **Young adults** (35-49): FK=0-7 Pr 66.5% **>** 49.3% (**–17.2**)

▸ **Adults** (50-64): FK=0-7 Pr 62.1% **>** 49.4% (**–12.7**)

▸ **Elders** (65+): FK=0-7 Pr 64.2% **>** 36.3% (**–27.9**)

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FK and Probability of FV by Employment

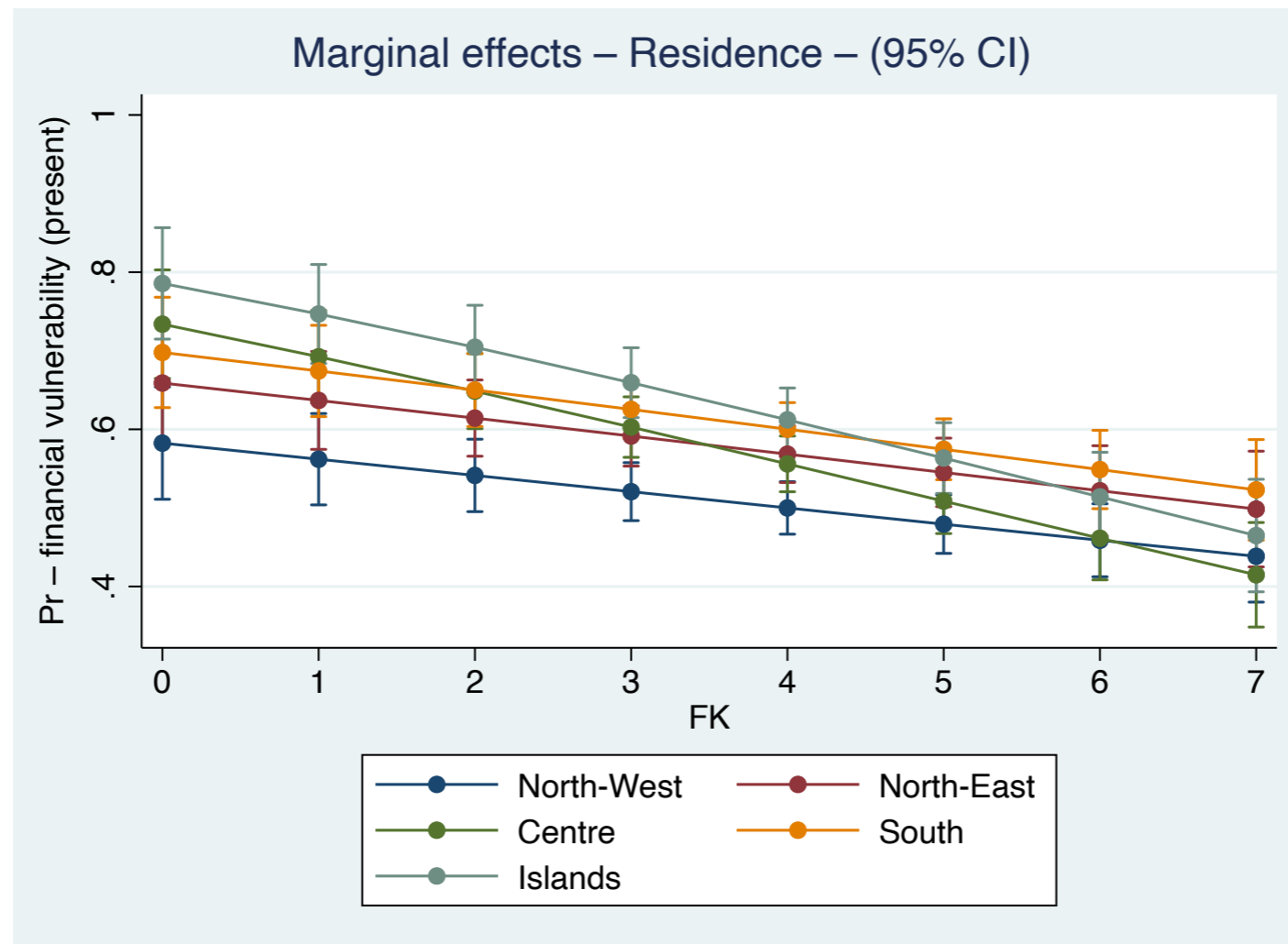Marginal effects – Employment – (95% CI)
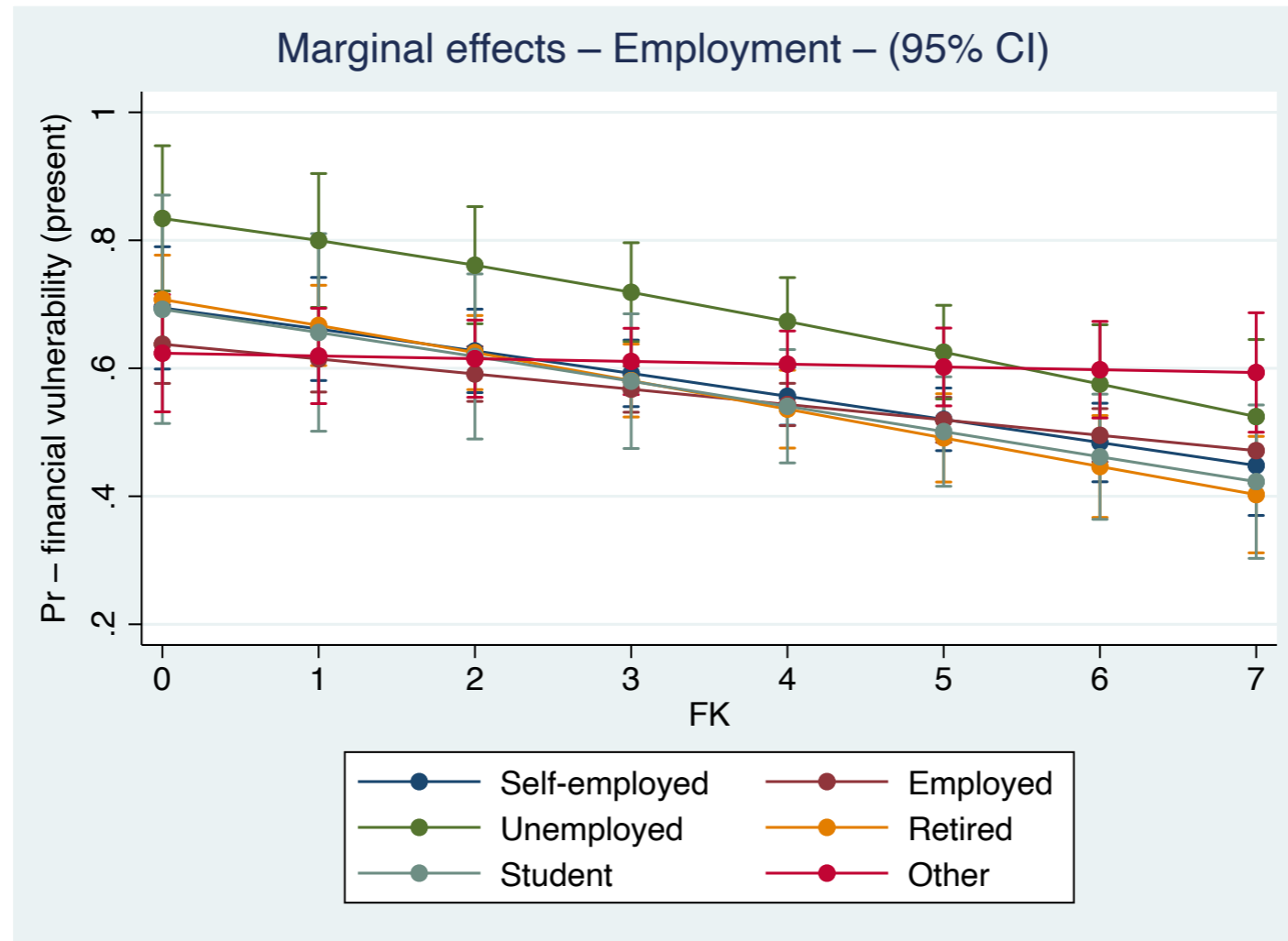
- Most FV group (any case)
  > income/assets

- The higher the FK, the shorter the distance from the other groups

▶ **Unemployed**: Pr from **10** to **15** points > **not-unemployed**
(self-employed, employed, student, retired) for each FK

▶ **Other**: Pr does not depend on FK

Uneven group and non-main income

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FK and Probability of FV by Residence Area

Marginal effects – Residence – (95% CI)

Plot — x-axis: FK (0 to 7); y-axis: Pr – financial vulnerability (present) (.4 to 1). Legend: North-West, North-East, Centre, South, Islands.
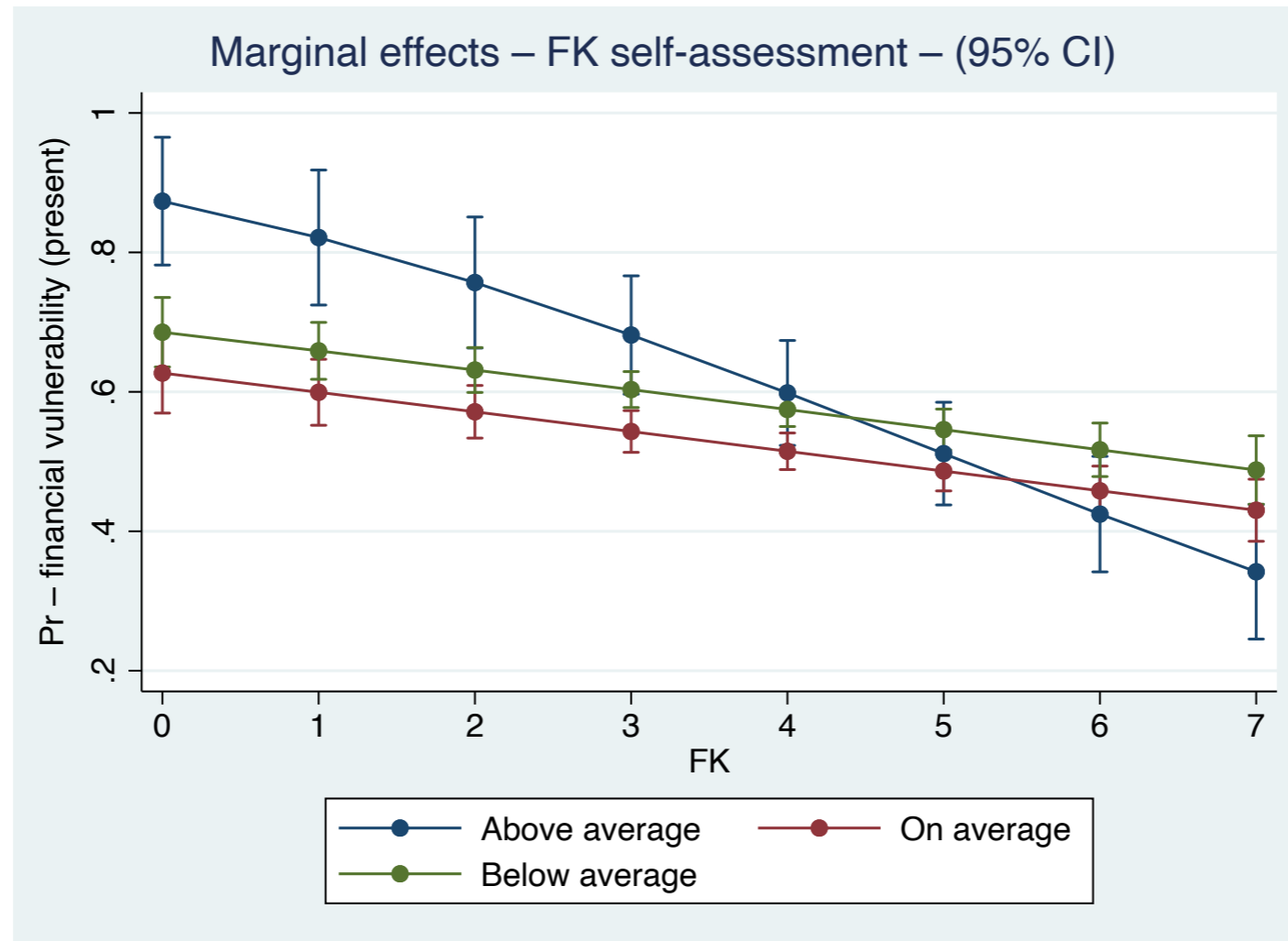
- High knowledge effect
- At high FK, Pr FV is reduced to the level of the most economically developed area
- FK can compensate for differences in economic environment

Low Pr FV also for low FK **>** developed economic environment (higher income/assets) can compensate for low FK
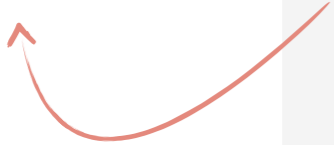
▸ **North-West**: FK=0-7 Pr 58.2% **>** 43.8% (**–14.4**)

▸ **North-East**: FK=0-7 Pr 65.9% **>** 49.9% (**–16**)

▸ **Centre**: FK=0-7 Pr 73.4% **>** 41.5% (**–31.9**)

▸ **South**: FK=0-7 Pr 69.8% **>** 52.3% (**–17.5**)

▸ **Islands**: FK=0-7 Pr 78.6% **>** 46.5% (**–32.1**)

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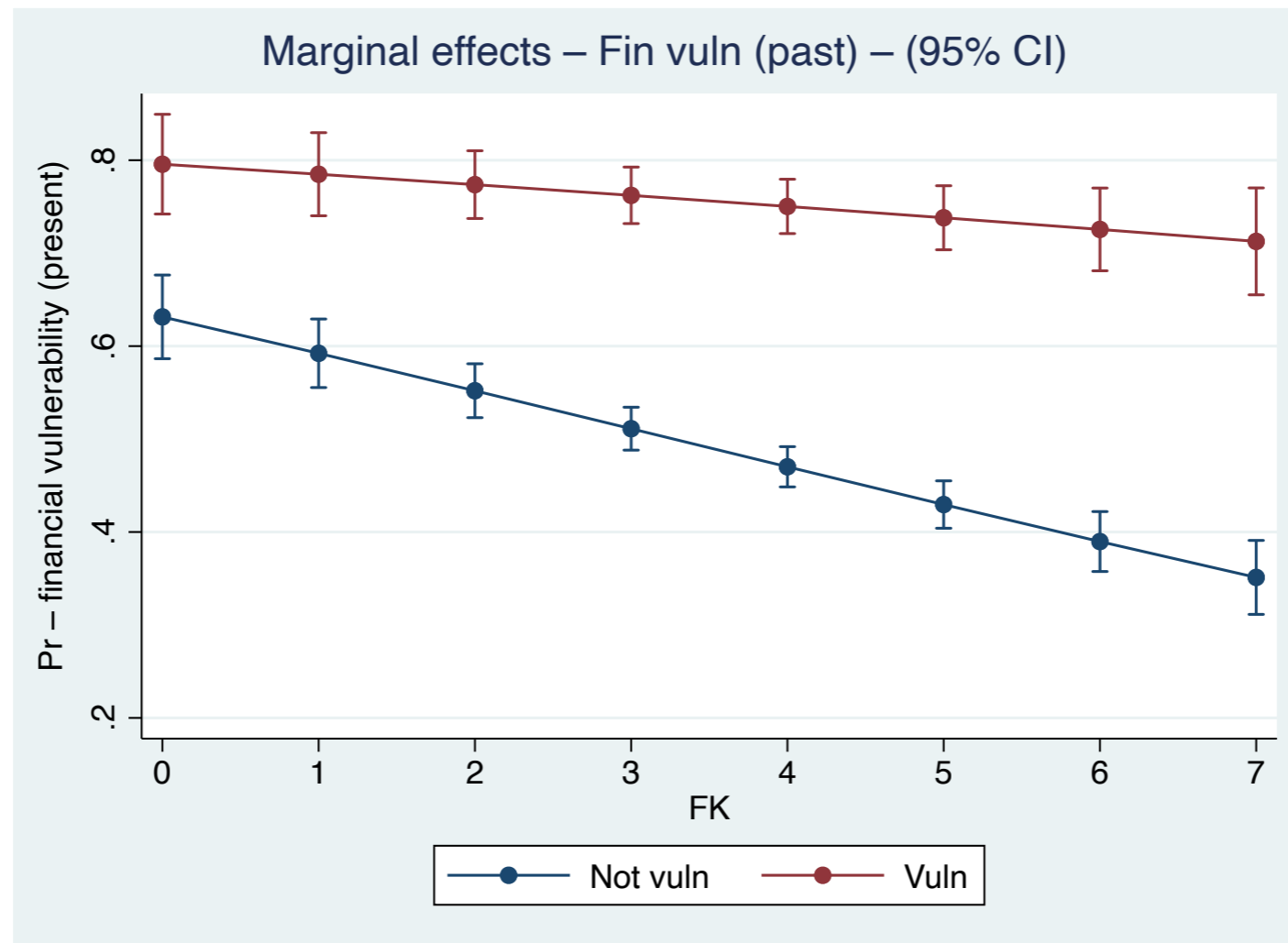# FK and Probability of FV by FK Self-assessment

- High Pr FV for self-assessment > FK

- Overconfidence phenomenon **>** excessive self-confidence, reduced confidence in others

- Vicious circle (wrong assessments, wrong decisions) **>** concatenation

- Need to increase awareness:
  - in misalignment
  - in the tendency to overestimate one's own abilities

Marginal effects – FK self-assessment – (95% CI)

▸ **Above average**: FK=0-7 Pr 87.4% **>** 34.2% (**–53.2**)

▸ **On average**: FK=0-7 Pr 62.7% **>** 43.0% (**–19.7**)

▸ **Below average**: FK=0-7 Pr 68.6% **>** 48.8% (**–19.8**)

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Marginal effects – Fin vuln (past) – (95% CI)

- High knowledge effect
- FK plays a preventive role

▶ **Not financial vulnerable (past)**: FK=0-7 Pr 63.1% **>** 35.1% (**–28**)

▶ **Financial vulnerable (past)**: FK=0-7 Pr 79.6% **>** 71.3% (**–8.3**)

- Very high Pr FV (present) + almost nil effect of knowledge **>** good predictor
- FV self-determining **>** chronicization
- Knowledge cannot free one from FV but can only prevent it
- Alternative support or countermeasures needed (inclusive-finance products/services?)

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FK and Probability of FV by Savings Type

Marginal effects – Savings type – (95% CI)
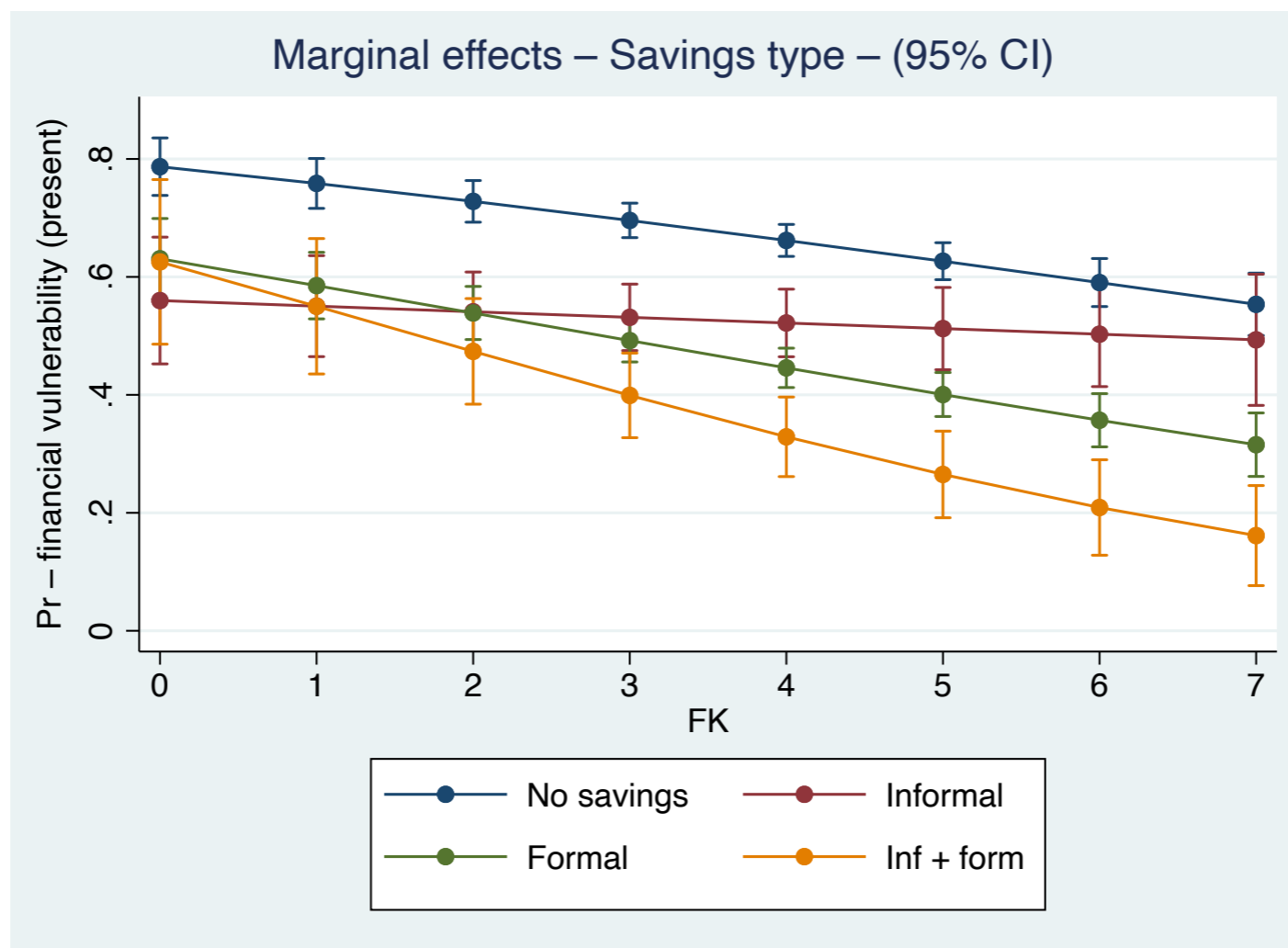
- Highest Pr FV (any case)
- Determining factor of FV
- Knowledge plays a protective role

- Near-zero knowledge effect
- Likely problem of access to or quality of fin. services

- High reduction in Pr FV
- Higher FK allows more appropriate use of financial instruments
- Savings alone do not protect against financial vulnerability > financial ability is needed

▶ **No savings**: FK=0-7 Pr 78.7% **>** 55.4% (**–23.3**)

▶ **Informal savings**: FK=0-7 Pr 56.0% **>** 49.3% (**–6.7**)

▶ **Formal savings**: FK=0-7 Pr 63.1% **>** 31.6% (**–31.5**)

▶ **Inf. + form. savings**: FK=0-7 Pr 62.5% **>** 16.1% (**–46.4**)

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Conclusions

▶ **56.6%** of households in the IACOFI sample is financially vulnerable

▶ Increasing **FK** reduces the probability of financial vulnerability, with varying intensities and some exceptions

▶ **Young people** and the **unemployed** are more likely to be vulnerable **>** different financial education programmes targeted at different life stages; alternative measures of inclusive finance

▶ **Education** and a **complex economic environment** reduce the probability of vulnerability **>** importance of financial socialisation **>** financial education programmes in school curricula from an early age

▶ **Savings** (i.e. **behaviour** and **attitudes** combined with income/assets) are a relevant factor, but not sufficient **>** knowledge to use instruments appropriately **>** financial capability

▶ **Overconfidence >** inclusion of modules in financial education programmes to raise **awareness**: discrepancy between reality and subjective perception; tendency to overestimate one's own abilities

▶ **Chronicization** of financial vulnerability **>** financial knowledge cannot free one from a persistent vulnerability, but can play a **preventive** role **>** other actions and counter-measures are needed (inclusive finance instruments? welfare?)

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Thank you

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