



The Impact of Long-Run Macroeconomic Experiences on Personality

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How do past macroeconomic events affect personality?

- A. Personality traits Big Five, locus-of-control, self-esteem
- B. Methodology Malmendier and Nagel's past experiences of (aggregate) unemployment
- C. Data two independent, longitudinal surveys representative for the Dutch population
- D. Results cross-section and panel data; gender differences
- E. Conclusions

A. Personality traits

- Realm of **noncognitive** factors (Almlund, Duckworth, Heckman and Kautz, 201)
- Big Five: Openness, Conscientiousness, Extroversion, Agreeableness and Neuroticism (OCEAN)
- Matters for several **economic** outcomes:
 - Education (Conti and Hansman, 2013)
 - Saving (Nyhus and Webley, 2001; Schaefer, 2016)
 - Unemployment duration (Viinikainen and Kokko, 2012; Derya Uysal and Pohlmeier, 2011)
 - Female wages (Osborne Groves, 2005)
 - Life satisfaction (Boyce and Wood, 2011)

A. Personality traits (2)

- Typically measured in surveys with self-reports
- **Openness** scale from “not at all” to “very much”
 - “Have difficulty understanding abstract ideas”
 - “I have a vivid imagination”
- **Conscientiousness**
 - “I am always prepared”
 - “I make a mess of things”
- **Extroversion**
 - “I don’t talk a lot”
 - “I don’t like to draw attention to myself”⁴

A. Personality traits (3)

- Agreeableness
 - “I insult people”
 - “I sympathize with other’s feelings”
- Neuroticism (emotional stability)
 - “I am easily disturbed”
 - “I change my mood a lot”
- 50-60 questions (SOEP has a very short one)
- Construction of traits with simple averaging or factor analysis

A. Personality traits (4)

- Locus of control: extent to which you believe you have control over your outcomes
- Education (Coleman and DeLeire, 2003)
- Wages (Schnitzlein and Stephani, 2016)
- Savings (Cobb-Clark, Kassenbohmer, Sinning, 2016)
- Risky assets (Salamanca, Fouarge, Montizaan, 2013)

“My life is determined by my own actions”

“It is mainly a matter of fate whether I become rich or poor”

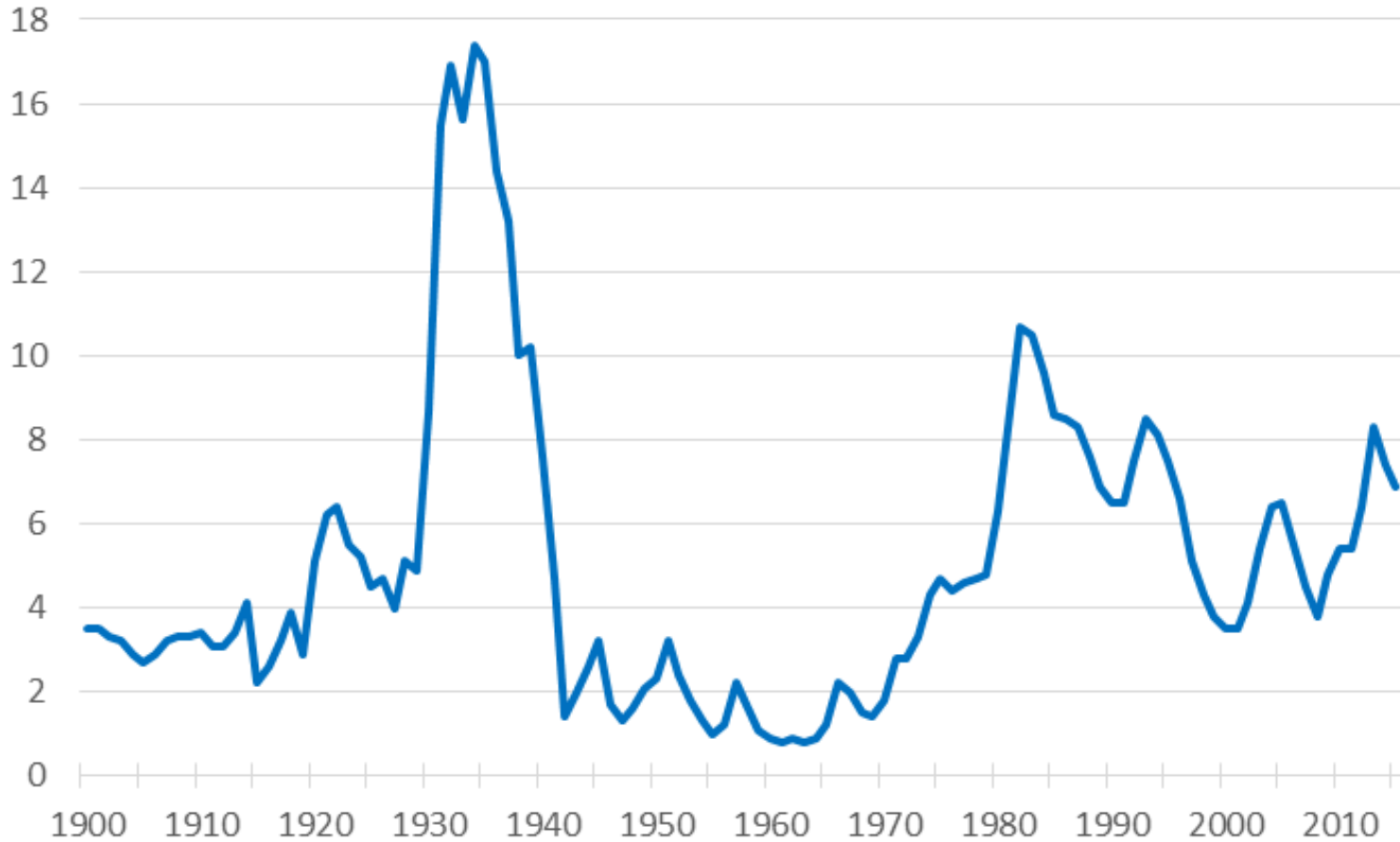
A. Personality traits (5)

- Personality traits are developed in adolescence and remain stable after age 30
- Certain traits (e.g. agreeableness) have a lifecycle profile
- Some evidence that negative life events affect personality (Buccioli and Zarri, 2016 versus Cobb-Clark and Schurer, 2012)
- Evidence that father's unemployment is positively correlated with (a change in) conscientiousness and negatively with neuroticism (Angelini, Bertoni and Corazzini, 2016).

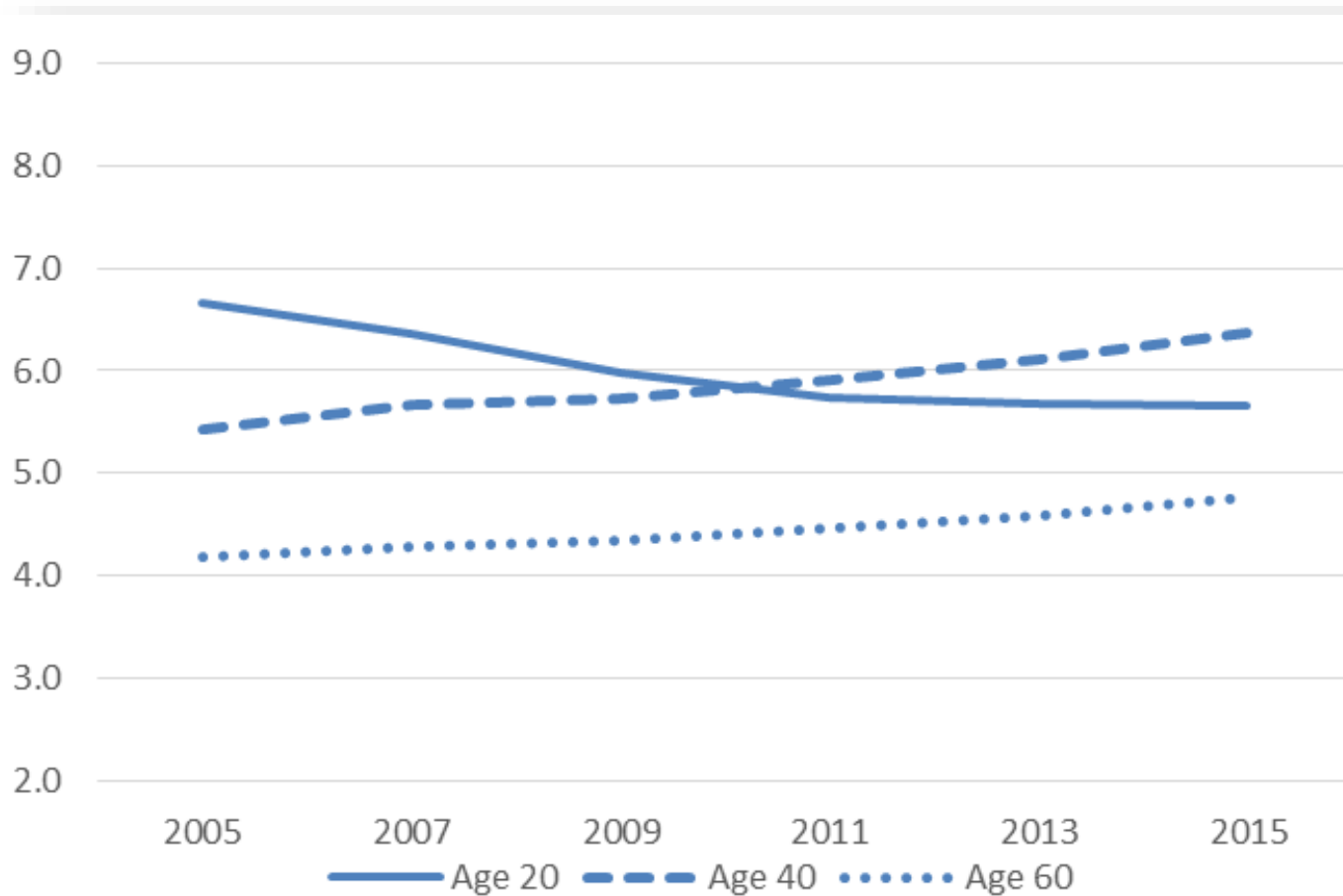
B. Methodology

- This paper: does past aggregate unemployment affect current personality traits?
- Aggregate unemployment is a proxy for a bad economic environment
- Malmendier and Nagel (2011): past stock market crashes affect current risk aversion and stock holding
- Giuliano and Spilimbergo (2014): growing up in a recession affects your preferences for redistribution
- Malmendier and Nagel (2016): experienced inflation affects current outlook on inflation

B. Methodology (2)



B. Methodology (3)



Calculate a simple average of experienced aggregate unemployment since birth by cohort

B. Methodology (4)

1. Is past experienced aggregate unemployment correlated with personality traits in the crosssection?

$$\text{trait}_i = \alpha + \beta f(\text{Experienced Unemployment})_i + \delta_1 \text{Age}_i + \delta_2 \text{Age}_i^2 + \delta_3 \text{Female}_i + \delta_4 \text{controls}_i + \varepsilon_i$$

2. Are changes in experienced aggregate unemployment correlated with changes in personality traits in a panel?

$$\text{trait}_{it} = \alpha_i + \beta f(\text{Experienced Unemployment})_{it} + \delta_1 \text{Age}_{it} + \delta_2 \text{Age}_{it}^2 + \delta_4 \text{controls}_{it} + \lambda_t + \varepsilon_{it}$$

C. Data

Data: two (independent) longitudinal surveys for the Netherlands: DHS and LISS

Aimed to be representative for the Dutch population

Administer the Big Five in several years => panel

DHS also locus of control and (self-assessed) financial risk

Other controls: age, gender, partner, education, labor market status, children present

C. Data (2)

	2009		2014		All waves	
	DHS	LISS	DHS	LISS	DHS	LISS
Extraversion	3.07	3.26	3.01	3.23	3.07	3.26
Agreeableness	3.91	3.89	3.88	3.89	3.89	3.87
Conscientiousness	3.66	3.74	3.69	3.77	3.63	3.71
Emotional stability	3.60	3.44	3.60	3.52	3.54	3.44
Openness	3.43	3.48	3.40	3.46	3.41	3.48

Balanced panel in 2009 and 2014

DHS: 2005, 2009, 2013-2014-2015

LISS: 2008–2009, 2011, 2013-2014

C. Data (3)

	2009		2014		All waves	
	DHS	LISS	DHS	LISS	DHS	LISS
Age	55.0	48.4	60.0	53.9	52.6	48.4
Female	0.45	0.53	0.45	0.53	0.47	0.54
Partner	0.77	0.79	0.74	0.74	0.77	0.75
City	0.41	0.39	0.40	0.38	0.40	0.40
Education middle	0.28	0.33	0.27	0.34	0.31	0.34
Education high	0.40	0.30	0.41	0.34	0.39	0.30
Working	0.47	0.51	0.38	0.47	0.46	0.48
Self-employed	0.04	0.05	0.05	0.05	0.05	0.05
Unemployed	0.02	0.02	0.04	0.04	0.03	0.03
Retired	0.27	0.10	0.36	0.09	0.25	0.09
Children present	0.31	0.45	0.28	0.38	0.37	0.43
Number of observations	1,050	3,176	1,050	3,176	11,110	29,319

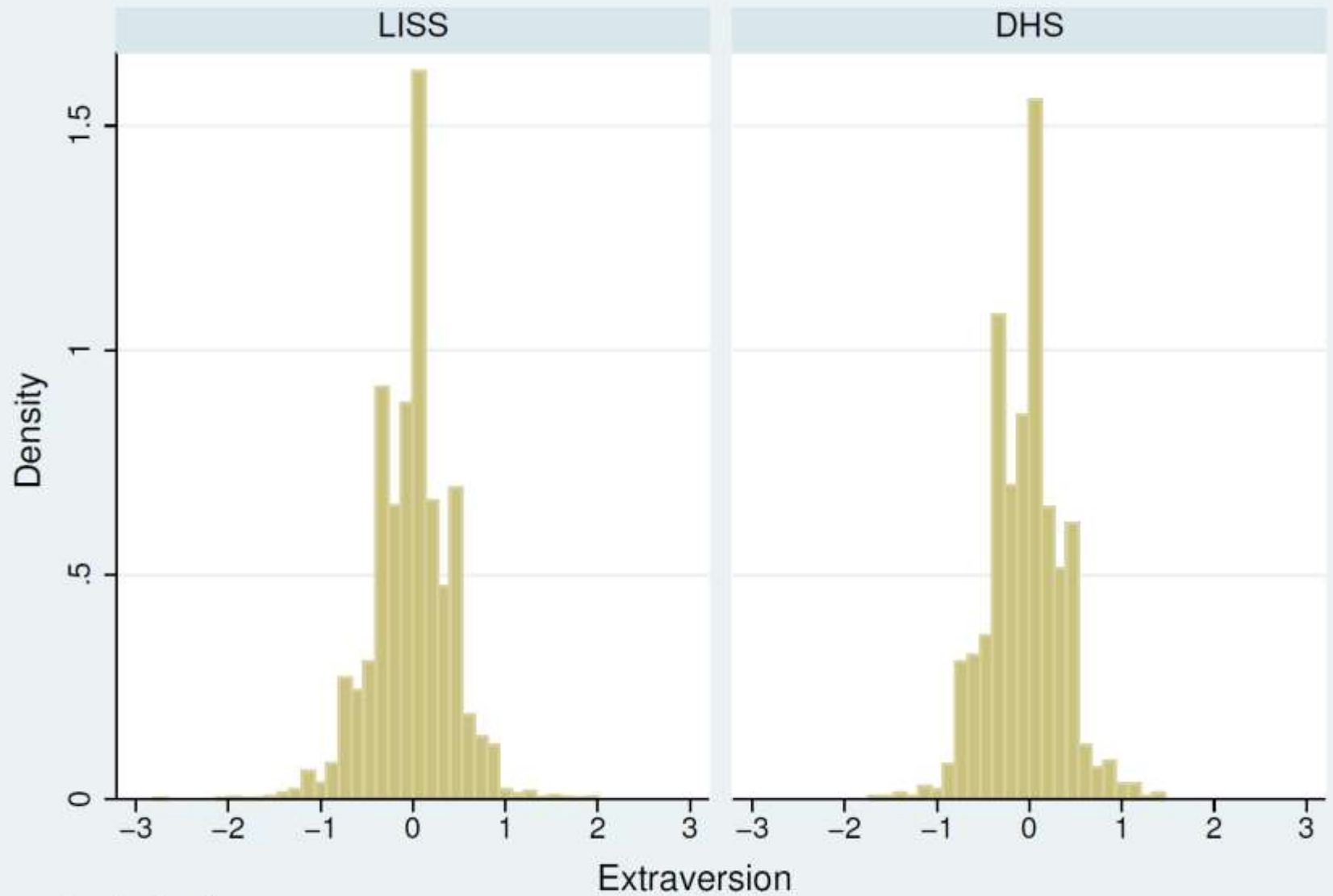
A. Extraversion	DHS 2009	DHS 2014	LISS 2009	LISS 2014
Experienced unemployment	-0.016 (0.05)	-0.010 (0.07)	-0.085*** (0.03)	-0.109*** (0.03)
Age/10	0.090 (0.13)	0.196 (0.17)	-0.258*** (0.06)	-0.217*** (0.06)
Age/10 squared	-0.009 (0.01)	-0.016 (0.01)	0.022*** (0.01)	0.017*** (0.01)
Female	0.084* (0.04)	0.044 (0.04)	-0.011 (0.02)	0.010 (0.02)
Adjusted R ²	0.011	0.011	0.013	0.013
Mean dependent variable	3.072	3.011	3.258	3.228
B. Agreeableness				
Experienced unemployment	0.045 (0.06)	-0.004 (0.05)	-0.048** (0.02)	-0.063*** (0.02)
Age/10	0.308* (0.18)	0.249* (0.13)	0.054 (0.05)	0.049 (0.04)
Age/10 squared	-0.024 (0.02)	-0.020* (0.01)	-0.006 (0.00)	-0.004 (0.00)
Female	0.292*** (0.03)	0.303*** (0.03)	0.326*** (0.02)	0.339*** (0.02)
Adjusted R ²	0.080	0.085	0.122	0.112
Mean dependent variable	3.907	3.879	3.891	3.885

D. Emotional stability	DHS 2009	DHS 2014	LISS 2009	LISS 2014
Experienced unemployment	-0.050 (0.06)	-0.103* (0.06)	-0.072** (0.03)	-0.132*** (0.03)
Age/10	-0.018 (0.17)	0.147 (0.11)	-0.115* (0.06)	-0.053 (0.06)
Age/10 squared	0.006 (0.01)	-0.009 (0.01)	0.016** (0.01)	0.009* (0.01)
Female	-0.175*** (0.04)	-0.193*** (0.04)	-0.223*** (0.02)	-0.213*** (0.03)
Adjusted R ²	0.057	0.060	0.064	0.070
Mean dependent variable	3.597	3.602	3.435	3.519
E. Openness				
Experienced unemployment	-0.023 (0.05)	-0.025 (0.05)	-0.055*** (0.02)	-0.038* (0.02)
Age/10	-0.028 (0.13)	0.057 (0.11)	-0.103** (0.04)	0.004 (0.04)
Age/10 squared	-0.001 (0.01)	-0.009 (0.01)	0.004 (0.00)	-0.005 (0.00)
Female	-0.031 (0.03)	-0.017 (0.03)	-0.080*** (0.02)	-0.076*** (0.02)
Adjusted R ²	0.151	0.150	0.127	0.138
Mean dependent variable	3.432	3.396	3.484	3.461
N observations	1050	1050	3176	3176

D. Results

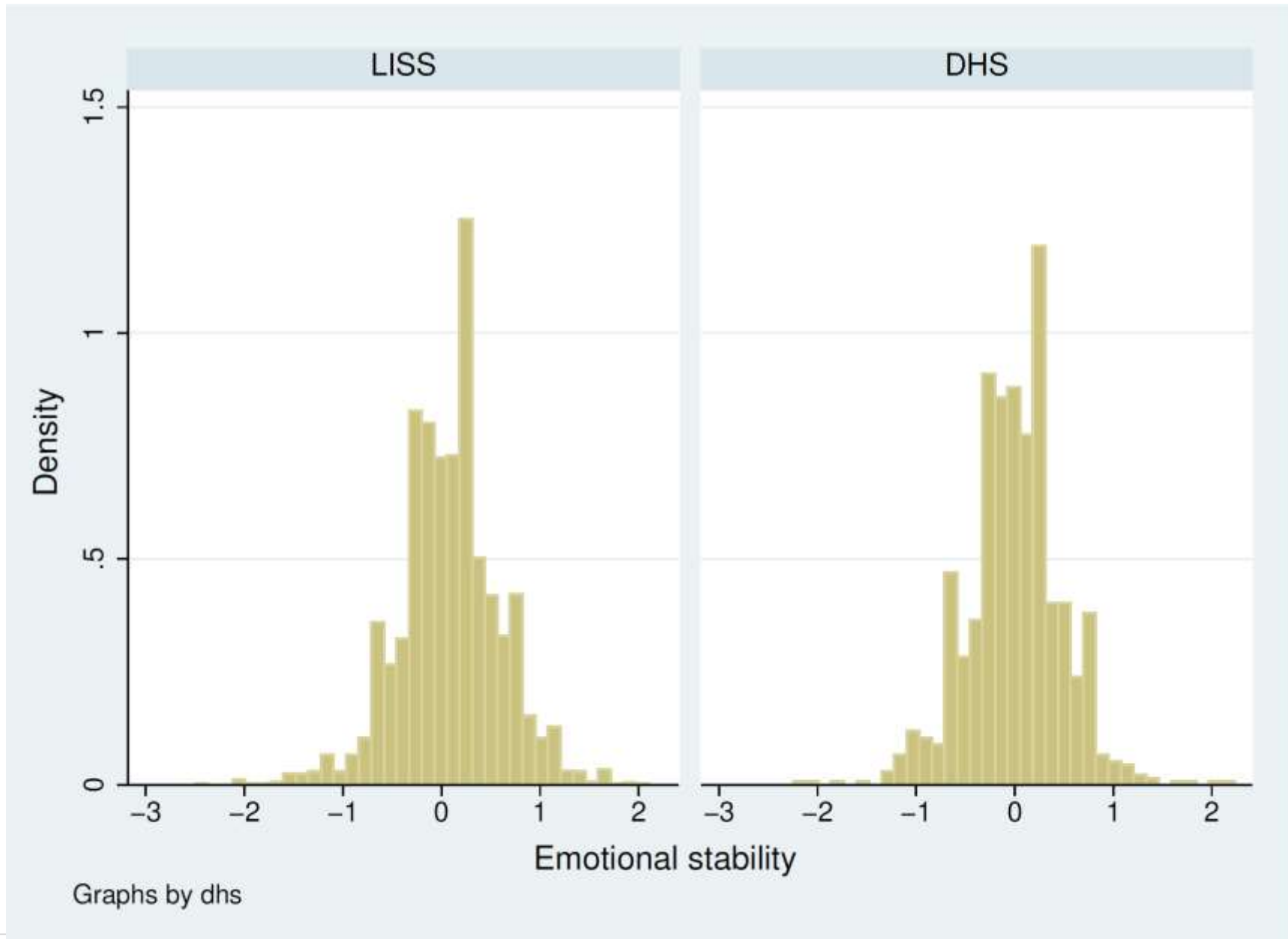
- Negative correlation between experienced (aggregate) unemployment and 4 out of 5 personality traits
- no correlation with conscientiousness
- Results are stronger in the LISS panel
- Effect sizes are small: a 1 ppoint increase in average experienced unemployment reduces:
 - Openness .038–.055 point (mean of 3.4)
 - Extroversion .085–.109 point (mean of 3.2)
 - Emotional stability .072–.132 (mean of 3.5)

D. Results – changes over 5 year period



Graphs by dhs

D. Results – changes over 5 year period (2)



D. Results – changes over 5 year period (3)

	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Openness
Experienced unemployment	0.092 (0.22)	-0.063 (0.27)	0.661** (0.26)	0.359 (0.25)	-0.087 (0.27)
Age/10	-0.291 (0.23)	-0.188 (0.29)	0.528** (0.26)	0.187 (0.27)	0.103 (0.29)
Age/10 squared	0.018* (0.01)	-0.005 (0.01)	-0.053*** (0.01)	0.003 (0.01)	-0.021* (0.01)
Adjusted R ²	0.009	0.002	0.021	0.032	0.020
Mean dependent variable	-0.000	-0.000	-0.000	0.000	-0.000
Male					
Experienced unemployment	0.106 (0.39)	0.093 (0.50)	0.128 (0.42)	1.033*** (0.40)	-0.120 (0.47)
Female					
Experienced unemployment	0.042 (0.30)	-0.004 (0.34)	1.001*** (0.35)	-0.101 (0.33)	0.184 (0.35)

LISS, balanced panel in 2009 and 2014

Controls for education and labor market status

Standard errors clustered at the individual

D. Results – changes over time (4)

All	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Openness
Experienced unemployment	0.135 (0.11)	0.263* (0.14)	0.290** (0.13)	0.231* (0.13)	0.014 (0.13)
Age/10	-0.104 (0.10)	0.225 (0.15)	0.527*** (0.11)	-0.110 (0.12)	0.267** (0.13)
Age/10 squared	0.015** (0.01)	-0.009 (0.01)	-0.047*** (0.01)	0.011 (0.01)	-0.026*** (0.01)
Adjusted R ²	0.004	0.008	0.009	0.018	0.015
Mean dependent variable	-0.000	0.000	-0.000	0.001	0.000
Male					
Experienced unemployment	0.319* (0.19)	0.488** (0.24)	-0.146 (0.21)	0.475** (0.20)	0.103 (0.22)
Female					
Experienced unemployment	-0.024 (0.15)	0.073 (0.17)	0.569*** (0.16)	0.078 (0.17)	-0.083 (0.18)

LISS, unbalanced panel 2008-2014 (with gaps)

Controls for education and labor market status

Standard errors clustered at the individual

D. Results – robustness

Born in the Netherlands	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Openness
Experienced unemployment	0.118 (0.12)	0.313** (0.14)	0.295** (0.14)	0.284* (0.15)	0.039 (0.15)
Age/10	-0.150 (0.11)	0.368** (0.17)	0.588*** (0.12)	-0.109 (0.13)	0.269* (0.14)
Age/10 squared	0.017** (0.01)	-0.022** (0.01)	-0.050*** (0.01)	0.011 (0.01)	-0.029*** (0.01)
Adjusted R ²	0.004	0.009	0.010	0.020	0.015
Mean dependent variable	-0.005	0.013	0.024	0.030	-0.010
N individuals	7680	7680	7680	7680	7680
N observations	23032	23032	23032	23032	23032
Not born in the Netherlands					
Experienced unemployment	0.283 (0.34)	0.126 (0.47)	0.282 (0.37)	-0.014 (0.38)	-0.067 (0.42)
Age/10	0.582 (0.41)	-0.670 (0.56)	0.284 (0.45)	-0.255 (0.49)	0.643 (0.57)
Age/10 squared	0.009 (0.02)	0.060** (0.02)	-0.026 (0.02)	0.012 (0.02)	-0.024 (0.02)
Adjusted R ²	0.006	0.014	0.006	0.018	0.022
Mean dependent variable	0.011	-0.095	-0.134	-0.142	0.044
N individuals	1802	1802	1802	1802	1802
N observations	4046	4046	4046	4046	4046

D. Results – robustness (2)

	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Openness
Experienced GDP	0.042 (0.25)	0.431 (0.28)	-0.551** (0.25)	-0.055 (0.24)	0.448* (0.27)
Experienced stock market	0.029 (0.04)	0.066 (0.04)	-0.050 (0.04)	0.006 (0.04)	0.039 (0.04)
Experienced inflation	-0.408 (0.31)	-0.180 (0.37)	0.021 (0.35)	0.003 (0.33)	-0.457 (0.35)
Mean dependent variable	-0.008	-0.369	-0.095	0.204	0.122
N individuals	5069	5069	5069	5069	5069
N observations	13514	13514	13514	13514	13514

LISS men, unbalanced panel 2008-2014 (with gaps)

Controls for education and labor market status

Standard errors clustered at the individual

D. Results – extension: financial risk taking

	All	Male	Female	All	Male	Female
Experienced GDP	0.543 (0.33)	0.244 (0.47)	0.924** (0.45)			
Experienced unemployment				-0.143 (0.18)	-0.440* (0.24)	0.221 (0.25)
Age/10	-2.241*** (0.68)	-5.076*** (0.53)	-0.887 (0.63)	-2.158*** (0.71)	-5.329*** (0.54)	-0.013 (0.57)
Age/10 squared	-0.011 (0.01)	-0.012 (0.01)	-0.006 (0.01)	0.004 (0.01)	0.007 (0.01)	-0.001 (0.02)
Adjusted R ²	0.023	0.024	0.023	0.022	0.025	0.022
Mean dependent variable	0.000	0.186	-0.222	0.000	0.186	-0.222
N individuals	5932	3043	2892	5932	3043	2892
N observations	22091	12032	10059	22091	12032	10059

DHS, unbalanced panel 2005-2015

Controls for education and labor market status

Standard errors clustered at the individual

Ampudia and Ehrmann (forthcoming) stock market

And risk aversion

D. Results – extension: locus of control

	Locus of control		
	All	Male	Female
Experienced unemployment	0.360*	0.481*	0.270
	(0.20)	(0.28)	(0.29)
Age/10	0.707	4.282***	-1.453
	(1.25)	(0.50)	(1.80)
Age/10 squared	-0.031***	-0.029**	-0.032*
	(0.01)	(0.01)	(0.02)
Adjusted R ²	0.004	0.006	0.002
Mean dependent variable	-0.000	-0.013	0.014
N individuals	5571	2840	2734
N observations	15309	8121	7188

Locus of control: more in charge of own circumstances

DHS, unbalanced panel 2005-2015 (with gaps)

Controls for education and labor market status

Standard errors clustered at the individual

E. Summary findings and conclusions

- Past aggregate unemployment is **negatively** correlated with almost all personality traits
- Effect size is small, and depends on sample size
- Changes in past aggregate unemployment are **positively** correlated with:
 - Emotional stability for men
 - Also agreeableness and extraversion for men
 - Conscientiousness for women
- Traits are not as stable as assumed

E. Summary findings and conclusions (2)

Possible channels:

- Past aggregate unemployment is correlated with own unemployment spells (Buccioli and Zarri, 2016)
- Past aggregate unemployment affects parental unemployment, which may in turn affect personality (Angelini, Bertoni and Corazzini, 2016)
- Memory of past adverse circumstances is correlated with current personality

Thank you!

All comments and suggestions
are welcome



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