Online Appendix

Skill Depreciation during Unemployment: Evidence from Panel Data

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Appendix A Additional Tables and Figures

Table A.1: Skill and Life Satisfaction Survey Content

Domain	Detail	Question Type
Cognitive Skills		
Math	3 free-response questions	easy, medium, hard
Short-term recall	Recall 10 words	Immediately after hearing + later during survey
Verbal fluency		List as many animals as possible in 1 minute
Primary non-cognitive		
Locus of Control	Agreement with statements about control over one's outcomes	Likert scale (1-7 agreement) with 10 questions
(4 of the) Big-5 Traits	Subjective evaluation of openness, conscientiousness, extraversion, and stability	Likert scale (1-7 agreement) with 3 questions for each trait
Secondary non-cognitive		
Other Personality Traits	Subjective evaluation of trust in others, patience, reciprocity, and risk tolerance	Likert scale (1-7 agreement) with 1 question each
Life Satisfaction		
Life Satisfaction	Subjective self-assessment	Cardinal assessment of life satisfaction on a 1-10 scale

Notes: This table shows the main contents of our survey on skills and life satisfaction. See Arni et al. (2014) for a detailed discussion of the survey content, questionnaire administration, and sample composition.

Table A.2: Summary Statistics of All Respondents vs. the Analysis Sample

	All	Analysis Sample
Demographics		
Female	0.47	0.44
	(0.50)	(0.50)
Age at Unemployment	33.76	34.57
	(10.78)	(10.67)
University Degree	0.26	0.25
	(0.44)	(0.43)
Immigrant	0.20	0.20
	(0.40)	(0.40)
Previous Emp. Spell		
Prior wage (€)	47.00	57.57
	(34.39)	(30.73)
Full-time	0.74	0.84
	(0.44)	(0.37)
Duration (years)	9.02	9.31
	(4.60)	(4.46)
Involuntary Unemp.	0.40	0.45
	(0.49)	(0.50)
Baseline Survey		
Life satisfaction (out of 10)	6.60	6.58
	(2.10)	(2.11)
Composite skill index (€)	60.49	60.49
	(13.34)	(13.34)
Correct math (out of 3)	1.77	1.77
	(0.75)	(0.75)
Listed words (1 minute)	23.56	23.33
	(7.02)	(7.00)
Immediate memory (out of 10)	6.59	6.58
	(1.67)	(1.66)
Recall memory (out of 10)	5.19	5.13
	(1.96)	(1.96)
Locus of control (out of 7)	4.77	4.77
	(0.82)	(0.82)
Extravert (out of 7)	5.17	5.16
	(1.13)	(1.12)
Stable (out of 7)	4.22	4.25
	(1.20)	(1.20)
Open (out of 7)	5.05	5.05
	(1.21)	(1.21)
Conscientious (out of 7)	6.20	6.22
	(0.89)	(0.88)
Observations	15173	11684

Notes: This table replicates the summary statistics shown in Table 2 separately for all respondents and the analysis sample. The analysis sample restricts to those with non-marginal employment immediately prior to the unemployment spell. Unlike Table 2, we report the raw values of survey responses rather than the z-scores.

Table A.3: Standard Deviation of Responses by Survey Waves

	(1) 2-month	(2) 6-month	(3) 12-month	(4) 36-month
Panel A: Skills indices				
Composite	13.34	14.13	14.36	14.88
Cognitive	10.16	10.85	11.40	11.53
Primary non-cognitive	8.23	8.59	8.32	8.25
Secondary non-cognitive	2.02	1.83	1.85	1.78
Panel B: Cognitive				
Math	0.99	1.01	1.01	1.03
Verbal fluency	1.00	1.05	1.15	1.01
Immediate memory	0.99	1.05	1.02	1.00
Recall memory	1.00	1.03	0.99	0.95
Panel C: Primary non-cognitive				
Locus of control	1.00	1.00	0.97	0.95
Extravert	0.99	1.02	0.98	0.96
Open	1.00	0.97	0.98	0.96
Conscientious	0.99	0.91	0.95	0.95
Panel D: Secondary non-cognitive				
Risk tolerance	1.01	0.90	1.04	1.00
Stable	1.00	0.99	0.97	0.98
Trust	1.01	0.90	0.90	0.88
Patience	1.00	0.94	0.89	0.91
Reciprocity	1.00	0.90	0.89	0.89

Notes: This table reports the standard deviation of given skills at each survey wave. Column (1) reports the standard deviation in wave 1 (month 2), Column (2) in wave 2 (month 6), column 3 in wave 3 (month 12), Column (4) in wave 4 (month 36). The rows in the table represent the relevant skills. Panel A reports skill indices, which are formed by predicting the prior employment spell's earnings using OLS and treating survey responses as cardinal. Panels B, C and D show the standard deviation of the individual cognitive, primary non-cognitive, and secondary non-cognitive skill items, respectively. In panels B through D, we report the standard deviation of the skill items standardized by the wave 1 (month 2) standard deviation.

Table A.4: Predictive Power of Skills Explaining Reemployment Wages

		(1) R^2	(2) N	(3) β	(4) SE(β)
Panel A: Reemployed at 6-12 months					
Composite	Baseline skills vs. prior wages	0.201	210	1.06	0.14
	6-month skills vs. reemployment wages	0.130	210	0.78	0.16
Cognitive	Baseline skills vs. prior wages	0.121	217	1.15	0.21
	6-month skills vs. reemployment wages	0.116	217	1.00	0.22
Primary non-cognitive	Baseline skills vs. prior wages	0.075	242	1.22	0.27
	6-month skills vs. reemployment wages	0.080	242	1.02	0.26
Secondary non-cognitive	Baseline skills vs. prior wages	0.004	222	1.08	1.17
	6-month skills vs. reemployment wages	0.021	222	2.46	1.06
Panel B: Reemployed at 12-30 months					
Composite	Baseline skills vs. prior wages	0.084	57	0.81	0.44
	12-month skills vs. reemployment wages	0.087	57	0.68	0.38
Cognitive	Baseline skills vs. prior wages	0.051	100	0.69	0.36
	12-month skills vs. reemployment wages	0.043	100	0.51	0.30
Primary non-cognitive	Baseline skills vs. prior wages	0.053	179	0.90	0.29
	12-month skills vs. reemployment wages	0.012	179	0.36	0.25
Secondary non-cognitive	Baseline skills vs. prior wages	0.019	100	2.36	1.73
	12-month skills vs. reemployment wages	0.014	100	1.75	1.65

Notes: This table studies the predictive power of skill indices explaining reemployment wages in different samples. Panel A focuses on those who become reemployed between the month 6 and 12, while Panel B on those who reemployed between the month 12 and 30. Column (1) in Panel A (B) reports the R-squared from a regression of 6 (12) month skills measured in wave 2 (3) and *wages*. In rows labeled "6-month (12-month) skills vs. prior wages" we use *prior wages* in the regression. Note that skill indices are trained to explain prior wages and so these rows serve as a benchmark. Rows labeled "6-month (12-month) skills vs. reemployment wages" use *reemployment wages* in the regression. Column (2) shows the sample size in the regression. Column (3) shows the regression coefficients of the regression, while Column (4) reports the standard errors. For both panels we report results using composite skill index, cognitive skill index, primary non-cognitive (the Big-5 and locus of control), and secondary non-cognitive index (other personality traits).

Table A.5: Change in Skills by Unemployment and Survey Attrition

	(1) Composite	(2) Cognitive	(3) Primary non-cognitive	(4) Secondary noncogntive
Panel A: Change from 2-month survey to 6-month survey				
UE spell > 12 months	.027	.014	.017	.001
	(.027)	(.019)	(.015)	(.004)
Attrit at 12 months	-.038	-.003	-.022	.006
	(.036)	(.023)	(.018)	(.005)
Interaction term	.013	.000	.016	-.010
	(.043)	(.028)	(.022)	(.006)
Constant	.006	.000	.008	.002
	(.023)	(.016)	(.013)	(.003)
N	598	619	701	640
Panel B: Change from 2-month survey to 12-month survey				
UE spell > 30 months	.040	.027	.016	-.001
	(.051)	(.037)	(.020)	(.005)
Attrit at 30 months	-.025	-.005	.008	.005
	(.058)	(.044)	(.028)	(.006)
Interaction term	.029	.012	.024	-.001
	(.070)	(.050)	(.032)	(.008)
Constant	-.001	.006	-.006	-.000
	(.043)	(.034)	(.018)	(.004)
N	159	254	445	258

Notes: This table shows the within-person skill change since the 2-month baseline survey among those who are either continually re-employed or continually unemployed in the administrative data by the subsequent survey wave. Panel A is a regression of the skill change as of the 6-month survey on an indicator for being continually unemployed in the administrative data as of month 12, an indicator for not responding to the 12-month survey, and an interaction term. Panel B is a regression of the skill change as of month 12 on an indicator for being continually unemployed in the administrative data as of the 12-month survey, an indicator for not responding to the 30-month survey, and an interaction term. Each column within each panel represents a separate regression of a different skill index. Robust standard errors are shown in parentheses.

Table A.6: Survey Attrition by Employment Status

	Survey Wave		
	Month 6	**Month 12**	**Month 30**
Continually employed since 2-month survey	.019	0.039	0.028
	(.029)	(.018)	(.021)
Reemployed but not continually since 2-month survey	.056	0.032	0.028
	(.019)	(.010)	(.011)
Constant	.375	.427	.619
	(.013)	(.008)	(.010)

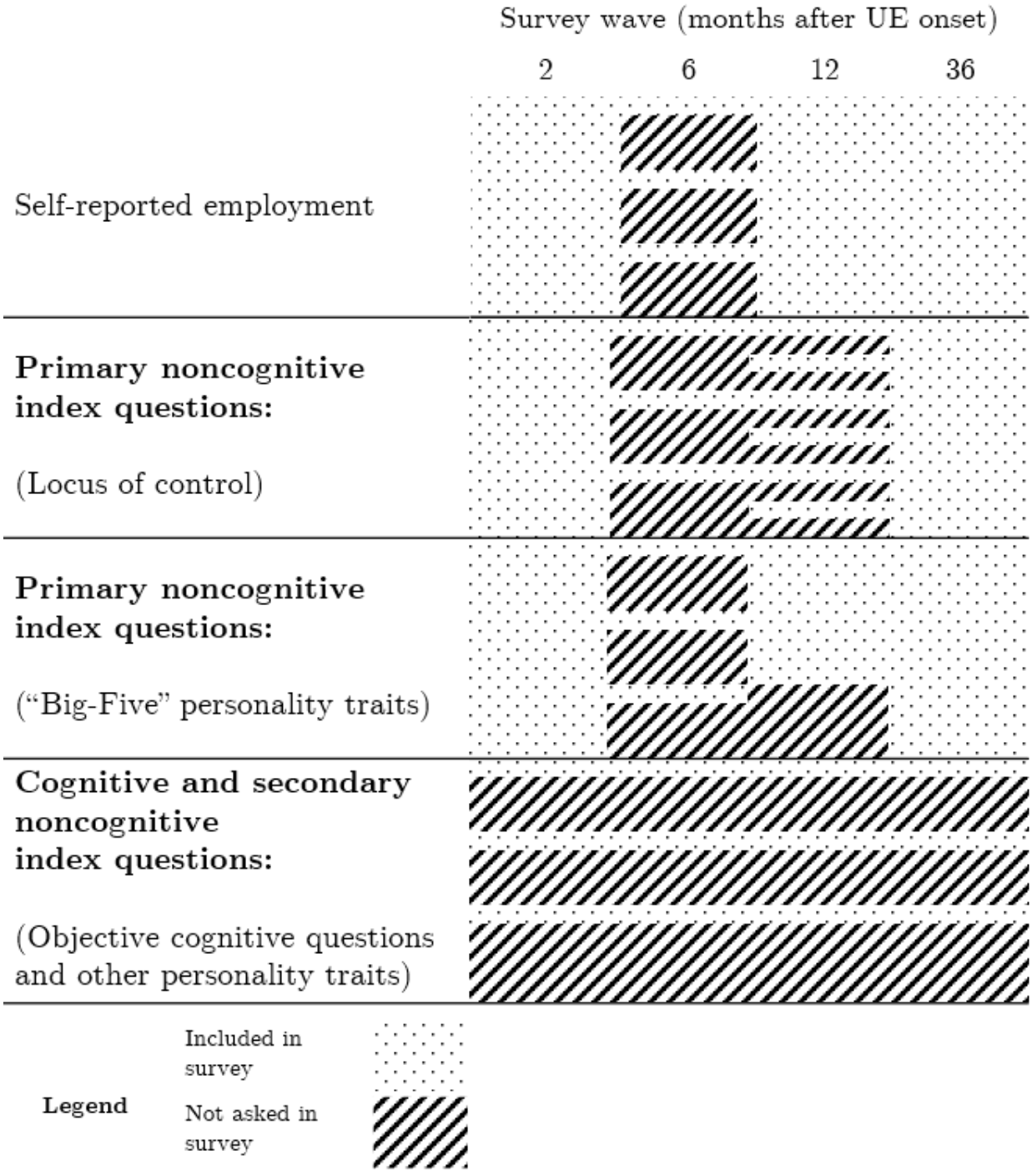
Notes: This table shows differences in attrition probability by employment status in the administrative data. Each column is a separate regression where the outcome is an indicator for attriting from the analysis sample by that survey wave. The independent variables are (1) an indicator for remaining continually employed since the baseline survey (the group we refer as the "reference group" in our main analysis) and (2) either becoming reemployed after the baseline survey but before the current survey or becoming unemployed after reemployment. The omitted category represented by the constant is remaining continually unemployed by that survey wave. Robust standard errors are shown in parentheses. Asterisks correspond to two-sided tests for differences relative to those who remain continually unemployed.

Table A.7: Change in Skills and Well-being Following Unemployment among Older American Workers

	(1) $\mathbb{1}\{t \geq t_i^*\}$ coeff	(2) 95% CI range	(3) Within R-squared	(4) N
Panel A: Skills (Scaled in log earnings)				
COGTOT (cognitive score 1)	-0.0087	[-.032,.014]	0.0003	2,700
	(0.0118)			
TICS (cognitive score 2)	-0.0047	[-.022,.012]	0.0001	2,727
	(0.0087)			
MSTOT (cognitive score 3)	0.011	[-.009,.031]	0.0006	2,700
	(0.0102)			
TR20 (simple math 1)	-0.0050	[-.015,.004]	0.0002	8,395
	(0.0048)			
SER7 (simple math 2)	0.006	[-.004,.016]	0.0002	8,471
	(0.0053)			
IMRC (immediate recall)	-0.0039	[-.014,.006]	0.0001	8,395
	(0.0051)			
DLRC (delay recall)	-0.0046	[-.013,.004]	0.0002	8,395
	(0.0044)			
VOCAB (vocabulary)	0.0222	[-.007,.051]	0.0044	979
	(0.0148)			
FINEA (fine motor skills)	-0.0091	[-.018,-.001]	0.0005	9,150
	(0.0044)			
Composite Index	0.0102	[-.008,.029]	0.0006	2,695
	(0.0094)			
Panel B: Well-being (Z-Score)				
CESD (depression)	0.2121	[.152,.273]	0.0076	8,833
	(0.0309)			
FLONE (loneliness)	0.1594	[.094,.225]	0.0034	8,824
	(0.0336)			
GOING (unmotivated)	0.1587	[.092,.226]	0.0031	8,808
	(0.0342)			
BMI (body-mass index)	0.0086	[-.017,.035]	0.0001	9,265
	(0.0133)			

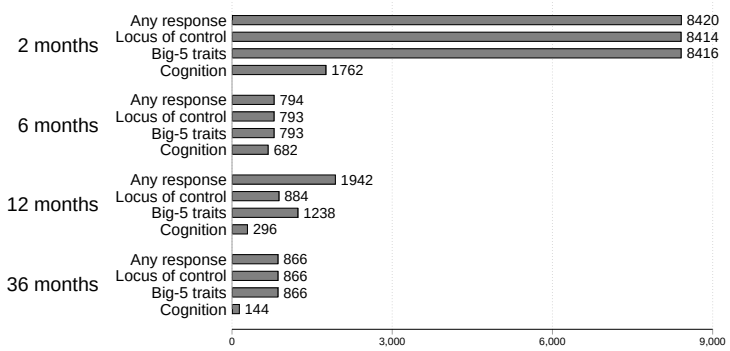
Notes: This table shows the within-person skill change following unemployment for older American workers. Column (1) reports the coefficients (with the corresponding standard errors) of $\mathbb{1}\{t \geq t_i^*\}$ estimated based on equation 5 for each skill and well-being measure separately. In the regression, we control for worker age (fully saturated), person effects, and time effects. We also exclude observations after unemployment in which the worker regains employment to make sure that the post-unemployment effects reflect the skills of those who are continuously unemployed. In Column (2) we report the corresponding 95% confidence intervals. Column (3) reports the within-person R-squared from the regression, while Column (4) shows the number of observations in each regression. Panel A shows the skill measures, where the skills are scaled by their predicted pre-unemployment log earnings, and OLS is used as a prediction model. Panel B reports the change in well-being measured in z-scores. A positive increase in mood (loneliness, unmotivated, depression) is associated with a decline in well-being. In both panels, the acronyms come from the HRS survey.

Figure A.1: Included Questions by Survey Wave and Cohort

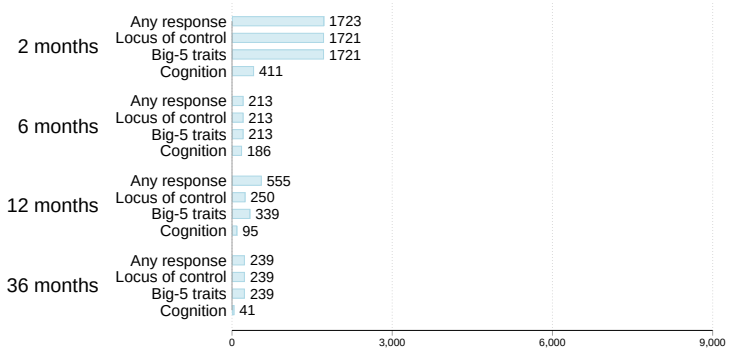


Notes: This figure indicates available data for the twelve cohorts over time for different question topic groups. Within each question topic group, the first row corresponds to the June 2007 cohort and the last row corresponds to the May 2008 cohort. Dots indicate that relevant questions in the topic group were solicited from that cohort at the given point in time, while diagonal lines indicate that they were not. For example, the June 2007, October 2007, and February 2008 cohorts were always asked cognitive and secondary non-cognitive questions; no other cohorts were ever asked these questions.

Figure A.2: Sample Sizes by Survey Wave and Included Questions



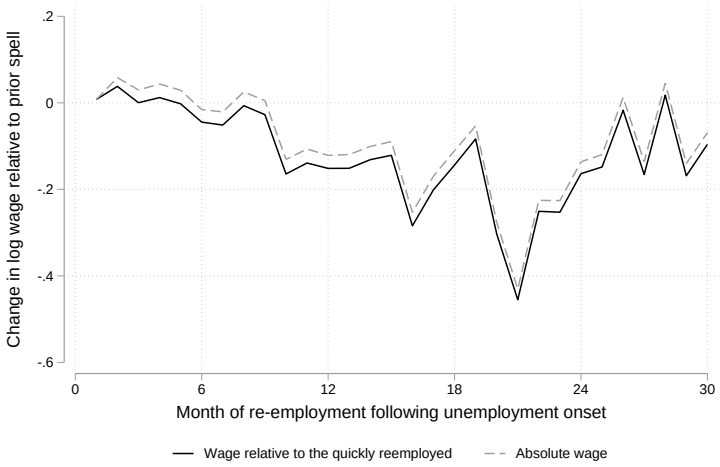
(a) Continually Unemployed Since Unemployment Entry



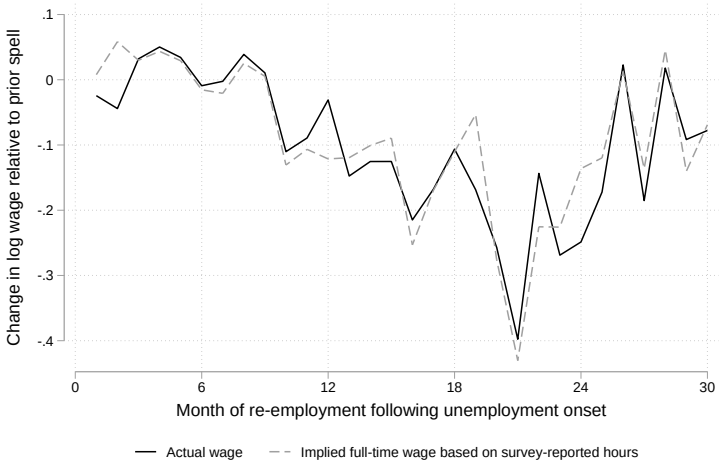
(b) Continually Employed Since Survey Two Months After Entry

Notes: This figure shows the number of observations for each question type for wave 1 (2 months), wave 2 (6 months), wave 3 (12 months) and wave 4 (36 months). Bars represent survey respondents in the analysis sample for each wave. Panel (a) restricts to respondents without any form of employment since unemployment entry, and Panel (b) restricts to respondents who were reemployed by the wave 1 survey and continually employed since then. Employment is defined as non-marginal employment in the administrative data.

Figure A.3: Evolution of Reemployment Wages over the Unemployment Spell: Robustness



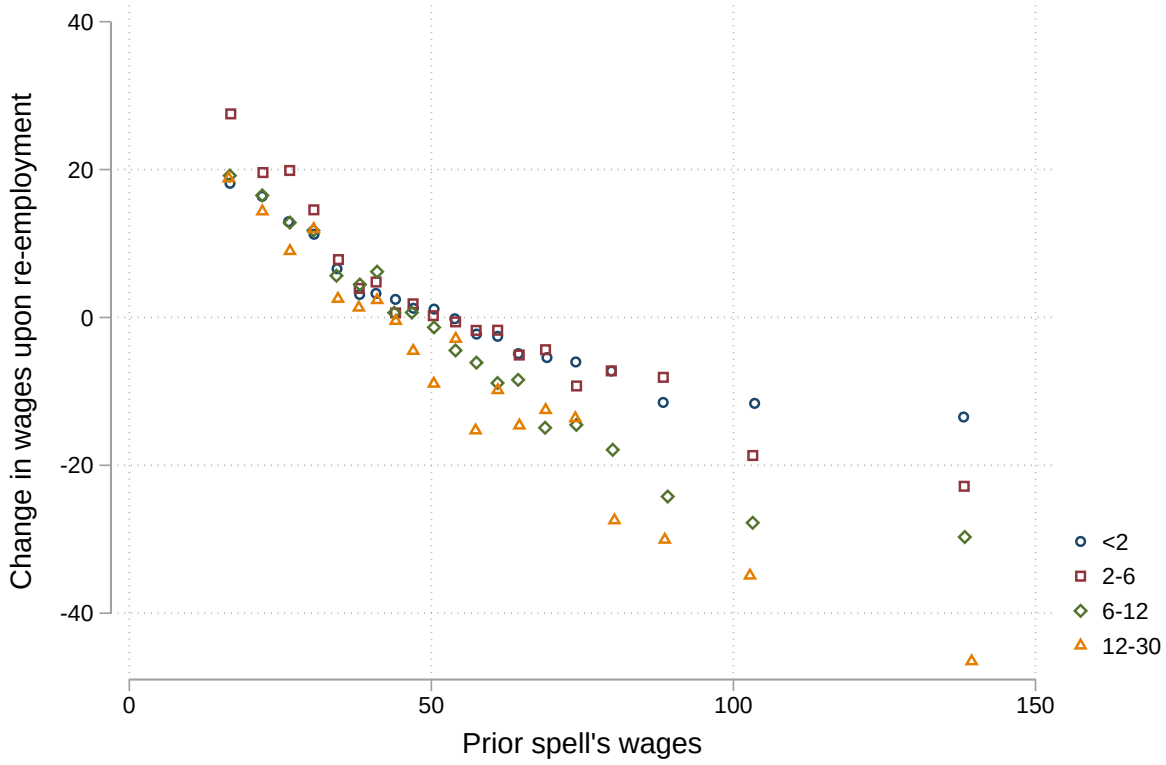
(a) Raw vs. Adjusted for Macroeconomic Trends



(b) Daily vs. Hourly Wages

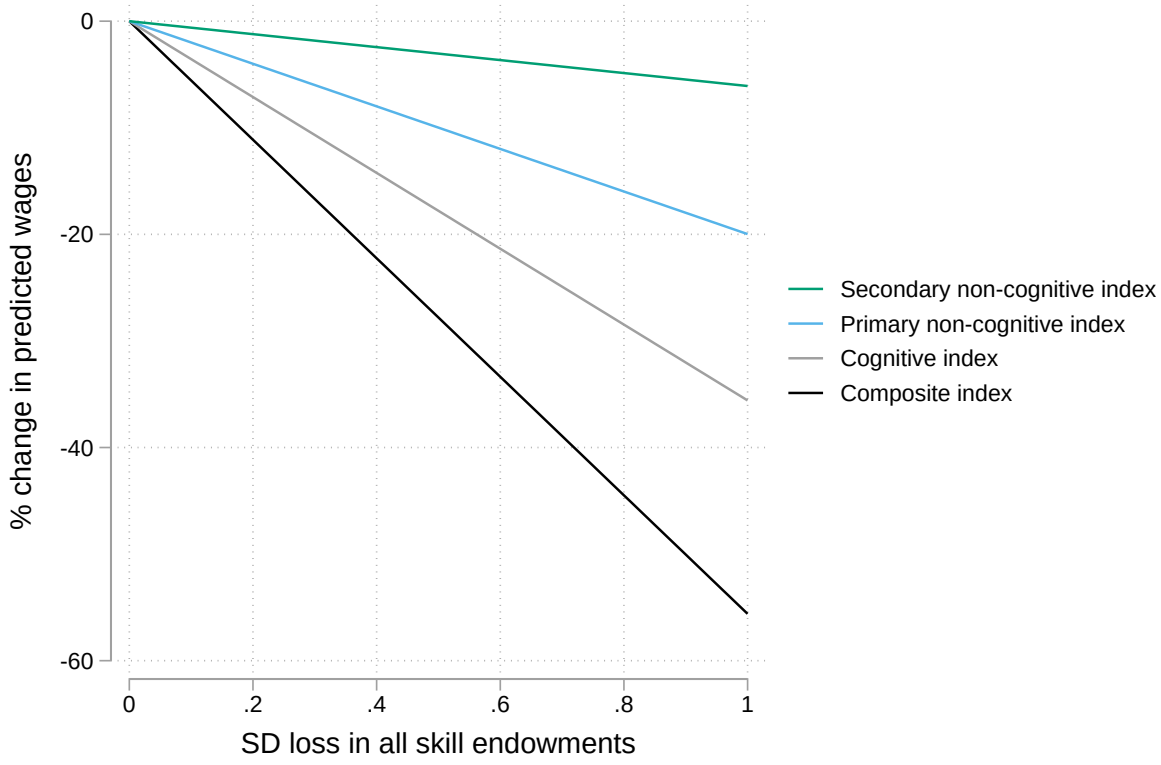
Notes: Both panels plot administrative wages upon reemployment by the month of reemployment as in Panel (b) of Figure 1. Reemployment wages are calculated as the within-worker difference between the wages upon reemployment relative to wages prior to unemployment. In Panel (a), the gray line shows this "raw" reemployment wages. The solid black line reproduces our main specification where we control for macroeconomic trends as well by comparing the wage changes relative to the wages of those who were reemployed quickly (within 2 months) and stayed employed after that. In Panel (b) reemployment wages are calculated as the employee's gross *daily* wage (our benchmark definition, solid line) or as the employee's gross *hourly* wage (dashed line). The latter is calculated using the self-reported weekly hours measured in our survey.

Figure A.4: Relationship between Reemployment Wage Change and Prior Wages by Unemployment Duration



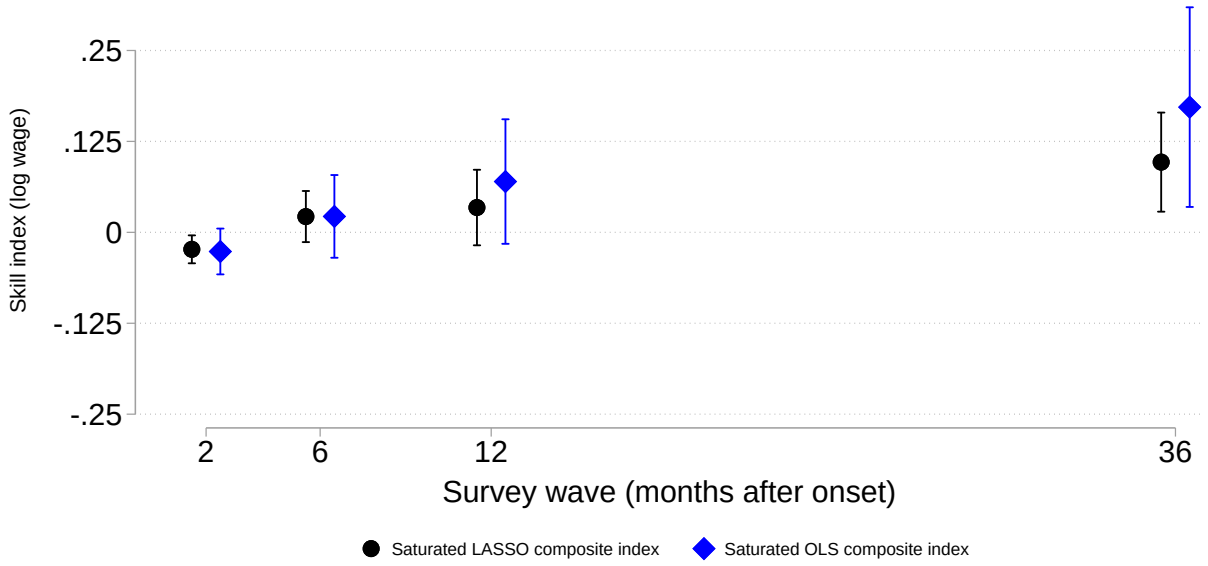
Notes: We report the non-parametric binscattered relationship between reemployment wages and prior wages by unemployment duration. Reemployment wages are calculated as the within-worker difference between the wages upon reemployment and the wages prior to unemployment. Wages are calculated as the employee's gross *daily* wage measured in €.

Figure A.5: Relationship Between Baseline Skills and Prior Wages

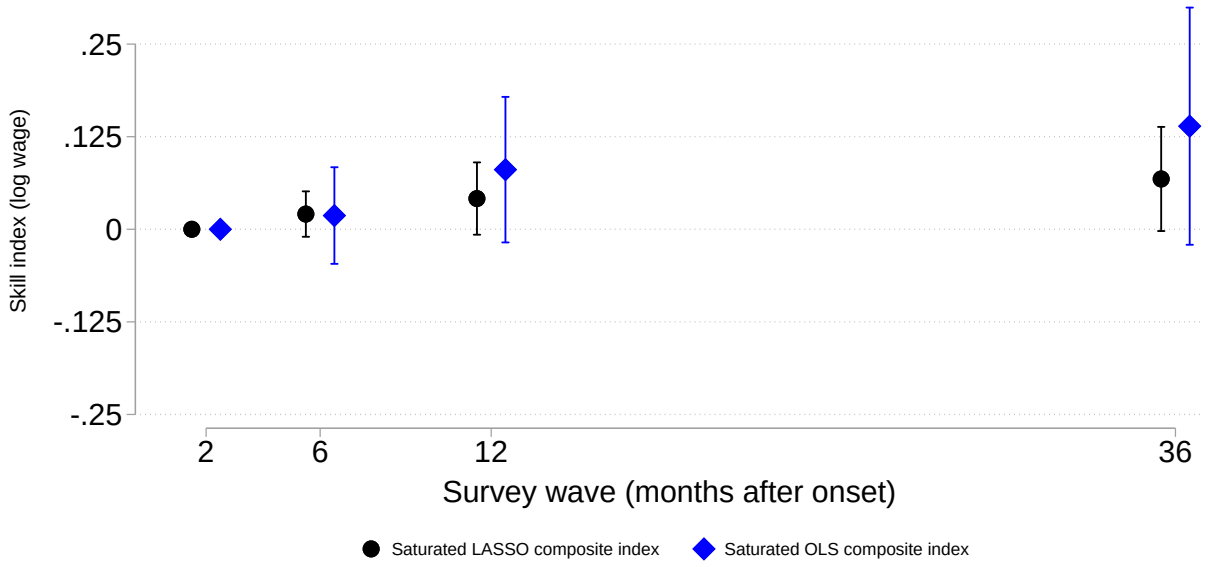


Notes: This figure plots the implied decrease in wages in response to the depreciation of the underlying skills. We apply our preferred prediction model to create skill indices. We apply OLS regression of prior wages on each individual baseline skill question, where Likert scale questions are treated as cardinal. Moving along the x-axis from 0 to 1 corresponds to a 1 standard deviation depreciation of skills in every underlying question in that skill category. Depreciation is defined as a change that is associated with lower prior wages in the prediction model. In particular, we assume that items with positive (negative) coefficients in the prediction model are decreased (increased) by one standard deviation.

Figure A.6: Evolution of Skills Over the Unemployment Spell: Fully Saturated Indices



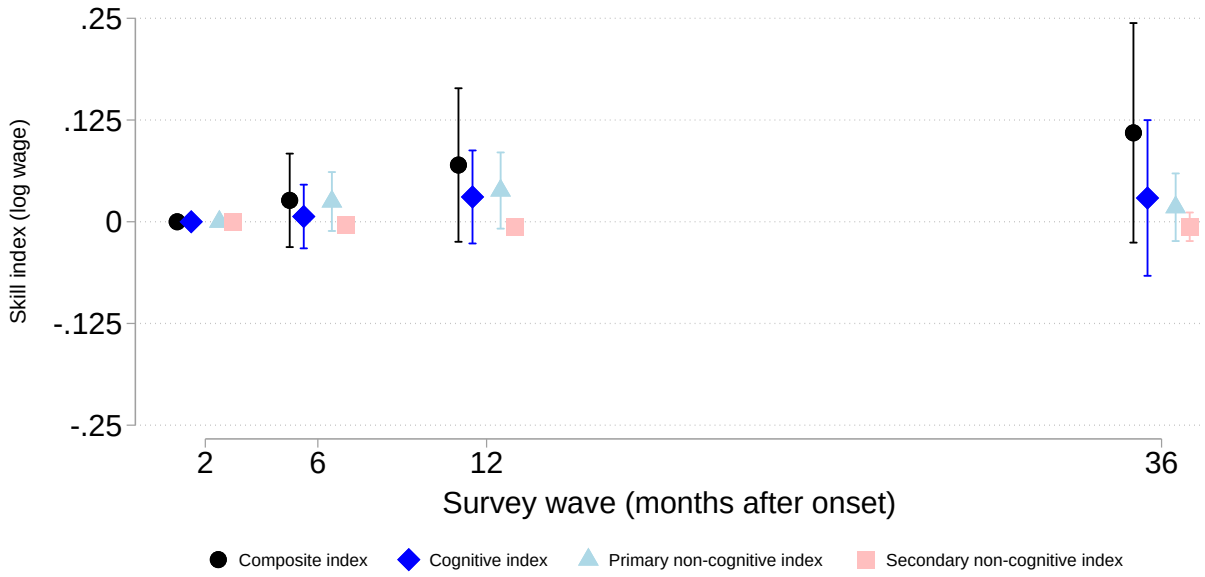
(a) Average Skill of the Unemployed over the Unemployment Spell: Fully Saturated Indices



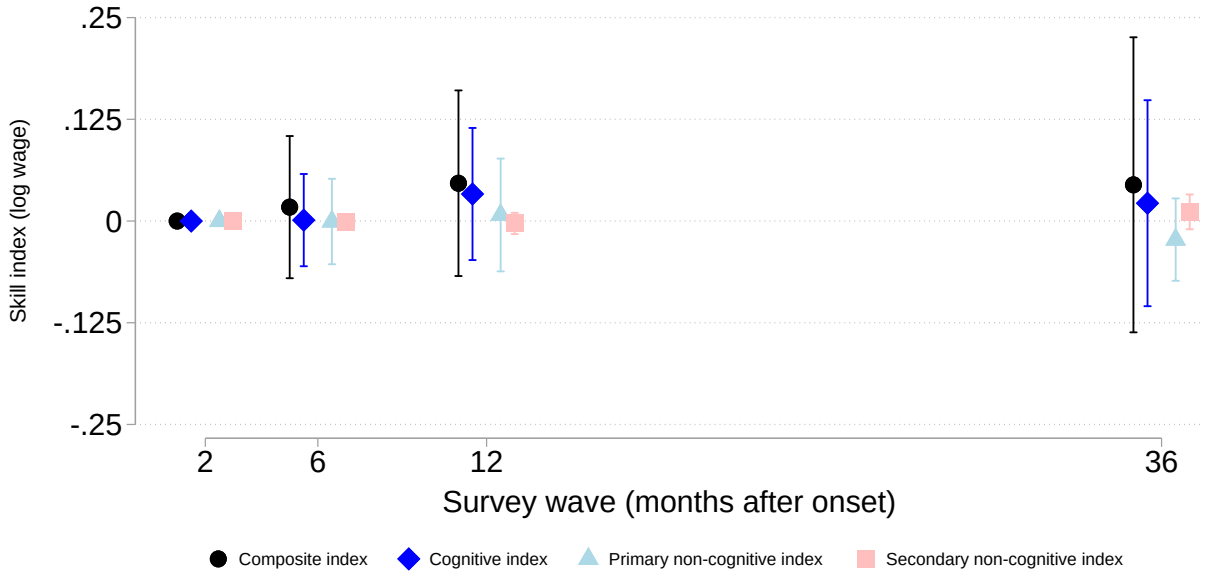
(b) Within-person Skill Changes over the Unemployment Spell

Notes: This figure explores whether the pattern shown in Figure 3 is robust to applying alternative methods for constructing the composite skill index. Both panels plot the change in skill indices of the unemployed relative to the reference group. Panel (a) reports the β_τ coefficients (along with the 95 percent confidence intervals) from equation 1, where the skills of the unemployed at each wave are compared to those who found a job within 2 months. Panel (b) reports estimates including within-person fixed effects (see equation 2). The skill index is formed by predicting the prior employment spell's wages using either OLS (blue diamond) or adaptive LASSO (black dots). Both skill indices use all available skill items. The predictors are all binary. We convert any ordinal skill item, such as a Likert scale response, into a fully saturated set of indicators. The y-axis scale represents approximately $\pm 1\sigma$ of the log predicted earnings using the composite skills index as measured at baseline, which is 0.22.

Figure A.7: Evolution of Skill Indices over Time by Worker Age



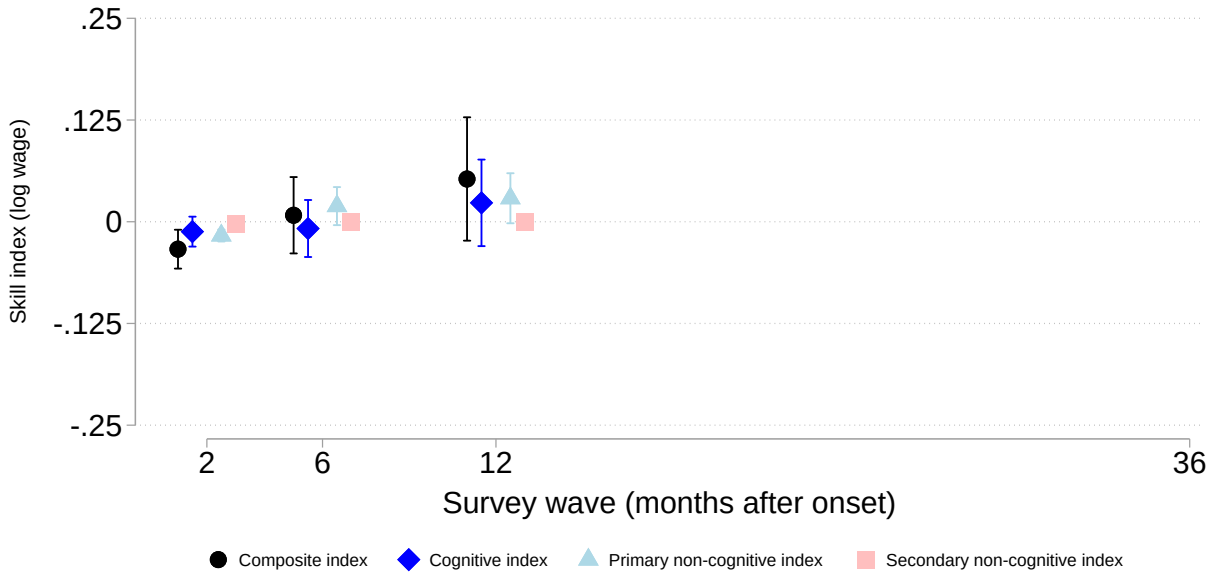
(a) Younger workers (workers <40 years of age)



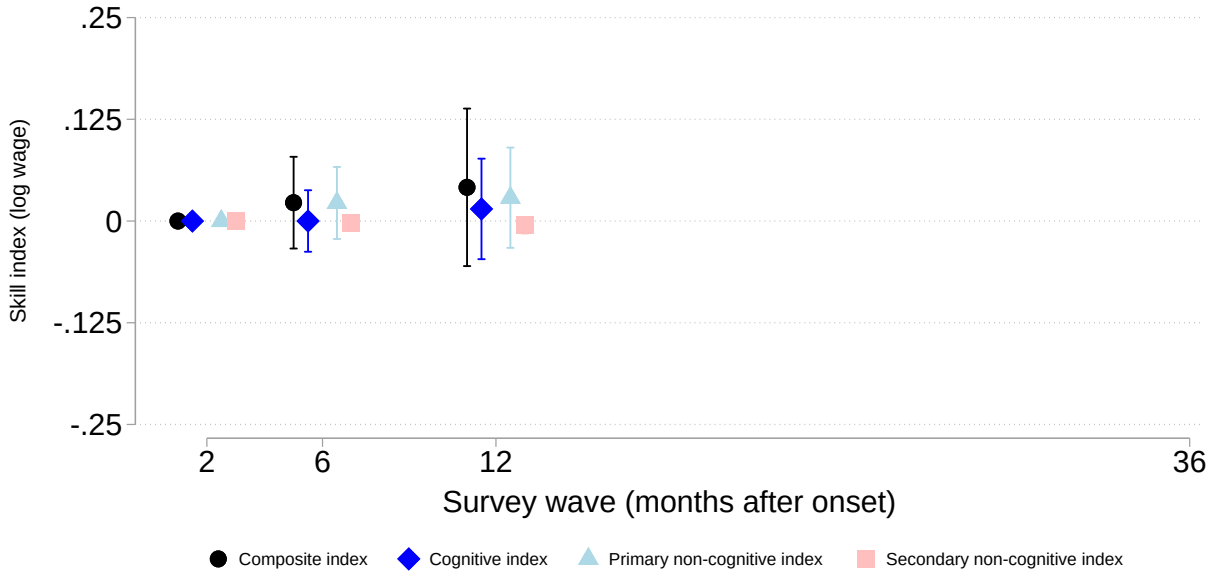
(b) Older workers (workers ≥40 years of age)

Notes: This figure presents how skills evolve during unemployment, separately for younger and older workers. Both panels plot the change in skill indices of the unemployed relative to the reference group. The panels report the β_τ coefficients (along with their 95-percen confidence intervals) from equation 2, where the skills of the unemployed at each wave are compared to those who found a job within 2 months while controlling for worker fixed effects. As before, the skill index is formed by predicting the prior employment spell's wages using OLS and treating survey responses as cardinal. The primary non-cognitive index includes only the Big-5 and locus of control questions, while the secondary non-cognitive index includes additional personality traits, and the composite index includes all cognitive and non-cognitive questions. The y-axis scale represents approximately $\pm 1\sigma$ of the log predicted wages using the composite skills index as measured at baseline, which is 0.22.

Figure A.8: Evolution of Skill Indices over Time, Excluding the Permanently Unemployed



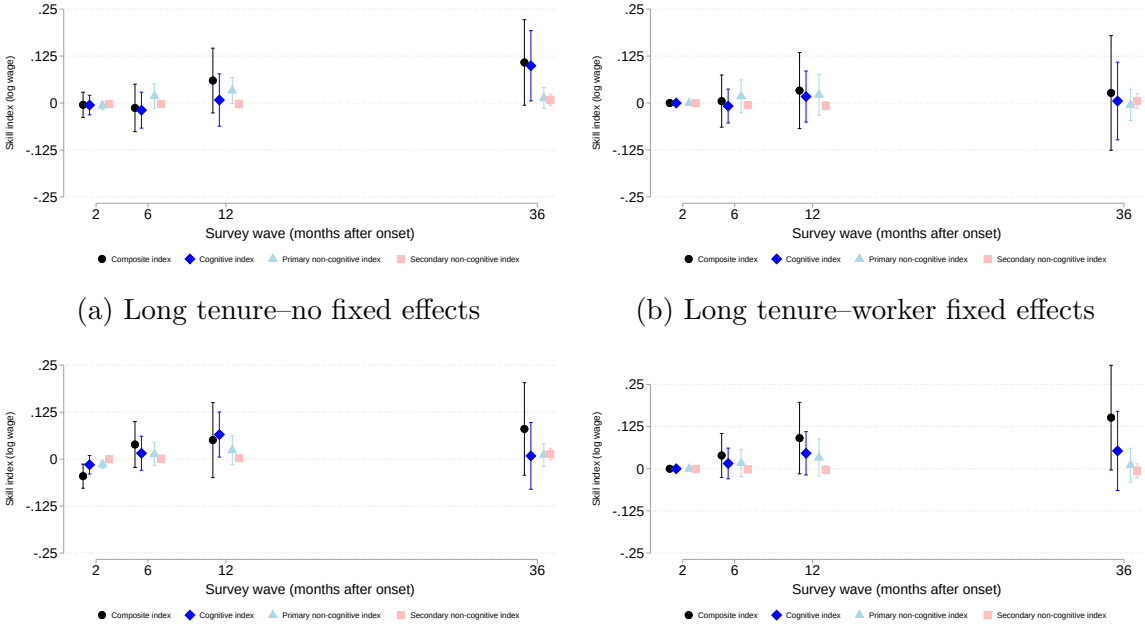
(a) Average Skill of the Unemployed over the Unemployment Spell



(b) Within-person Skill Changes over the Unemployment Spell

Notes: This figure presents the results of our analysis, excluding workers who remain unemployed for more than 30 months. Panel (a) depicts the β_τ coefficients and their 95-percent confidence intervals, estimated using equation 1. This specification compares the skills of the unemployed at each survey wave to those who found a job within 2 months. Panel (b) illustrates the estimates with individual fixed effects, as described in equation 2). Consistent with our main analysis, we construct the skill index by predicting wages in the prior employment spell using OLS and treating survey responses as cardinal. The primary non-cognitive index includes only the Big-5 and locus of control questions, while the secondary non-cognitive index includes additional the personality traits, and the composite index includes all cognitive and non-cognitive questions. The y-axis scale represents approximately $\pm 1\sigma$ of the log predicted wages using the composite skills index as measured at baseline, which is 0.22.

Figure A.9: Skill Evolution by Prior Work Tenure



(a) Long tenure–no fixed effects

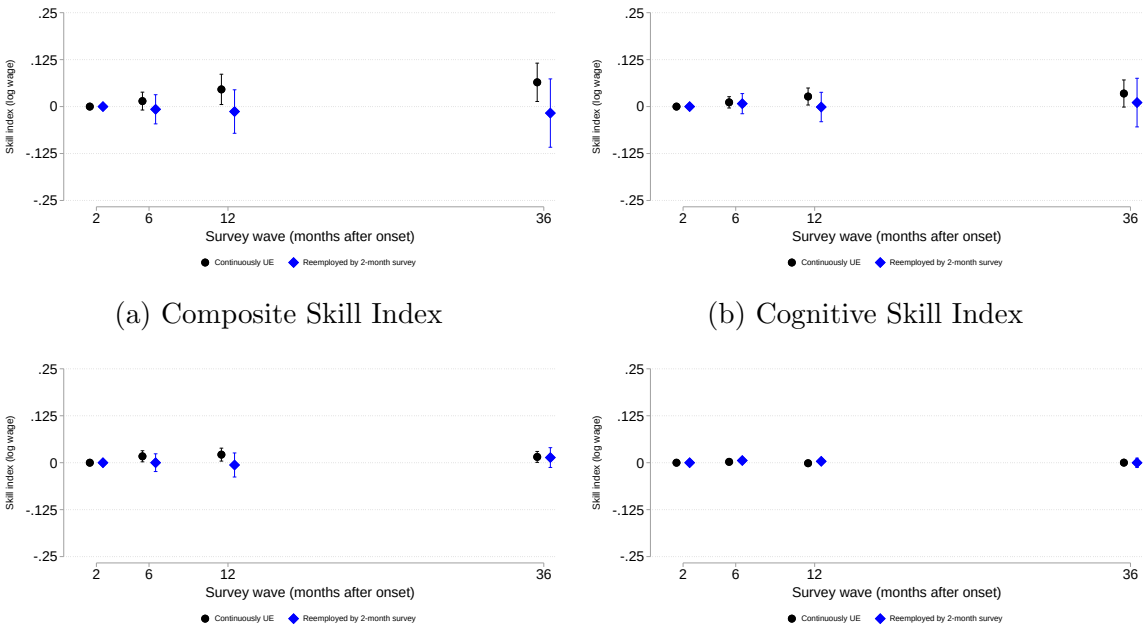
(b) Long tenure–worker fixed effects

(c) Short tenure–no fixed effects

(d) Short tenure–worker fixed effects

Notes: This figure demonstrates how skills evolve during unemployment, separately for workers with above median and below median tenure in their prior job. Both panels plot the change in skill indices of the unemployed relative to the reference group. Panels (a) and (c) report the β_τ coefficients (along with the 95 percent confidence intervals) from equation 1, where the skills of the unemployed at each wave are compared to those who found a job within 2 months. Panels (b) and (d) report estimates with within-person fixed effects (see equation 2). The skill index is formed by predicting wages in the prior employment spell using OLS and treating survey responses as cardinal. The primary non-cognitive index includes only the Big-5 and locus of control questions, while the secondary non-cognitive index includes additional personality traits, and the composite index includes all cognitive and non-cognitive questions. The y-axis scale represents approximately $\pm 1\sigma$ of the log predicted wages using the composite skills index as measured at baseline, which is 0.22.

Figure A.10: Evolution of Skill Index over Time for the Reference Group and for the Unemployed



(a) Composite Skill Index

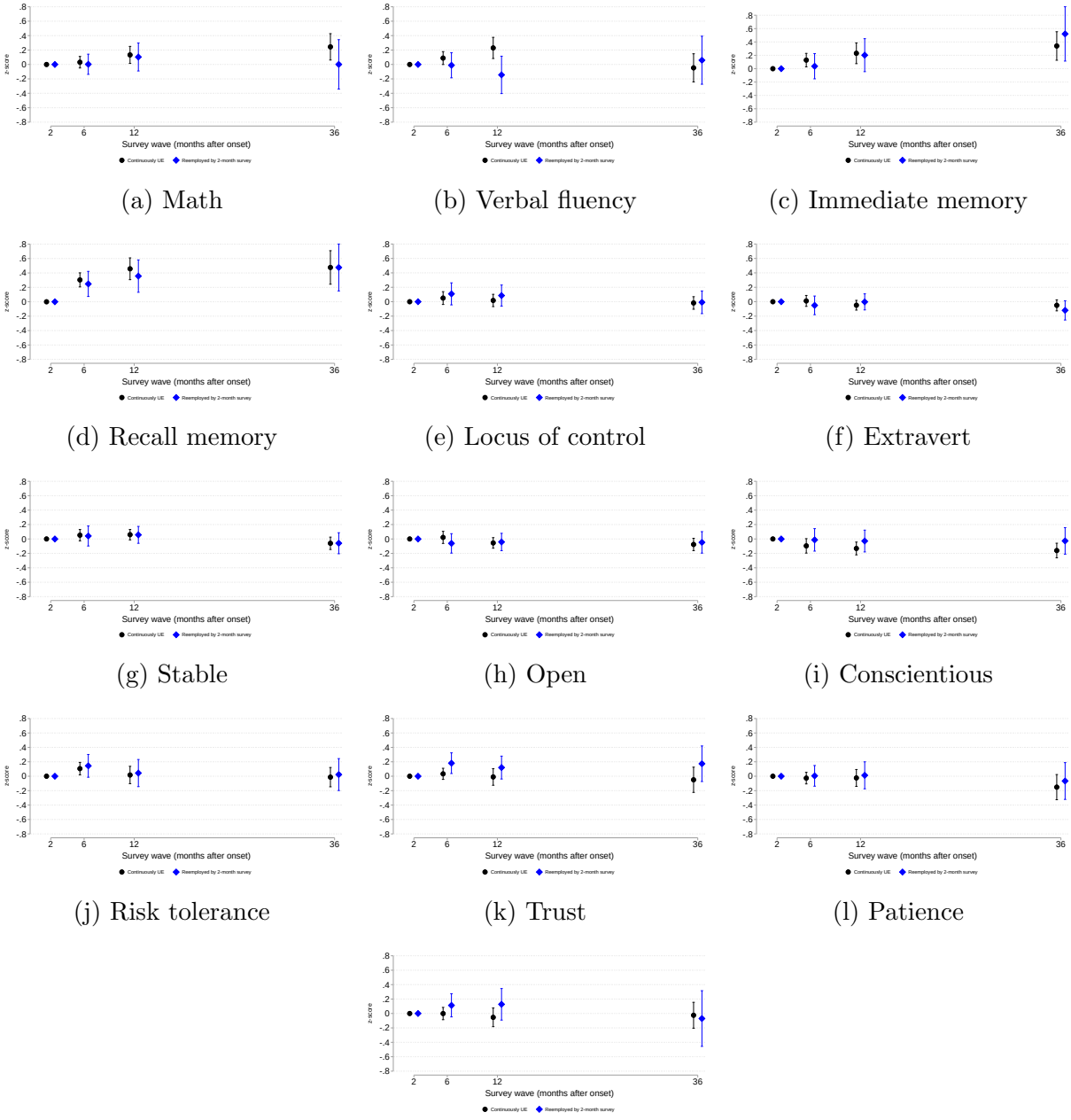
(b) Cognitive Skill Index

(c) 1st non-cognitive Skill Index

(d) 2nd non-cognitive Skill Index

Notes: This figure shows the within-person skill index change separately for the reference group (reemployed within two months and continuously employed afterward) and for the unemployed (we report the result for each individual skill items separately in Appendix Figure A.11). In all panels, we report estimates based on equation 2. The blue diamonds represent changes since the baseline for the reference group (α_τ in equation 2), while the black dots represent changes for the continuously unemployed ($\alpha_\tau + \beta_\tau$ in equation 2). The skill index is formed by predicting the prior employment spell's wages using OLS and treating survey responses as cardinal. The primary non-cognitive (Panel (c)) index includes only the Big-5 and locus of control questions, the secondary non-cognitive index includes the personality traits (Panel (d)), the cognitive skill index (Panel (b)) includes fluency, maths, and short-term recall, and the composite skill index (Panel (a)) includes all cognitive and non-cognitive questions.

Figure A.11: Evolution of Individual Skill Items Over Time for the Reference Group and for the Unemployed



(a) Math (b) Verbal fluency (c) Immediate memory

(d) Recall memory (e) Locus of control (f) Extravert

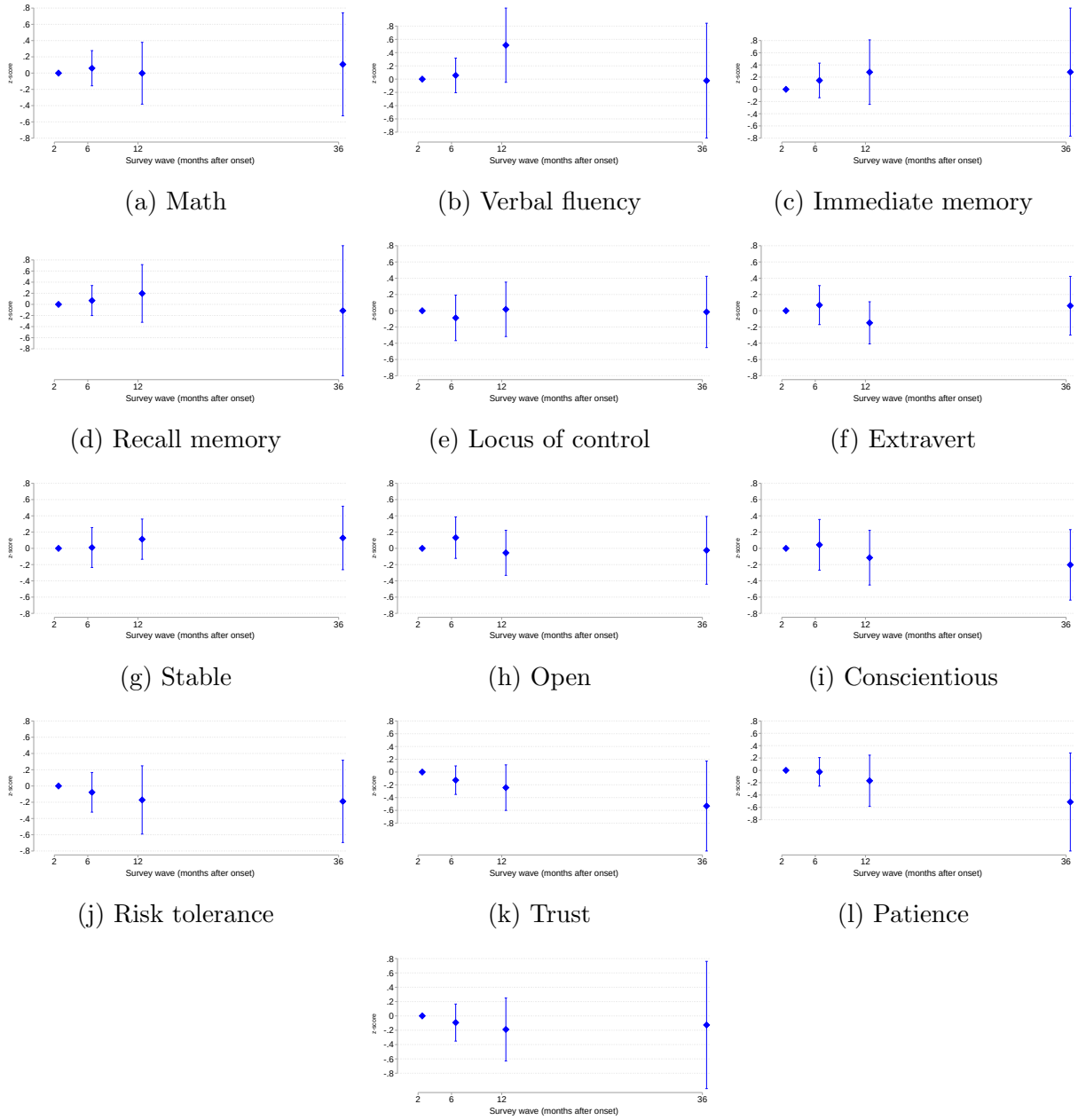
(g) Stable (h) Open (i) Conscientious

(j) Risk tolerance (k) Trust (l) Patience

(m) Reciprocity

Notes: This figure shows the within person-change for the reference group (reemployed within two months and continuously employed afterward) and for the unemployed for each individual skill items separately (we report the result for skill indices in Appendix Figure A.10). Responses are treated as cardinal and signed appropriately. When a category has multiple underlying questions, each question is first converted to a z-score and then those z-scores are averaged together. The z-score standardized is based only on the initial survey and then applied to all surveys.

Figure A.12: Evolution of Individual Skill Items Over the Unemployment Spell



(a) Math (b) Verbal fluency (c) Immediate memory

(d) Recall memory (e) Locus of control (f) Extravert

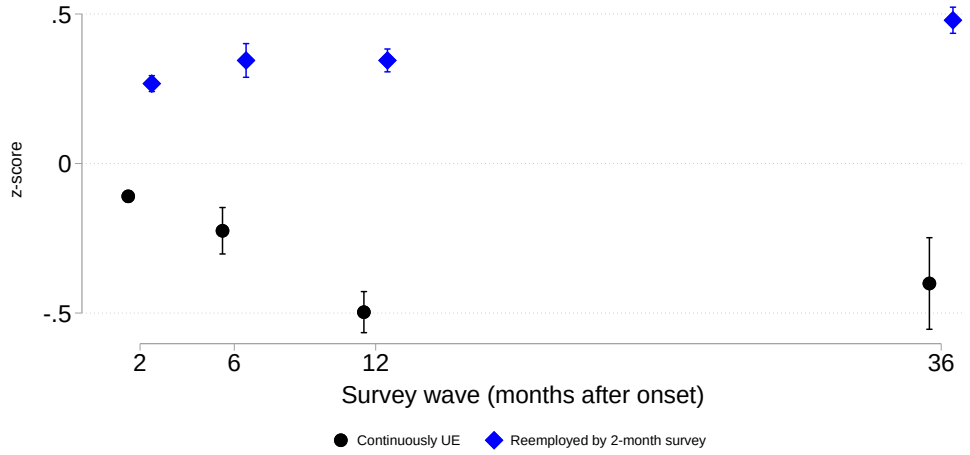
(g) Stable (h) Open (i) Conscientious

(j) Risk tolerance (k) Trust (l) Patience

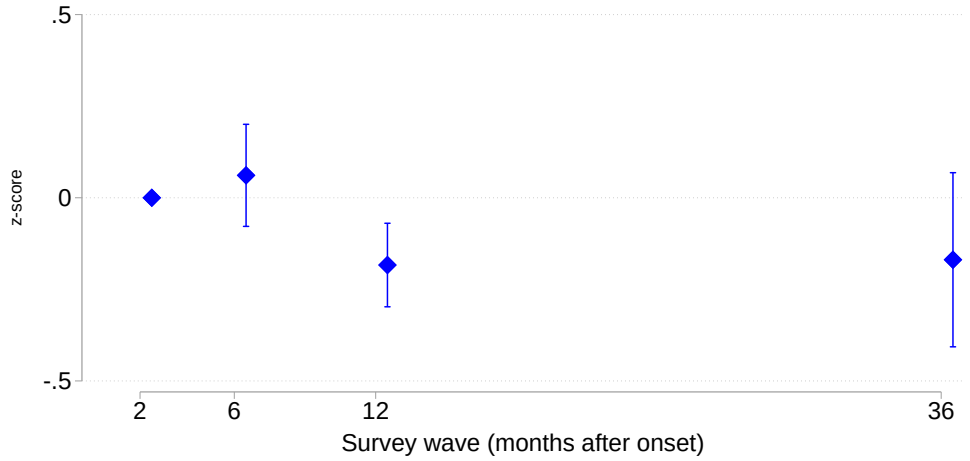
(m) Reciprocity

Notes: This figure recreates Panel (b) of Figure 3 for each individual skill items separately. We report the β_τ coefficients (along with the 95 percent confidence intervals) from equation 2. Responses are treated as cardinal and signed appropriately. When a category has multiple underlying questions, each question is first converted to a z-score and then those z-scores are averaged together. The z-score standardized is based only on the initial survey and then applied to all surveys.

Figure A.13: Evolution of Life Satisfaction over Time



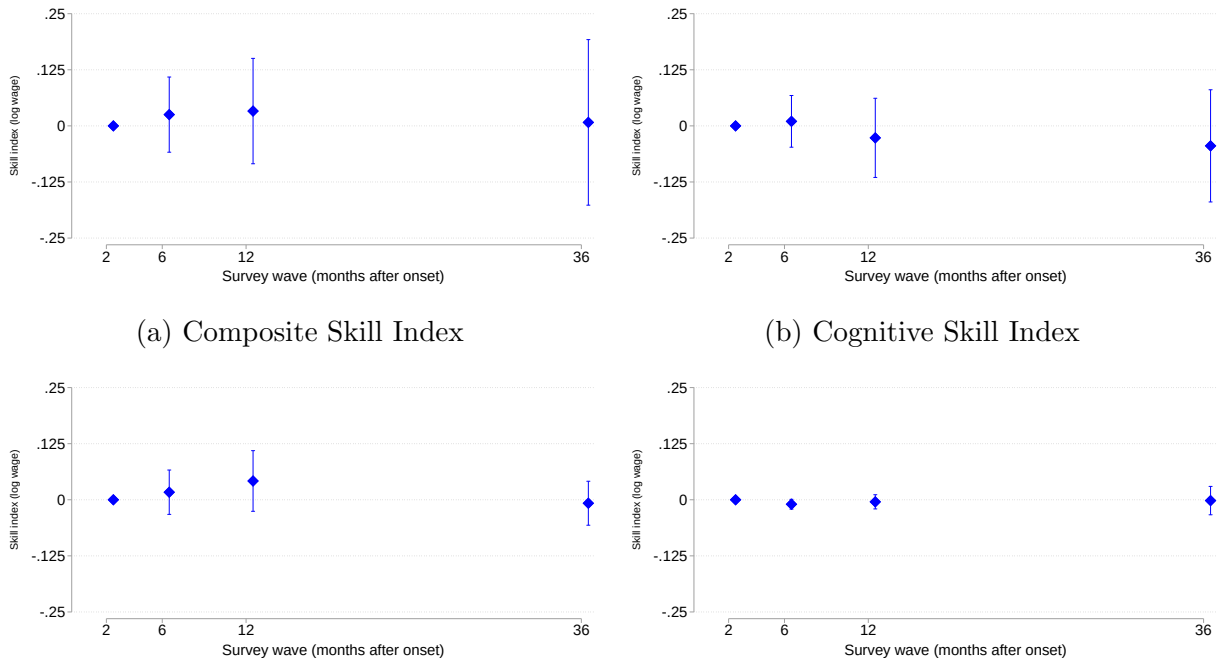
(a) Life Satisfaction over Time for the Unemployed and for the Reference Group



(b) Within-person Change in Life Satisfaction for the Unemployed (relative to the Reference Group)

Notes: This figure shows the evolution of self-reported life satisfaction over time. Panel (a) shows life satisfaction separately for the reference group (reemployed within two months and continuously employed afterward) and for the unemployed. We report the average level of life satisfaction at each survey wave by estimating equation 1. The blue diamonds represent changes since the baseline for the reference group (α_τ in equation 1), while the black dots represent changes for the continuously unemployed ($\alpha_\tau + \beta_\tau$ in equation 1). In Panel (b) we show the within-person change in life satisfaction of the unemployed relative to the employed by estimating equation 2. The blue diamonds show the estimated β_τ in equation 2. We standardize the self-reported life satisfaction based on responses to the initial survey. Due to panel response availability, unemployment duration is defined using survey responses for life satisfaction.

Figure A.14: Evolution of Individual Skill Items Over the Unemployment Spell: Restricting to Involuntary Losers of Full-time Employment



(a) Composite Skill Index

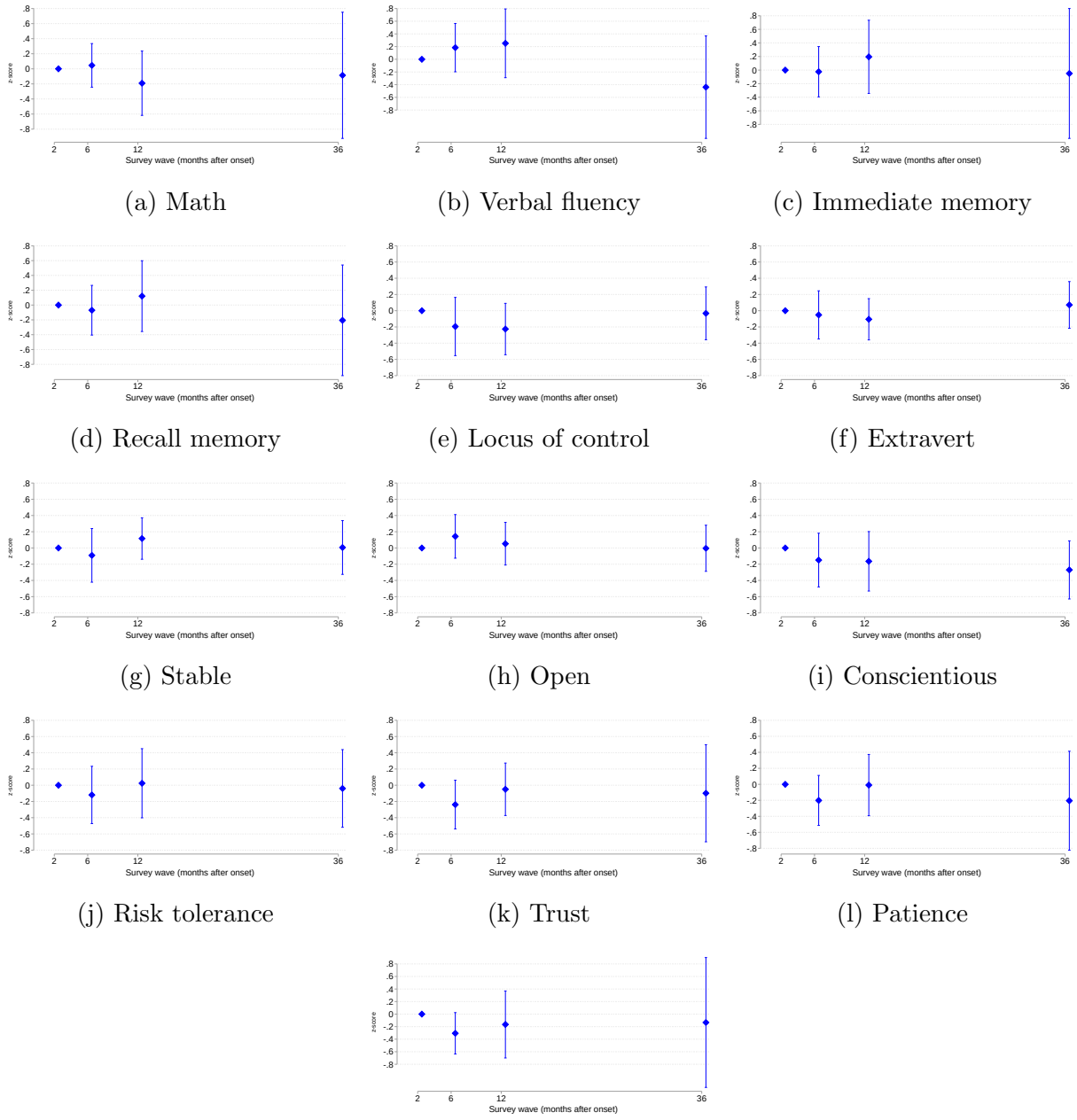
(b) Cognitive Skill Index

(c) 1st non-cognitive Skill Index

(d) 2nd non-cognitive Skill Index

Notes: This figure recreates Panel (b) of Figure 3 but restricts respondents who involuntarily lost a full-time job. In all panels, we report estimates with within-person fixed effects (the β_τ coefficient from equation 2). The skill index is formed by predicting the prior employment spell's wages using OLS and treating survey responses as cardinal. The primary non-cognitive (Panel (c)) index includes only the Big-5 and locus of control questions, the secondary non-cognitive index includes the personality traits (Panel (d)), the cognitive skill index (Panel (b)) includes fluency, maths, and short-term recall, and the composite skill index (Panel (a)) includes all cognitive and non-cognitive questions. The y-axis scale represents approximately $\pm 1\sigma$ of the log predicted wages using the composite skills index as measured at baseline, which is 0.22.

Figure A.15: Evolution of Individual Skill Items Over the Unemployment Spell: Restricting to Involuntary Losers of Full-time Employment



(a) Math (b) Verbal fluency (c) Immediate memory

(d) Recall memory (e) Locus of control (f) Extravert

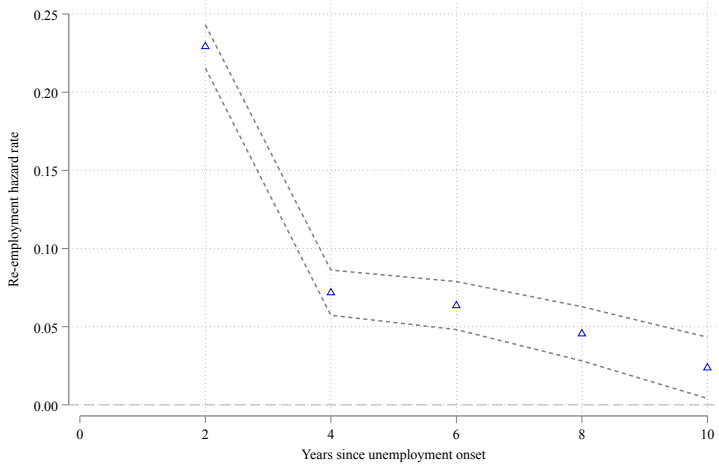
(g) Stable (h) Open (i) Conscientious

(j) Risk tolerance (k) Trust (l) Patience

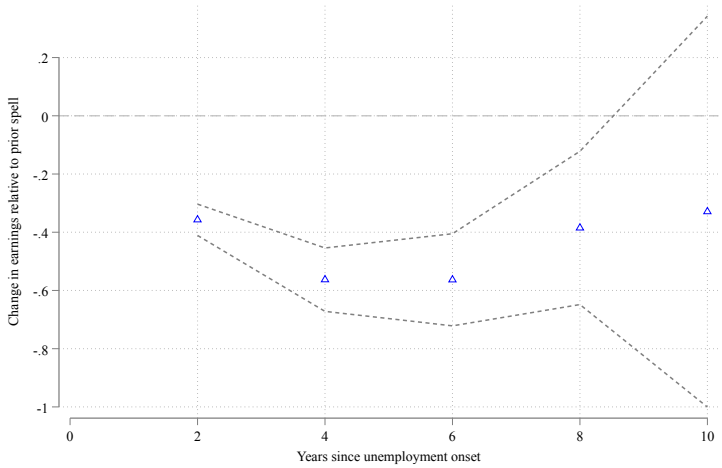
(m) Reciprocity

Notes: This figure recreates Panel (b) of Figure 3, restricting to respondents who involuntarily lost a full-time job. We report the result for each individual skill item separately (for skill indices see Appendix Figure A.15). In all panels, we report estimates with within-person fixed effects (the β_τ coefficient from equation 2). Responses are treated as cardinal and signed appropriately. When a category has multiple underlying questions, each question is first converted to a z-score and then those z-scores are averaged together. The z-score standardized is based only on the initial survey and then applied to all surveys.

Figure A.16: Reemployment Hazards and Reemployment Wages over the Unemployment Spell Among Older American Unemployed



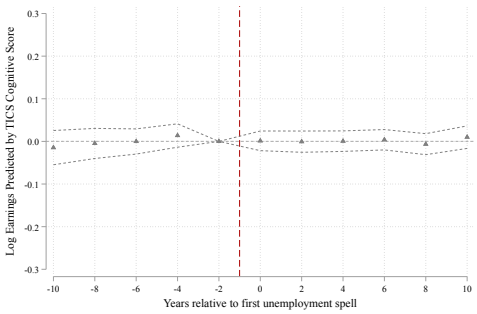
(a) Reemployment Hazard Rates



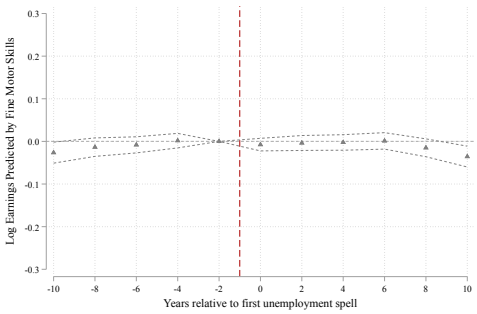
(b) Reemployment Earnings

Notes: Panel (a) plots the reemployment hazard rates – the probability of finding a job conditional on being unemployed two years before. Panel (b) plots the reemployment earnings – the share difference between earnings upon reemployment (conditional on finding a job) and earnings in the previous employment spell. In both panels, we use the HRS. The dashed lines show the 95% confidence intervals around the estimates.

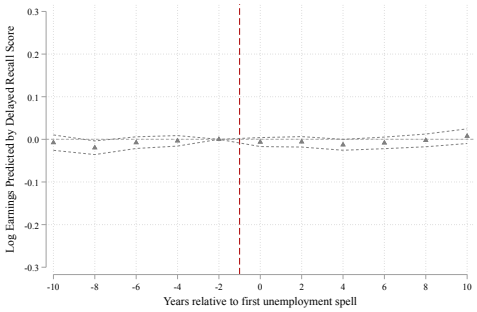
Figure A.17: Within-Person Skill Changes around Unemployment Among Older American Workers: Individual Skill Items Measured as Predicted Log Earnings



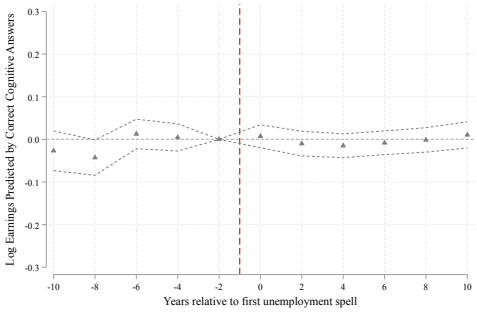
(a) Interview for Cognitive Status



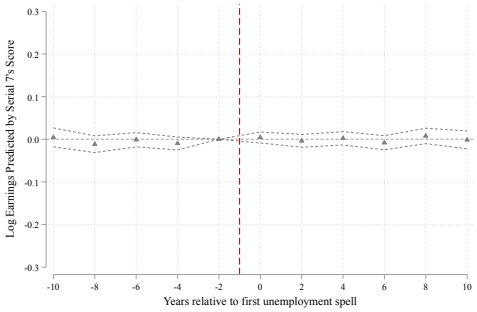
(b) Fine Motor Skills



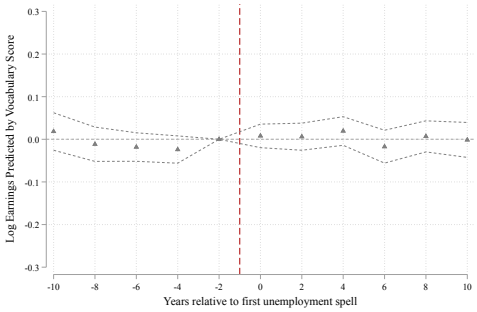
(c) Memory Recall



(d) Cognitive Total



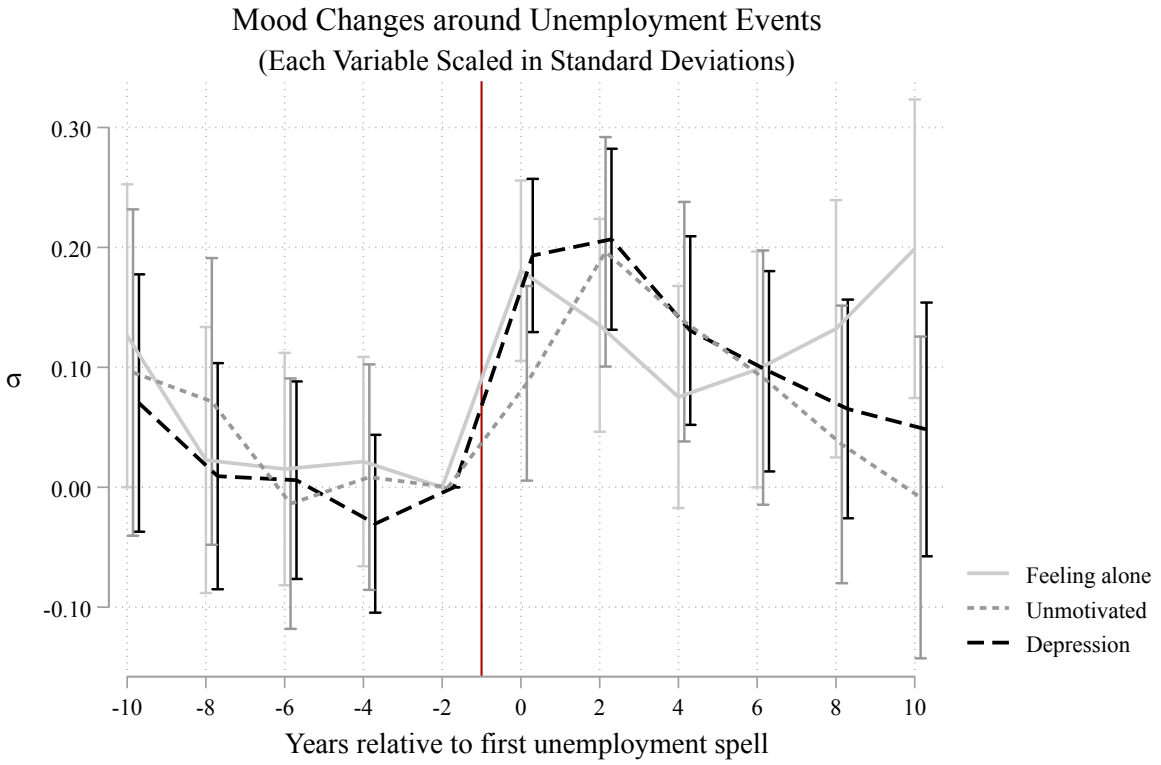
(e) Simple Math



(f) Vocabulary

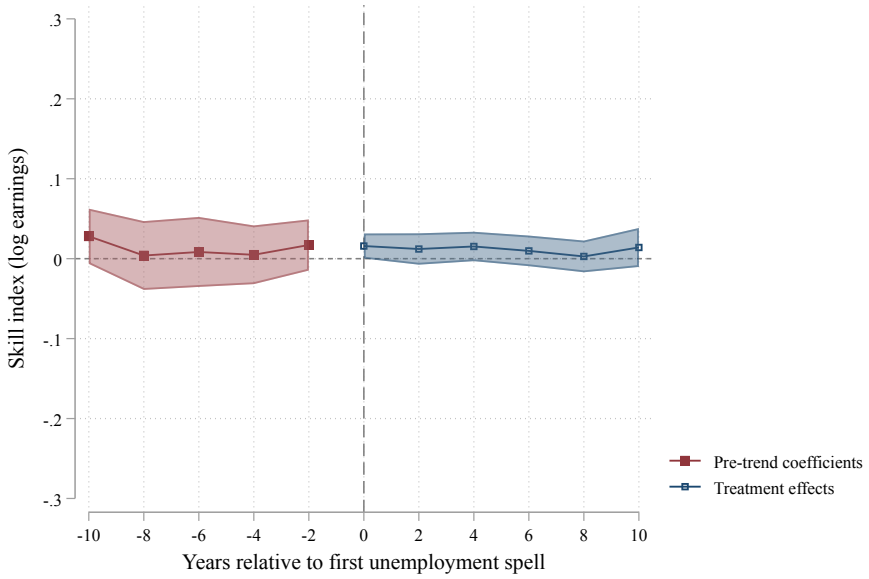
Notes: This figure shows the within-person change in skills around unemployment separately for individual skill items (see Figure 4 for the composite skill index). Event time zero shows the first transition from employment to unemployment for each worker in the survey (HRS). We exclude observations after unemployment in which the worker regains employment to make sure that the post-unemployment effects reflect the skills of those who are continuously unemployed. In the regression, we control for worker age (fully saturated) and person effects. Skills are scaled by their predictive power of pre-unemployment log earnings, where is OLS used as a prediction model.

Figure A.18: Within-Person Mood Changes around Unemployment Among Older American Workers

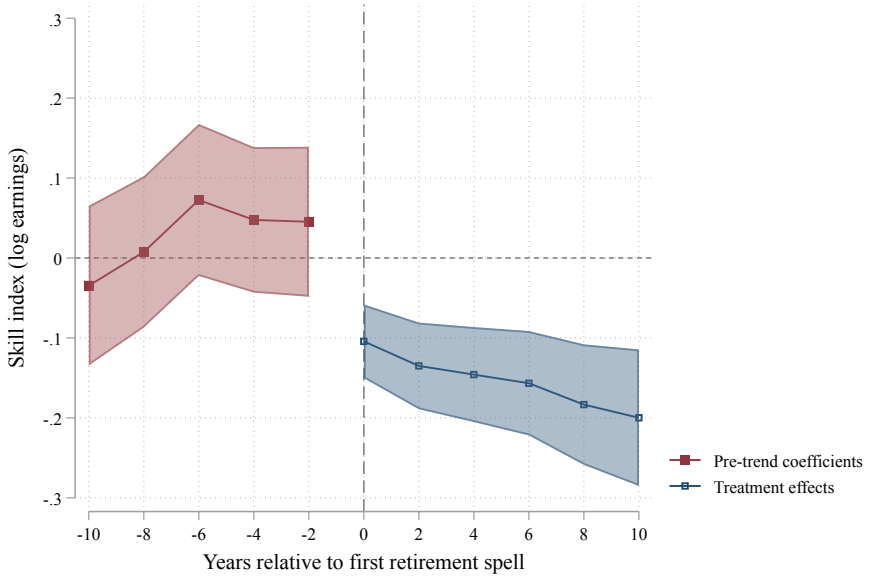


Notes: This figure shows the within-person change in mood among older American workers. Event time zero shows the first transition from employment to unemployment for each worker in the survey (HRS). We exclude observations after unemployment in which the worker regains employment to make sure that the post-unemployment effects reflect the skills of those who are continuously unemployed. In the regression, we control for worker age (fully saturated), person effects, and time effects. Each well-being variable measured in z-scores. A positive increase in mood (feeling alone, unmotivated, depression) is associated with a decline in well-being.

Figure A.19: Within-Person Skills Changes around Unemployment and Retirement Among Older American Workers: Applying Borusyak, Jaravel and Spiess (2021)



(a) Unemployment Events



(b) Retirement Events

Notes: This figure reproduces Figure 4 using the event study specification from Borusyak, Jaravel and Spiess (2021). Event time zero shows the first transition from employment to unemployment (retirement) for each worker in the survey (HRS). In Panel (a), we exclude observations after unemployment in which the worker regains employment to make sure that the post-unemployment effects reflect the skills of those who are continuously unemployed. In the regression, we control for worker age (fully saturated), person effects, and time effects. The skill index is formed by predicting the employed worker's earnings using OLS.

Appendix B Validating Administrative Unemployment Duration with Survey-Reported Employment

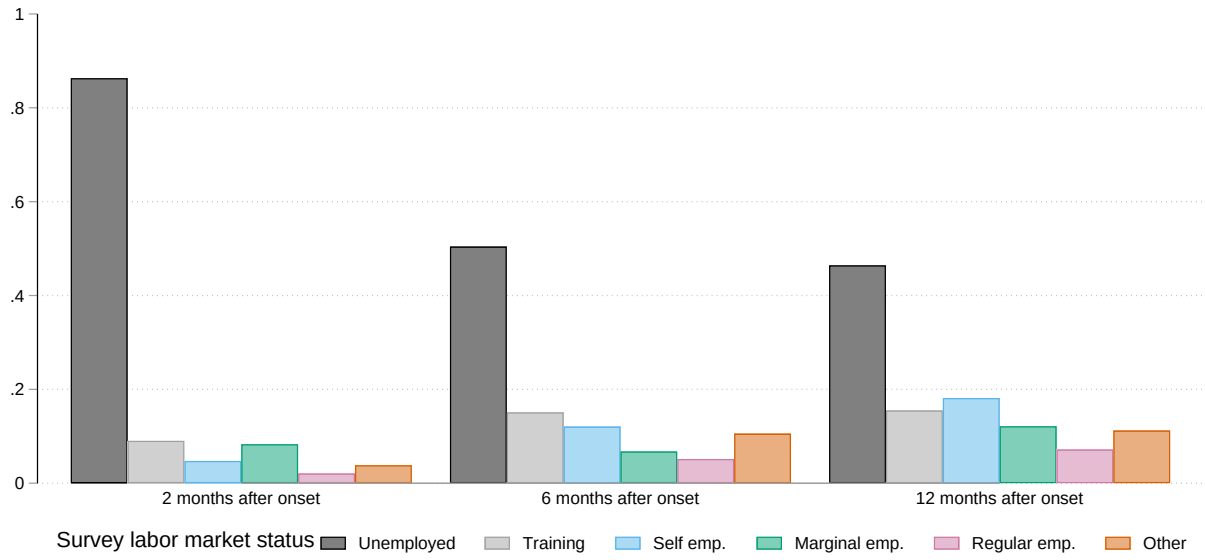
A novel feature of our data is that we observe both self-reported employment status and employment status in the social security records. In some cases, there is a discrepancy between the two measures. We demonstrate this in Appendix Figure B.1, which shows the self-reported employment status of individuals who are unemployed (or not marginally employed) according to the administrative data in the month 2, 6 and 12 survey waves.[1]. A majority—but not all—of these individuals identify as unemployed or marginally employed. This is more relevant later on in the unemployment spell. By month 12, 55% of unemployed or marginally employed individuals in the administrative data self-report the same status. The rest are a mix of activities: almost 20% are self-employed, 10% are in training, 5% are in regular activities and 10% are in other-category (family care, homemaking, illness/handicap, extended holiday).

We confirm the robustness of our main results using a narrower definition of unemployment based on the combination of survey and administrative data. Rather than viewing unemployment as the absence of non-marginal employment, we define it as the absence of all forms of employment and training in the survey or administrative data. This conservatively zooms in on those who are plausibly at the highest risk of skill depreciation while unemployed. When controlling for survey wave effects, however, we maintain the reference group of the quickly reemployed based on non-marginal employment in the survey data. This conservatively compares the unemployed to those who are most likely to be building skills during employment.

In Appendix Figure B.2 and in Appendix Figure B.3 we replicate our main findings in this more restricted sample. The estimated changes in skill throughout the unemployment spell are almost identical though the estimates are somewhat noisier. These findings highlight that our main conclusions about the lack of skill depreciation over the unemployment fact are not driven by measurement errors in reemployment status.

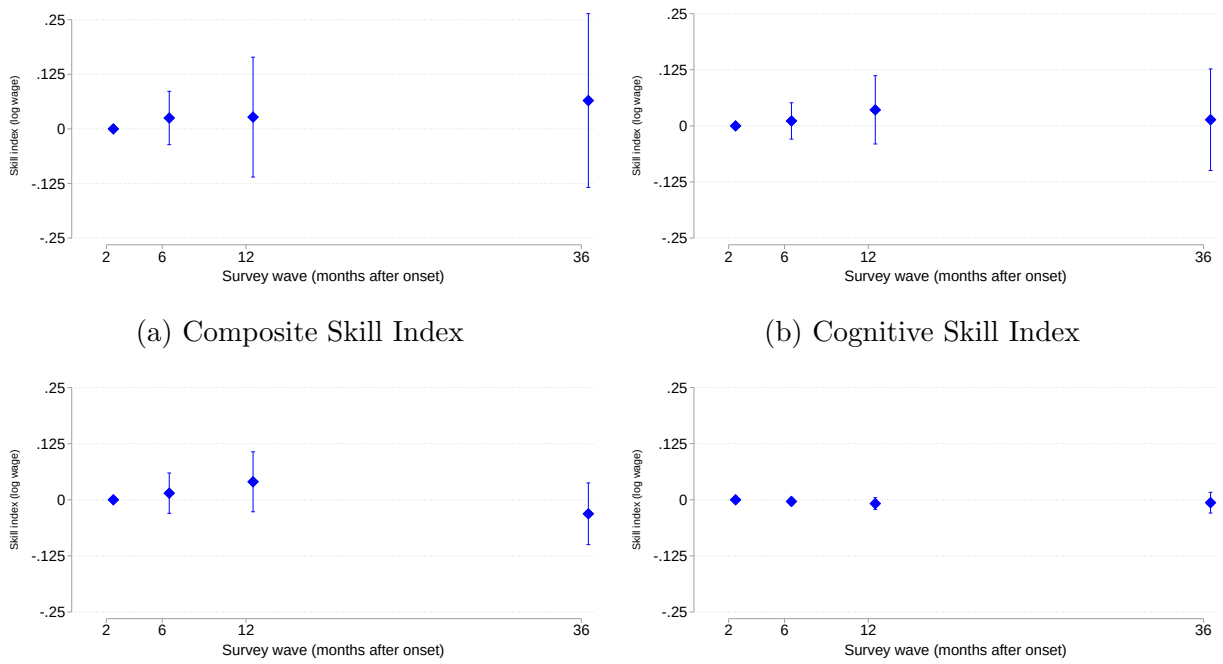
[1]We observe administrative records for only 30 months after unemployment onset, so we are not able to complete this exercise for the survey 36 months after unemployment onset. In the main analysis, as we explained in Section 2.2, we define labor market status at thirty-six months using the observed labor market status at thirty months.

Figure B.1: Distribution of Self-Reported Status Among Unemployed in the Administrative Data



Notes: The sample at each survey wave corresponds to those in the administrative data without contemporaneous non-marginal employment, which is our benchmark definition of unemployment. Each stacked bar is the share of respondents reporting being engaged in the labeled labor force activity. The "other" category aggregates family care, homemaking, illness/handicap, extended holiday, and other reasons. Respondents could report multiple activities in 2-month (wave 1) and 12-month (wave 3) surveys.

Figure B.2: Relative Changes in Skill Indices Over the Unemployment Spell: Combined Survey and Administrative Definition of Unemployment



(a) Composite Skill Index

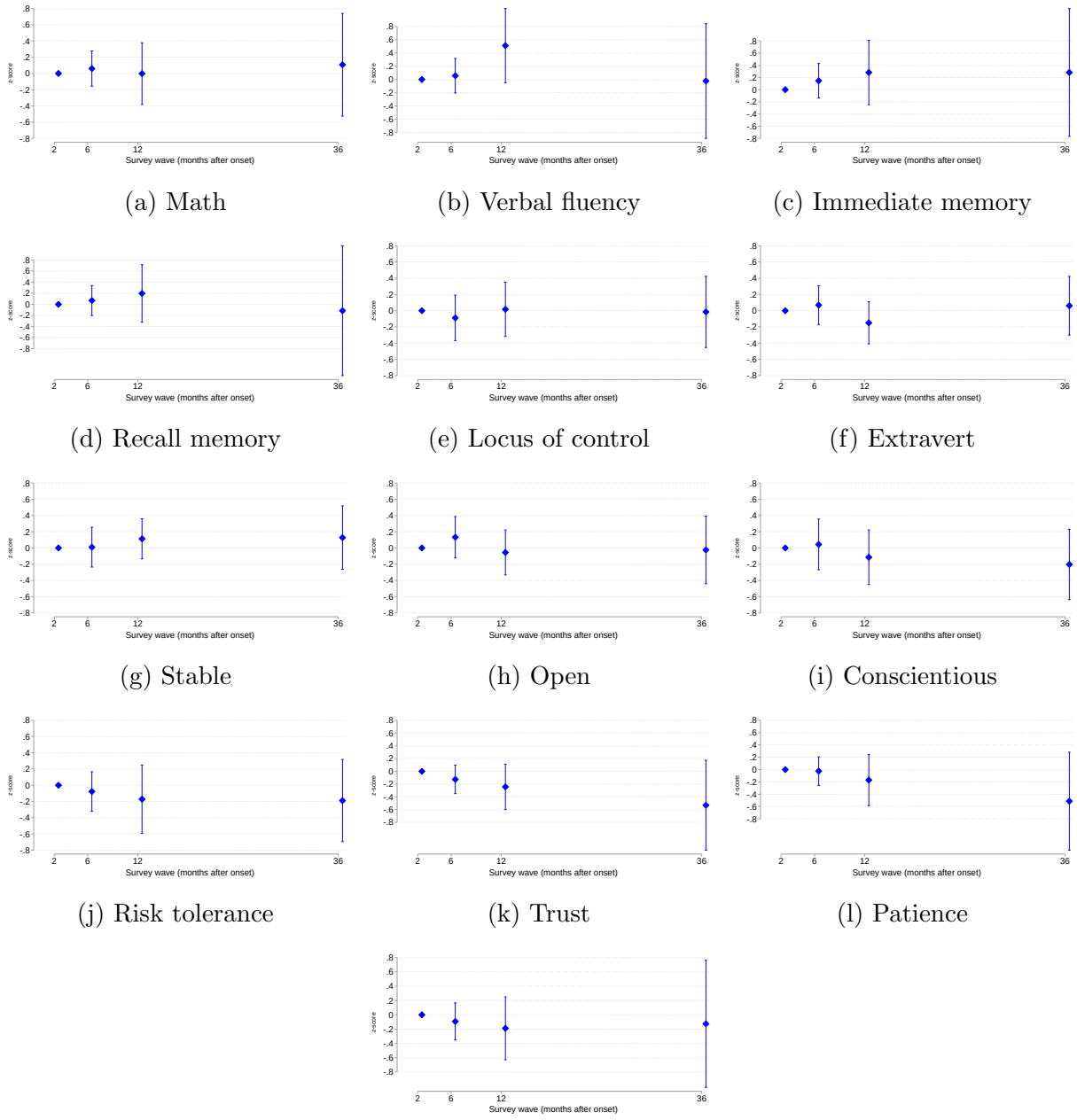
(b) Cognitive Skill Index

(c) 1st non-cognitive Skill Index

(d) 2nd non-cognitive Skill Index

Notes: This figure recreates Panel (b) of Figure 3 but restricts to the definition of unemployment as the absence of all types of employment and training in both survey and administrative data. In all panels, we report estimates with within-person fixed effects (the β_τ coefficient from equation 2). The skill index is formed by predicting the prior employment spell's wages using OLS and treating survey responses as cardinal. The primary non-cognitive (Panel (c)) index includes only the Big-5 and locus of control questions, the secondary non-cognitive index includes the personality traits (Panel (d)), the cognitive skill index (Panel (b)) includes fluency, maths, and short-term recall, and the composite skill index (Panel (a)) includes all cognitive and non-cognitive questions. The y-axis scale represents approximately $\pm 1\sigma$ of the log predicted wages using the composite skills index as measured at baseline, which is 0.22.

Figure B.3: Evolution of Individual Skill Items Over the Unemployment Spell: Combined Survey and Administrative Definition of Unemployment



(a) Math (b) Verbal fluency (c) Immediate memory

(d) Recall memory (e) Locus of control (f) Extravert

(g) Stable (h) Open (i) Conscientious

(j) Risk tolerance (k) Trust (l) Patience

(m) Reciprocity

Notes: This figure recreates Panel (b) of Figure 3 and Appendix Figure A.12 for each individual skill items separately, restricting to the definition of unemployment as the absence of all types of employment and training in both survey and administrative data. We report the β_τ coefficients (along with the 95 percent confidence intervals) from equation 2. Responses are treated as cardinal and signed appropriately. When a category has multiple underlying questions, each question is first converted to a z-score and then those z-scores are averaged together. The standardized z-score is based only on the initial survey and then applied to all surveys.