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Happy Birthday Bob!

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How Do Pre-Retirement Job Characteristics Shape One’s Post-Retirement Cognitive Performance?

Discussion by

Michael D. Hurd
RAND, NBER, NETSPAR, SMU

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Interested in the relationship between retirement and cognition

But “Treatment effects” suggests causality

Treatment is retirement

Probability of treatment: Propensity score p(X)

Confounders: variables that affect the probability of treatment (retirement) and the outcome (cognition)

Required assumption: X includes all confounders.

“

Framework of regression

$$cog = \beta \mathrm{Re}t + X_1\beta_1 + X_2\beta_2 + u$$
$$\mathrm{Re}t = \gamma cog + X_2\gamma_2 + X_3\gamma_3 + v$$

$\gamma = 0$
Data on X_2
(If not $cog = \beta \mathrm{Re}t + X_1\beta_1 + \varepsilon$ and Ret correlated with ε.)
(Because studying Δcog would want restrictions on time series properties of u and v)

It was because of the suspicion that $\gamma \neq 0$ and that X_2 not fully observable that instrumental variables was used by Rohwedder and Willis (following Perleman).

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What are patterns in data that lend (or subtract) plausibility to assumptions of this paper?

“

Scaling of scores, age 51-68

	Cognition scores
<high school	12.4
high school	15.5
some college	16.6
college graduate or more	18.0

<u>Transitions</u>

Work-to-work

Work-to-not work

Not work-to-work

Not work-to-not work

Cognitive scores before and after transition

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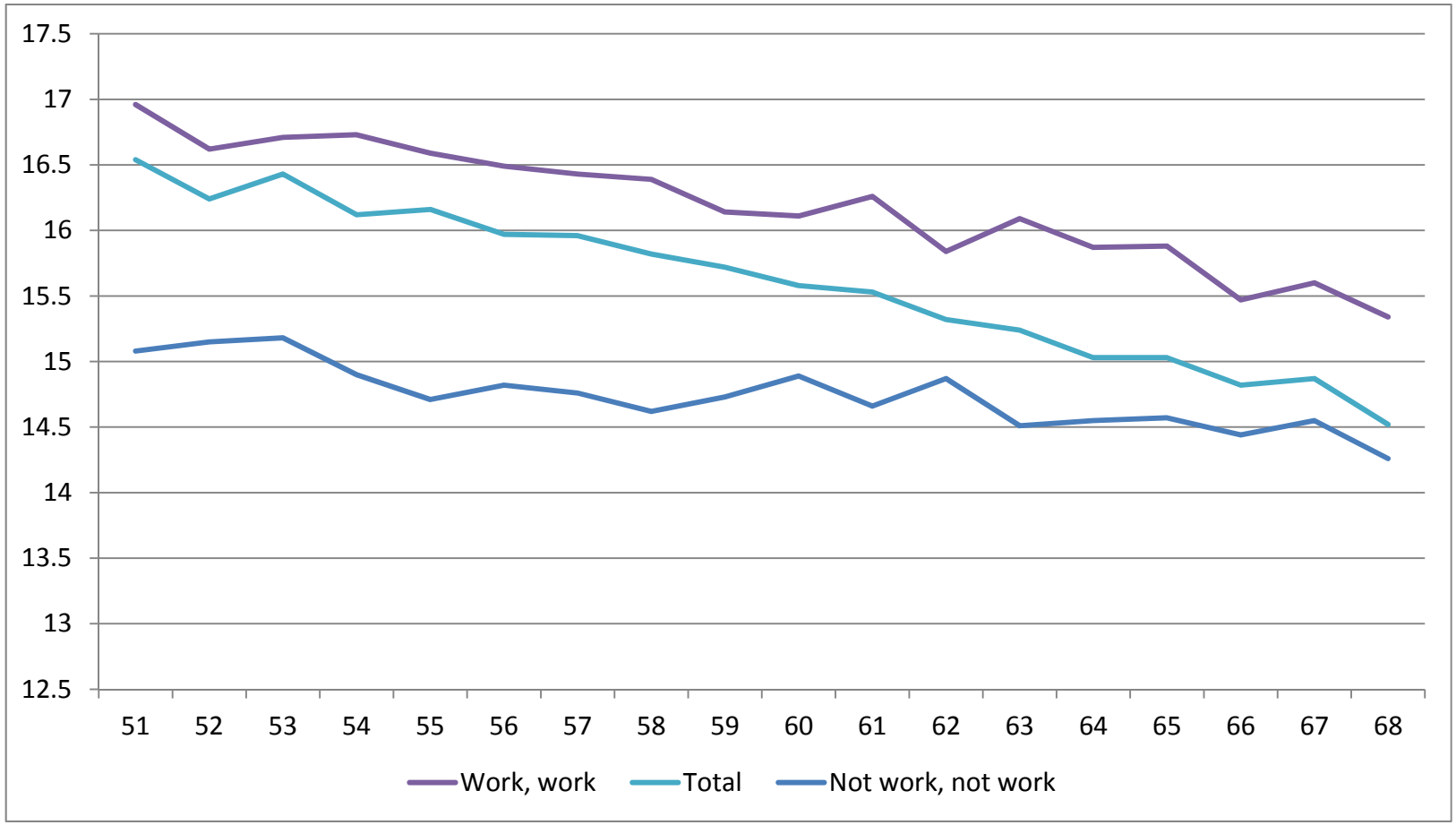
Cognitive scores by two-wave labor force transition. Scores prior to transition. Those not working have 2 points lower



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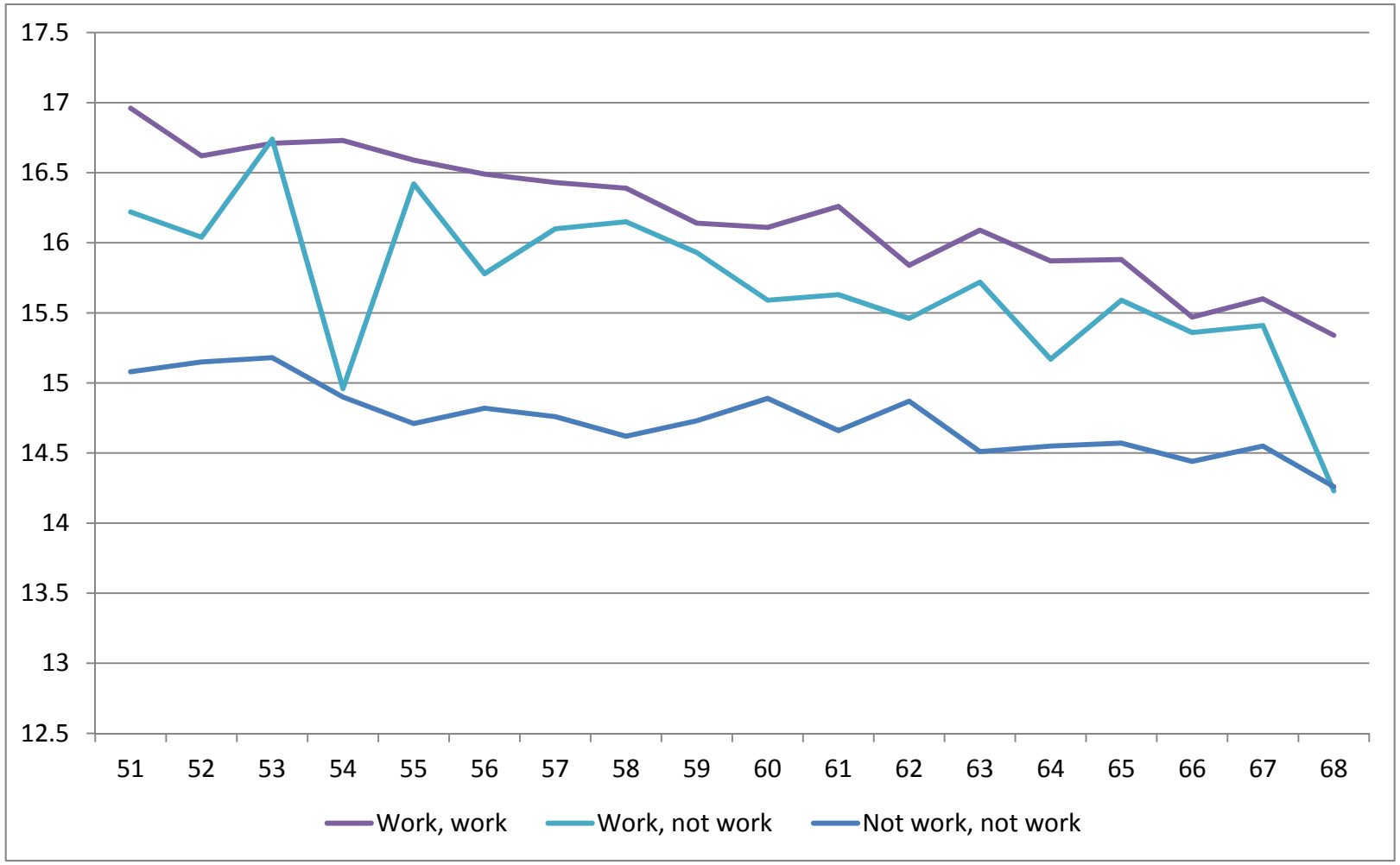
Cognitive scores by two-wave labor force transitions. Scores prior to transition. Work-to-work versus work-to-not work



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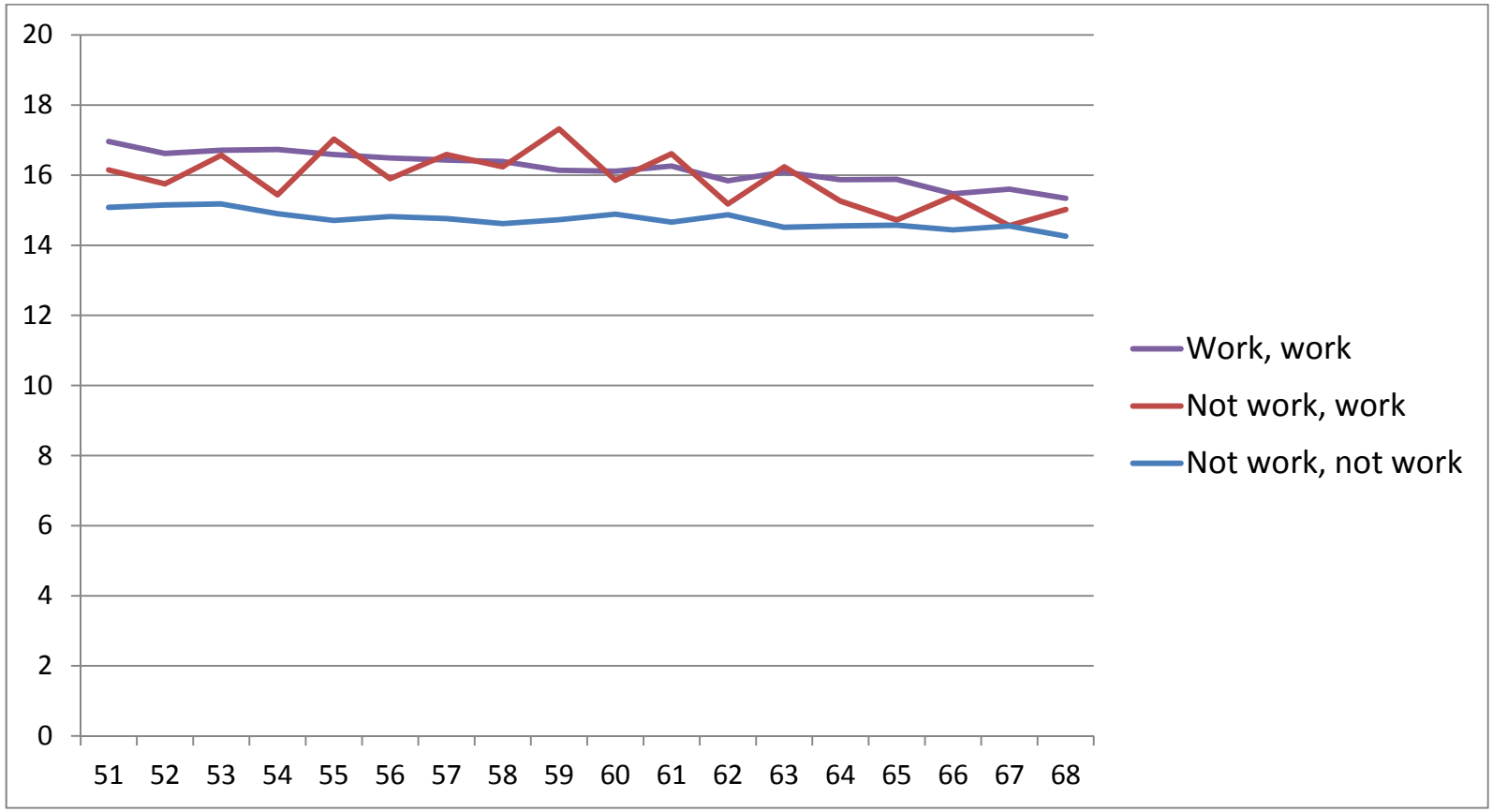
Cognitive scores by two-wave labor force transitions. Scores prior to transition. Not work-to-work



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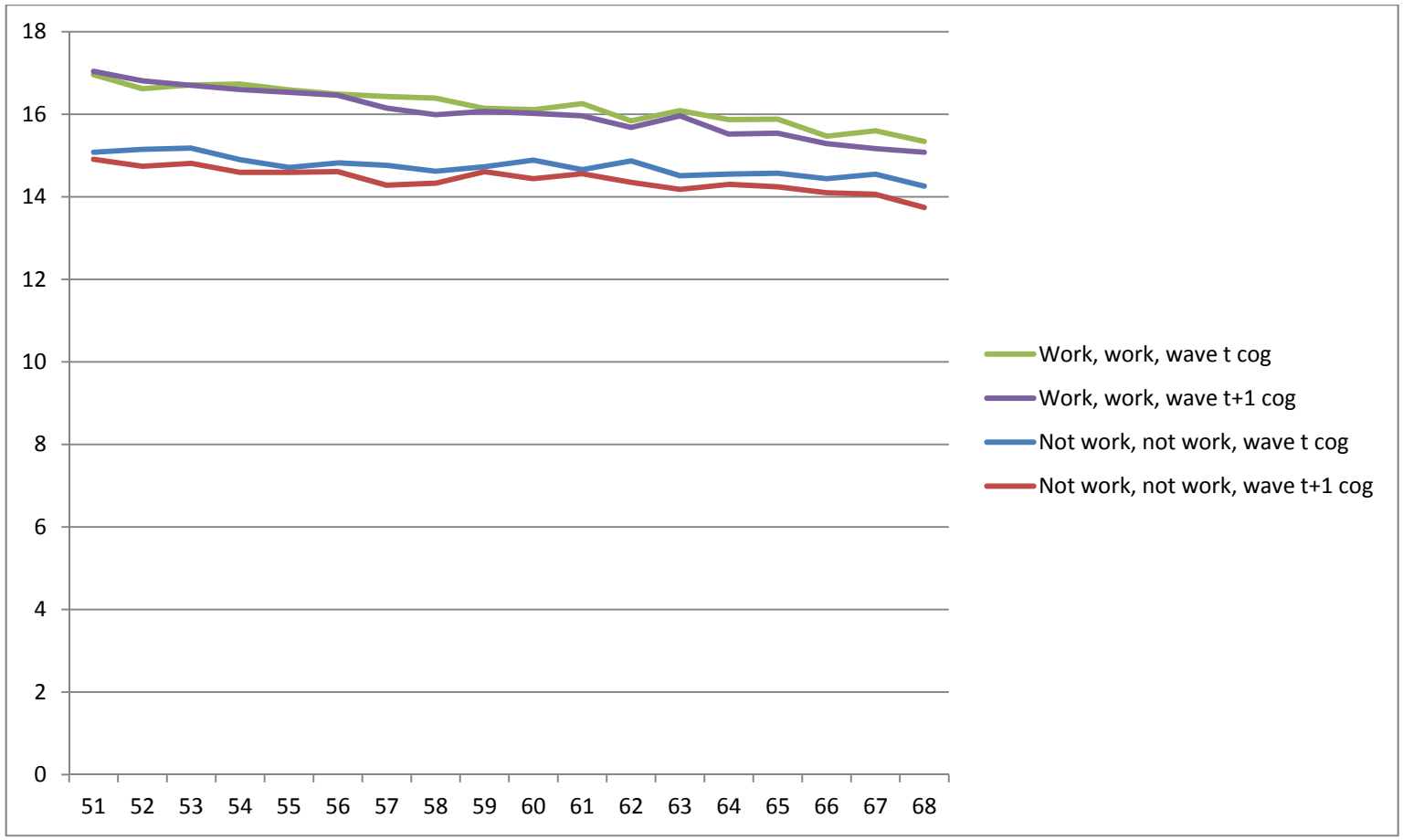
Cognitive scores by two-wave labor force transitions. Scores before and after transition. Work-to-work versus not work-to-not work



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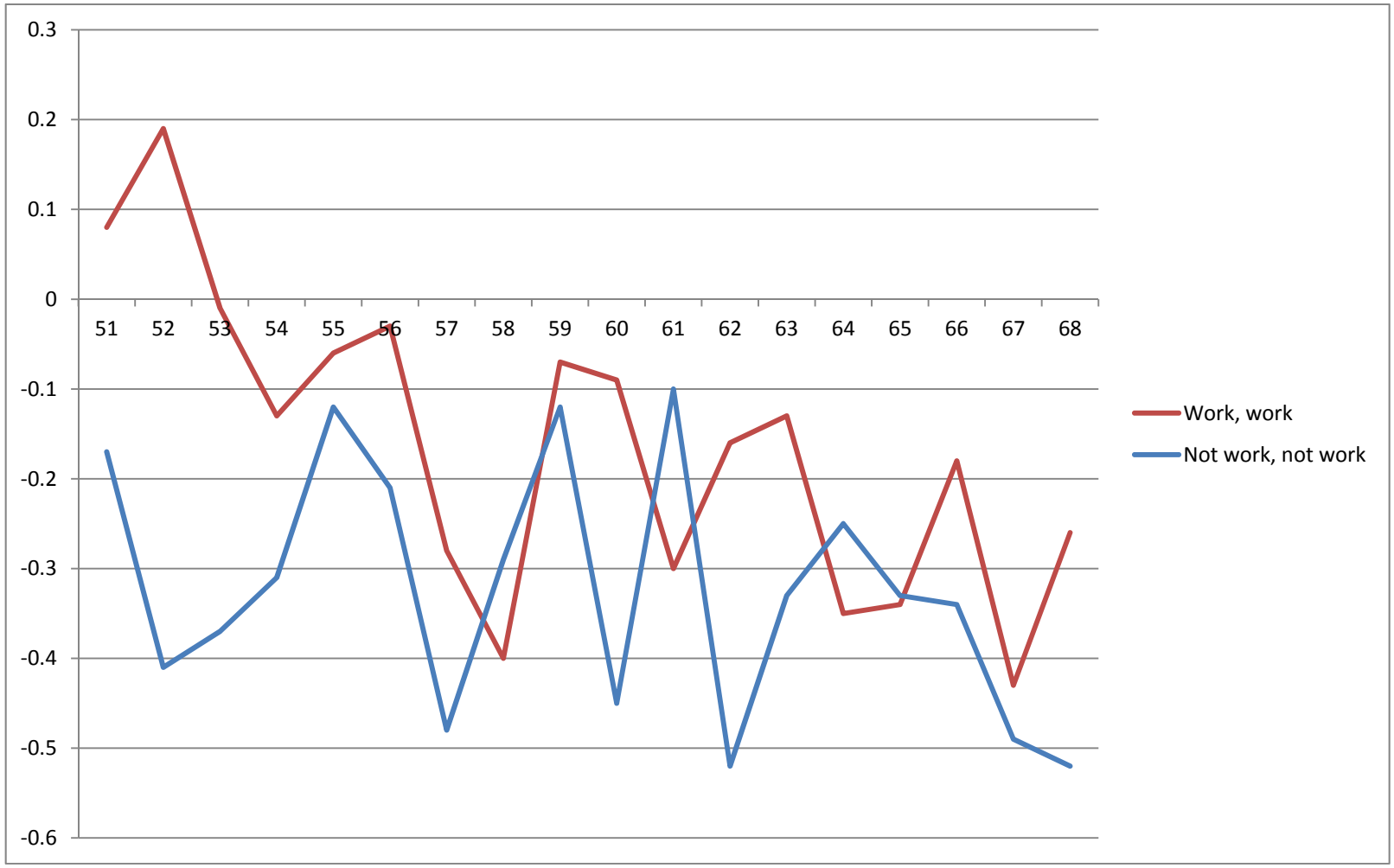
Change in scores by labor force transition. Work-to-work versus not work-to-not work



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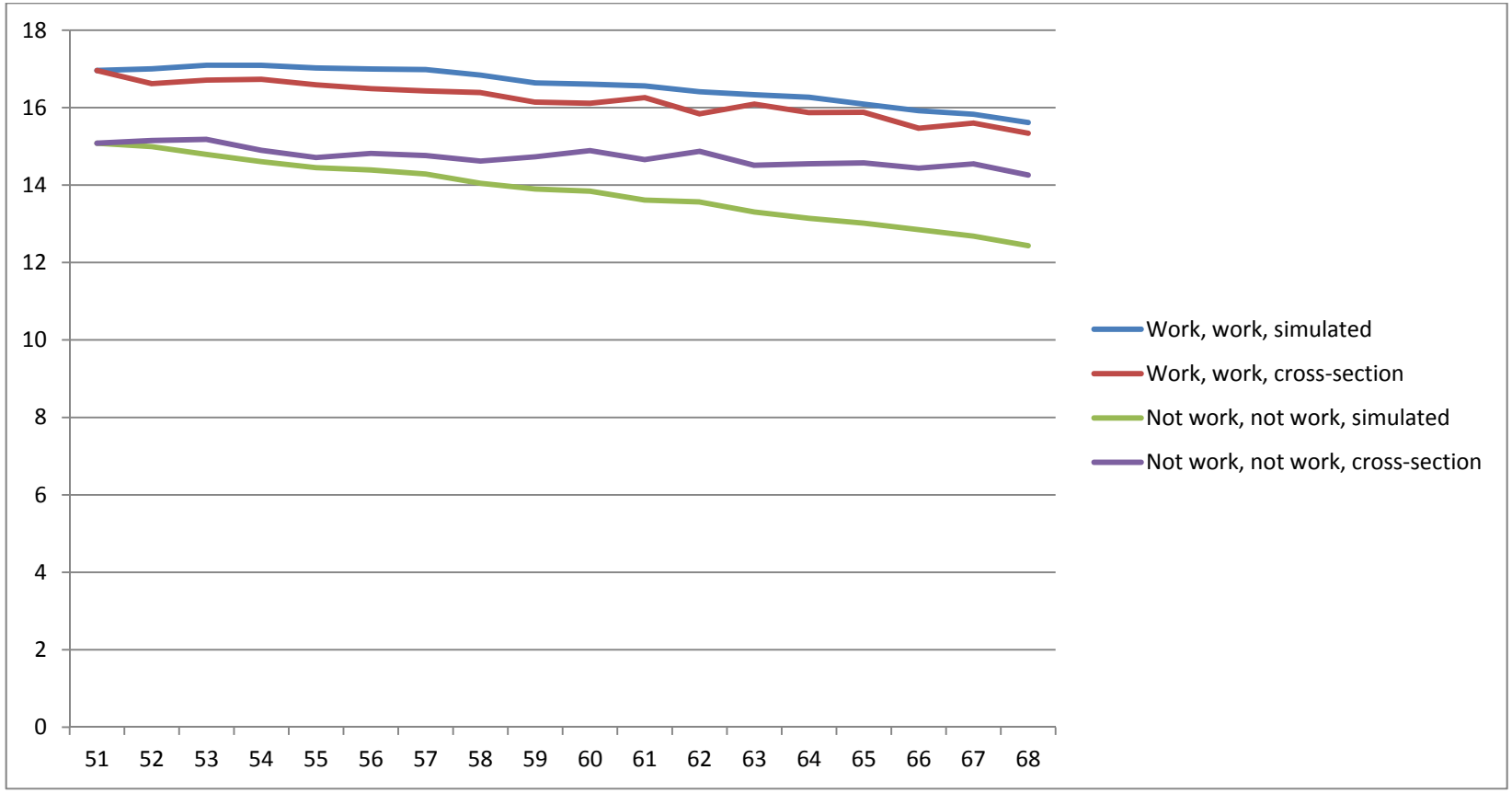
Simulated and cross-section scores



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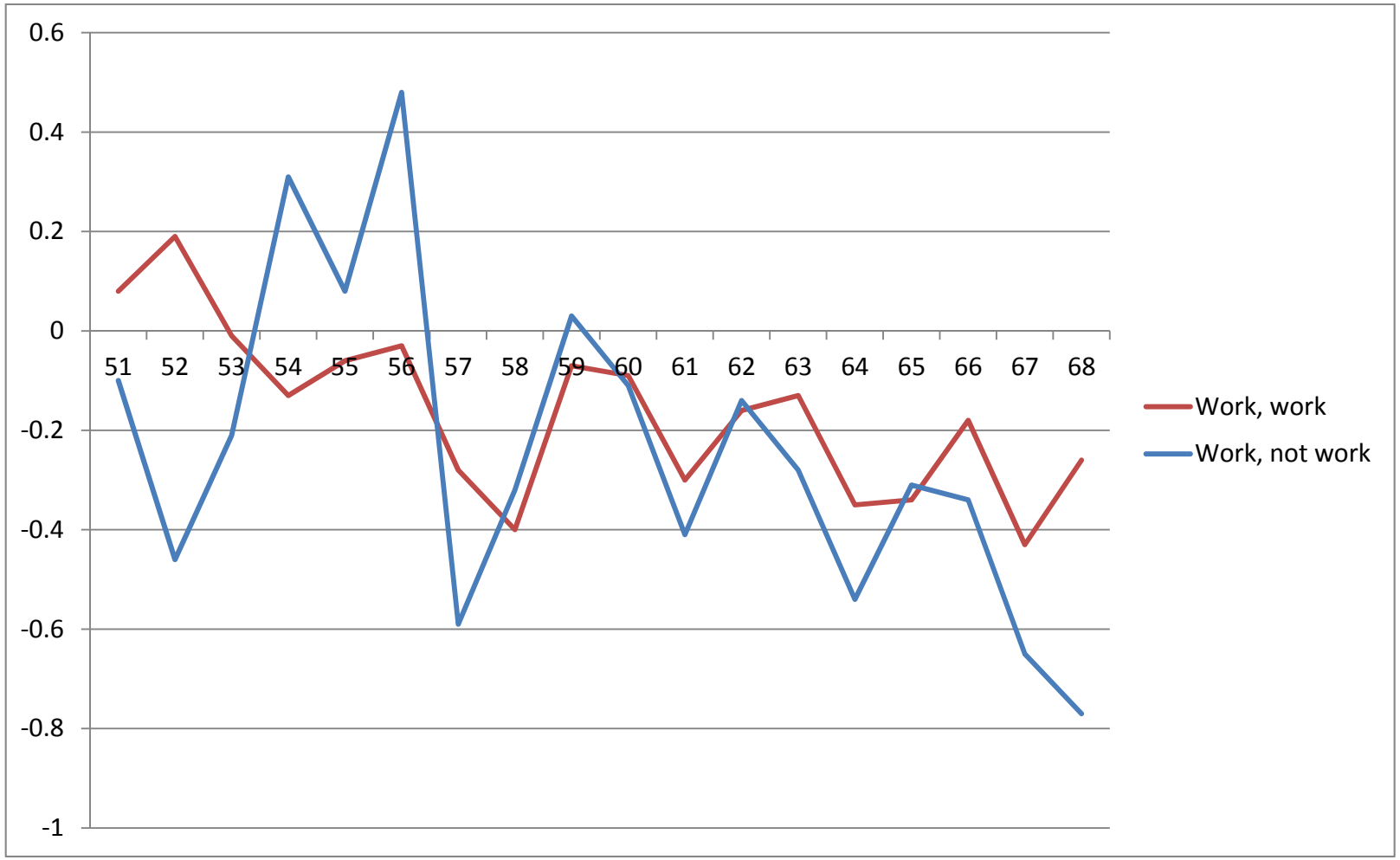
Change in scores by labor force transition: work-to-work versus work-to-not work



Work-to-not work: -0.34; work-to-work: -0.15

“

Summary

Not-work to not-work

- Lower levels
- Greater decline

than work-to-work

Work to not-work

- Lower levels while working
- Slightly greater decline

than work-to-work

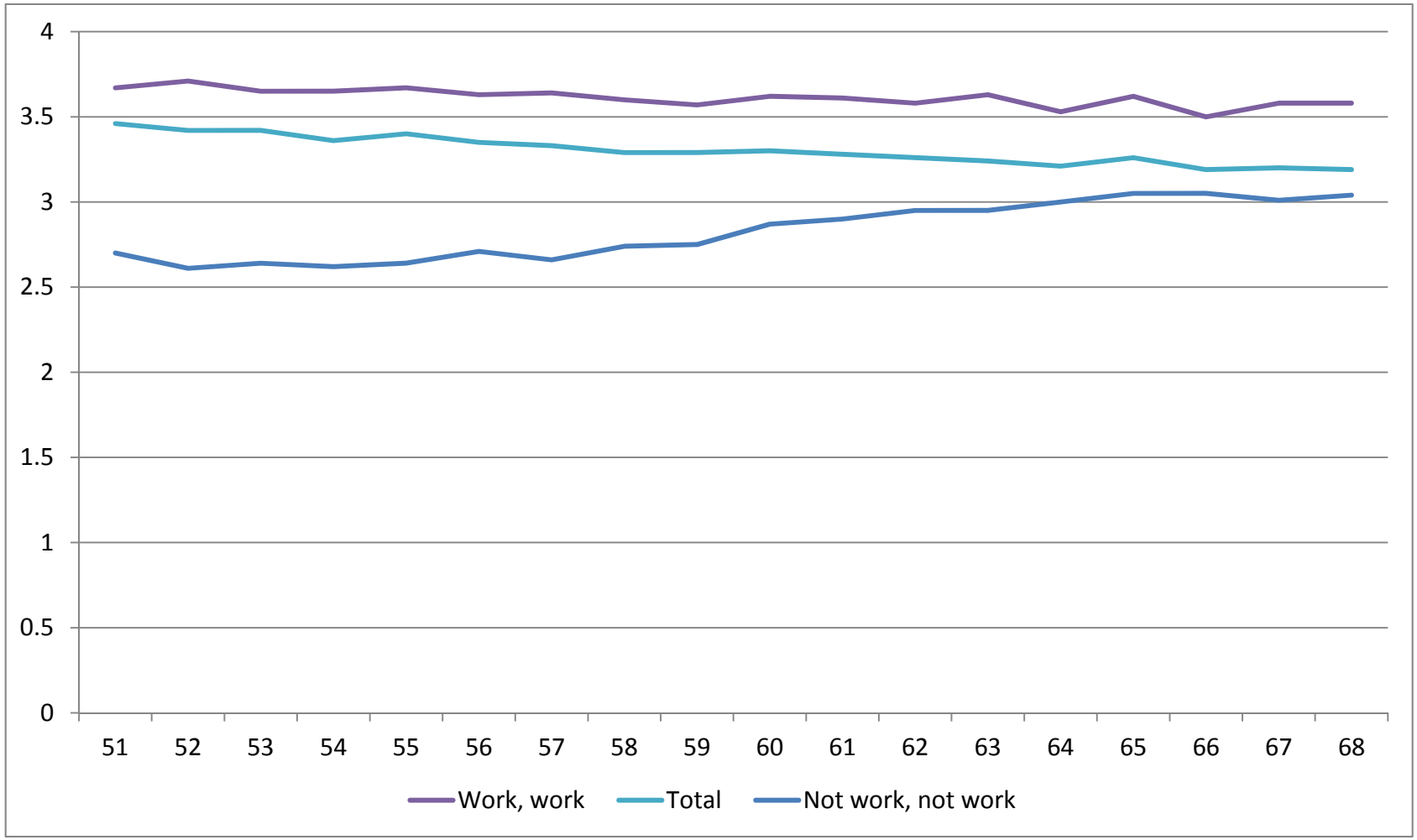
“

Corresponding health changes

Self-rated health
1 = poor
2 = fair
3 = good
4 = very good
5 = excellent

“

Self-assessed health score by labor force transition. Score prior to transition



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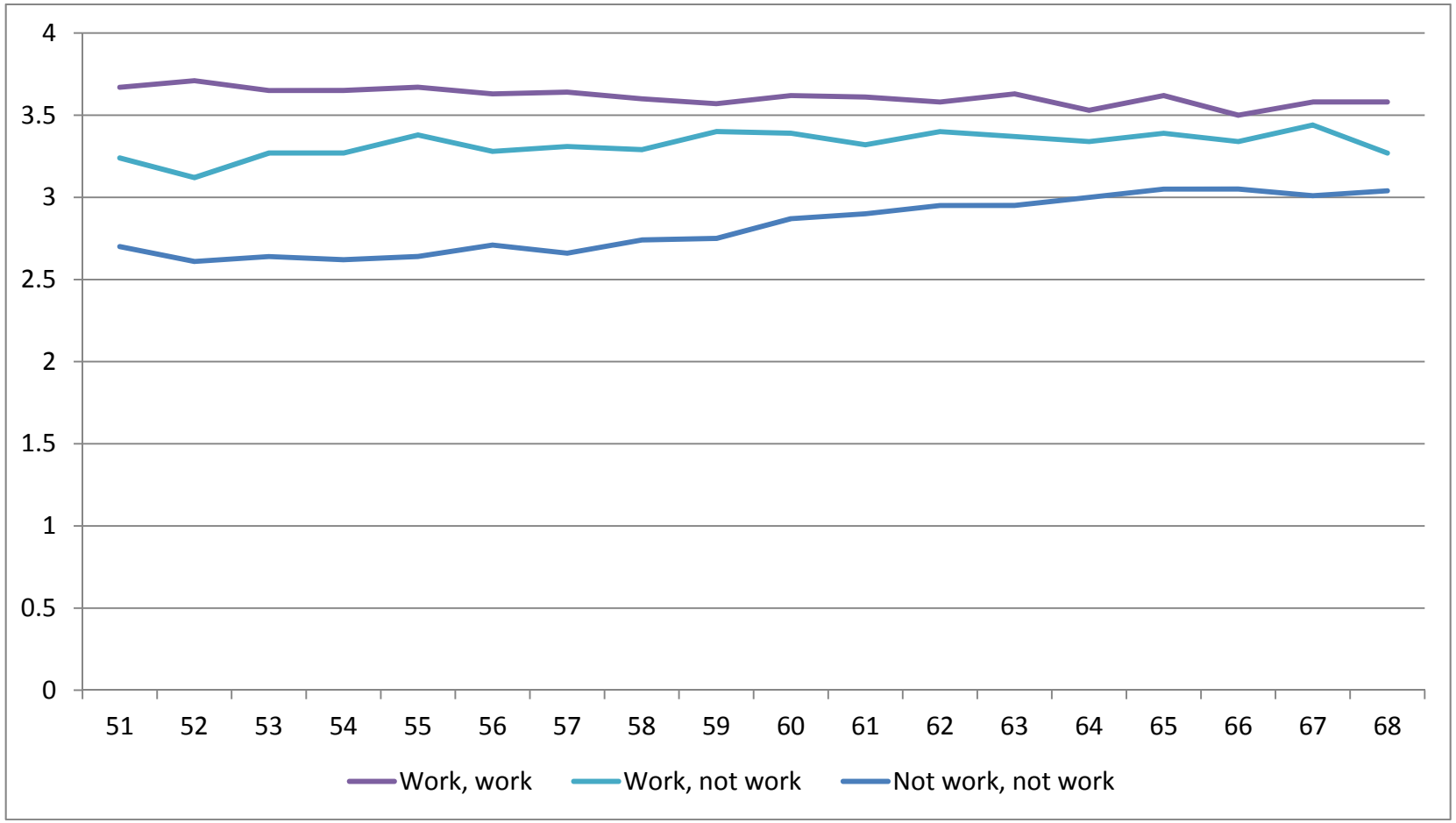
Self-assessed health score by labor force transition. Score prior to transition. Work-to-work versus work-to-not work



Work-to-not work had lower scores prior to transition

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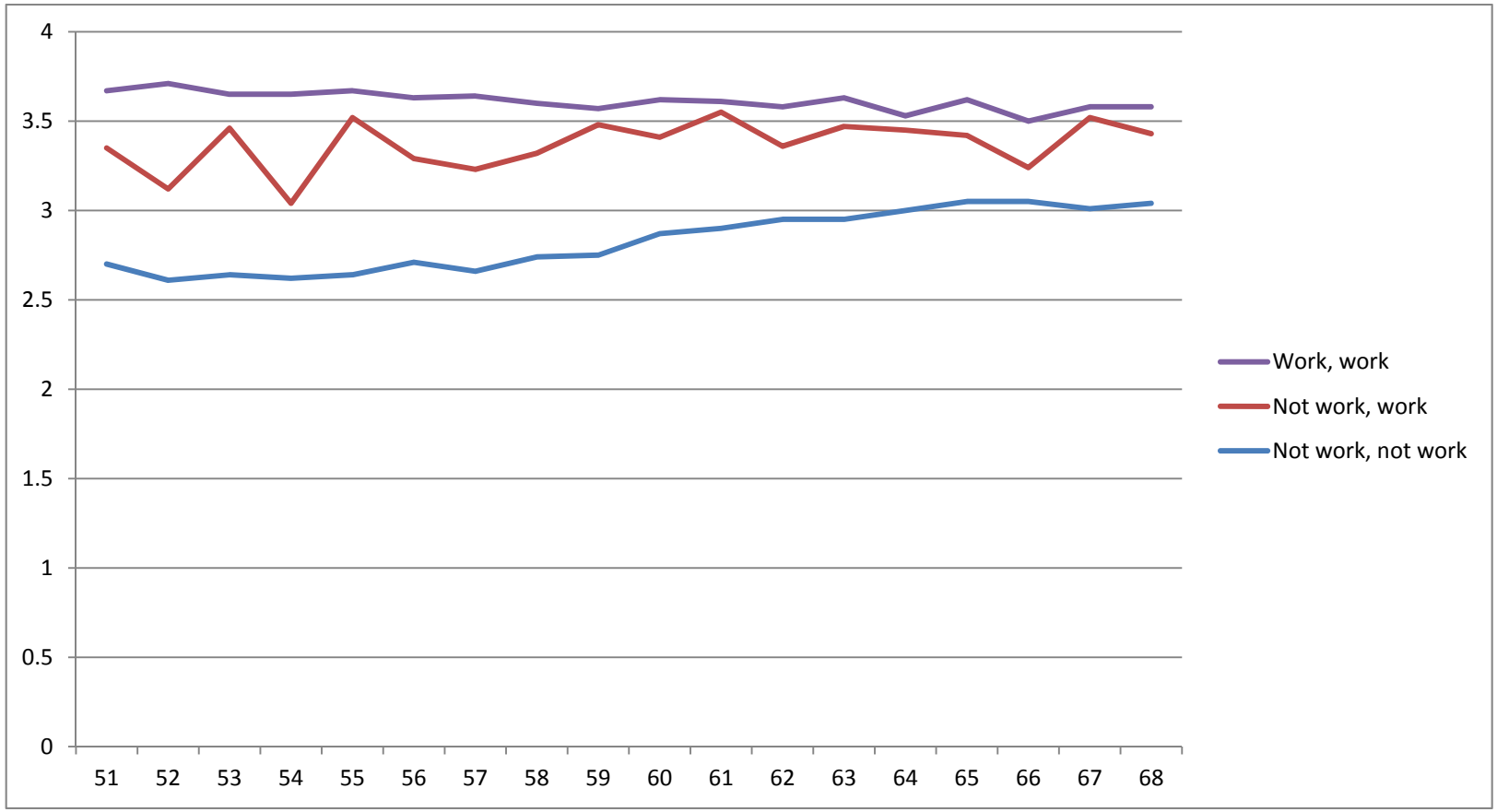
Self-assessed health score by labor force transition. Score prior to transition. Not work-to-work



Not work-to-work had higher scores than not work-to-not work prior to transition

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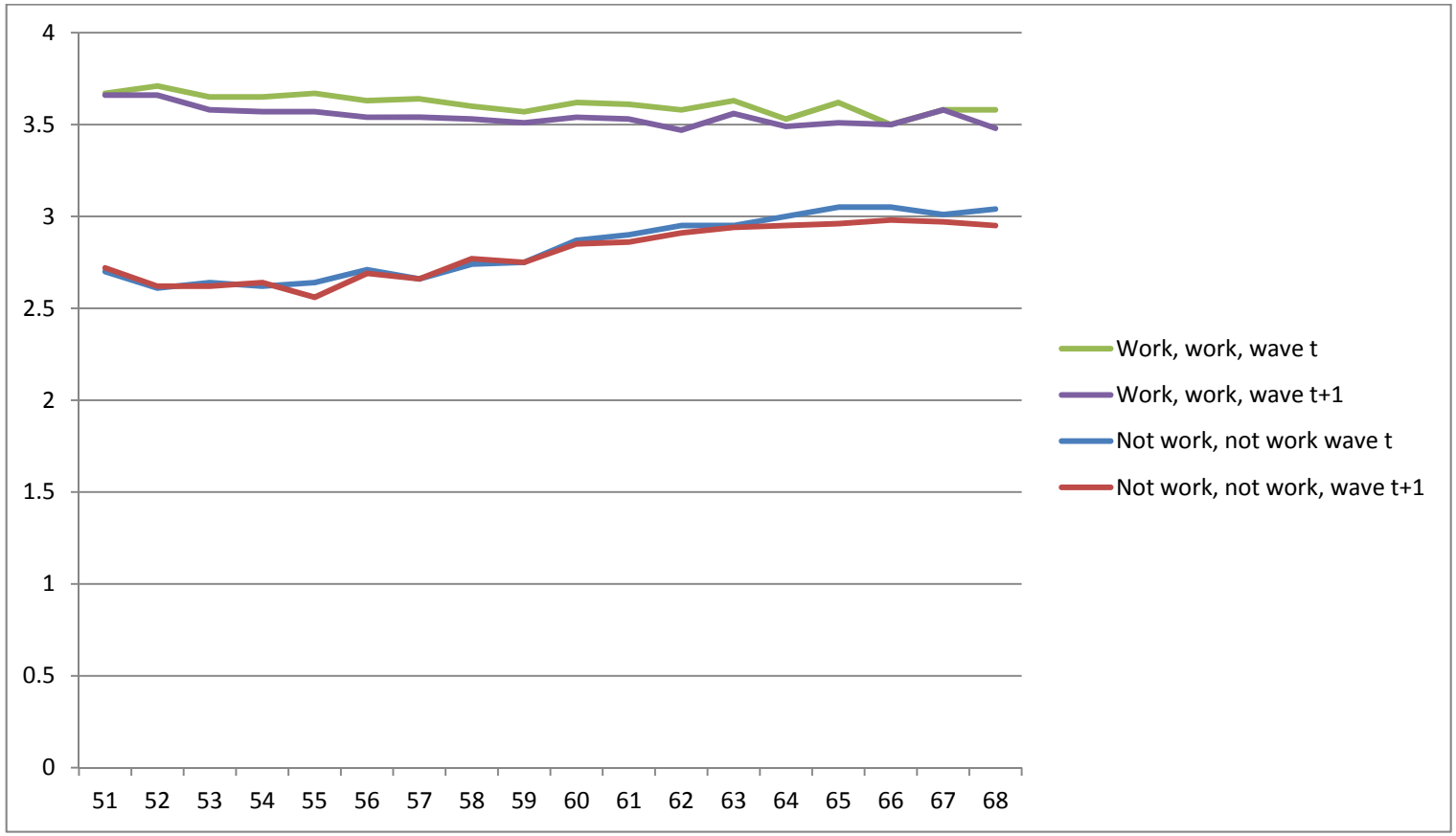
Self-assessed health score by labor force transition. Score prior to and after transition. Work-to-work versus not work-to-not work



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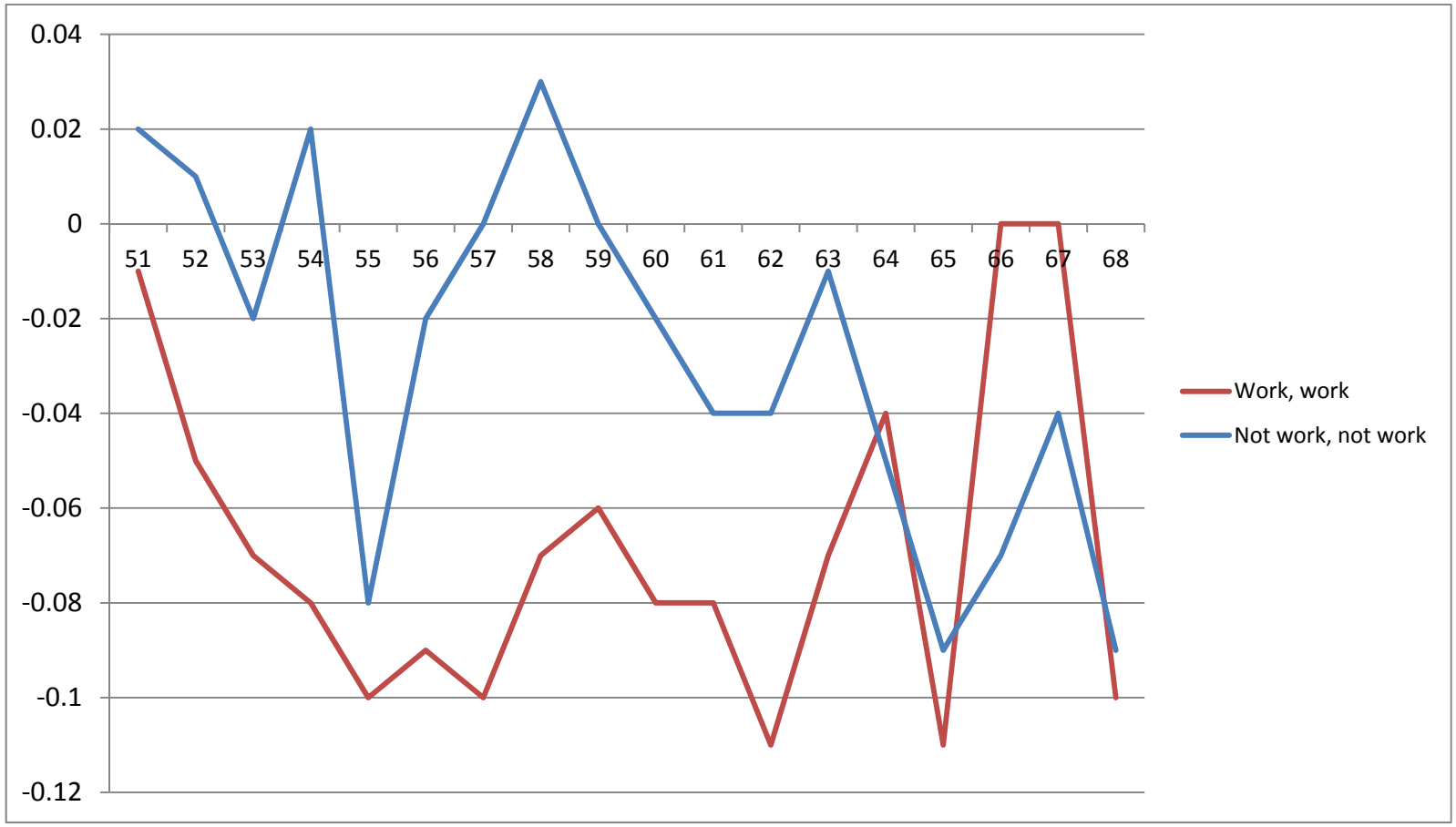
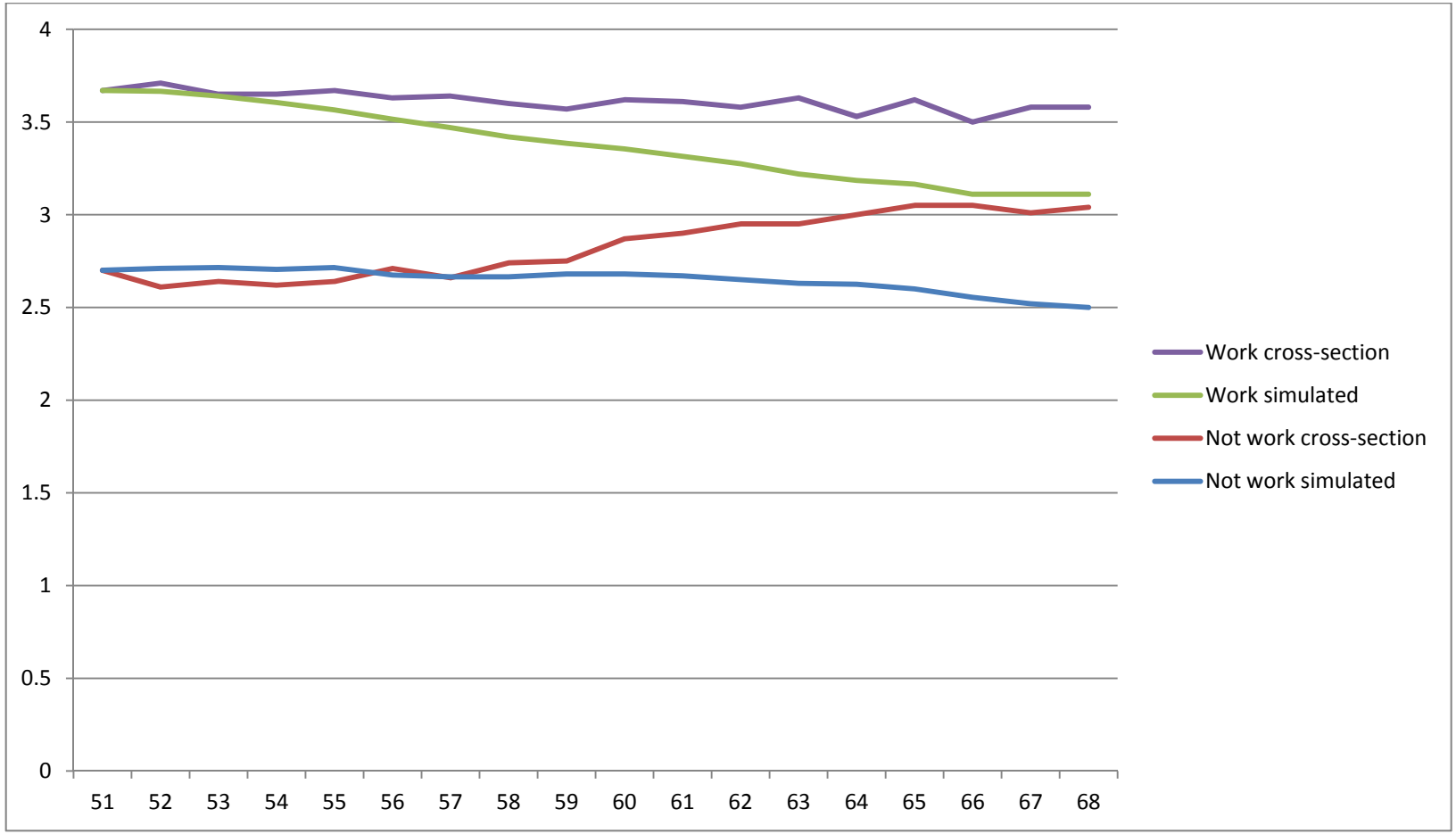
Change in self-assessed health score by labor force transition. Work-to-work versus not work-to-not work



Work-to-work: -0.07; Not work-to-not work: -0.04

“

Simulations of health trajectories



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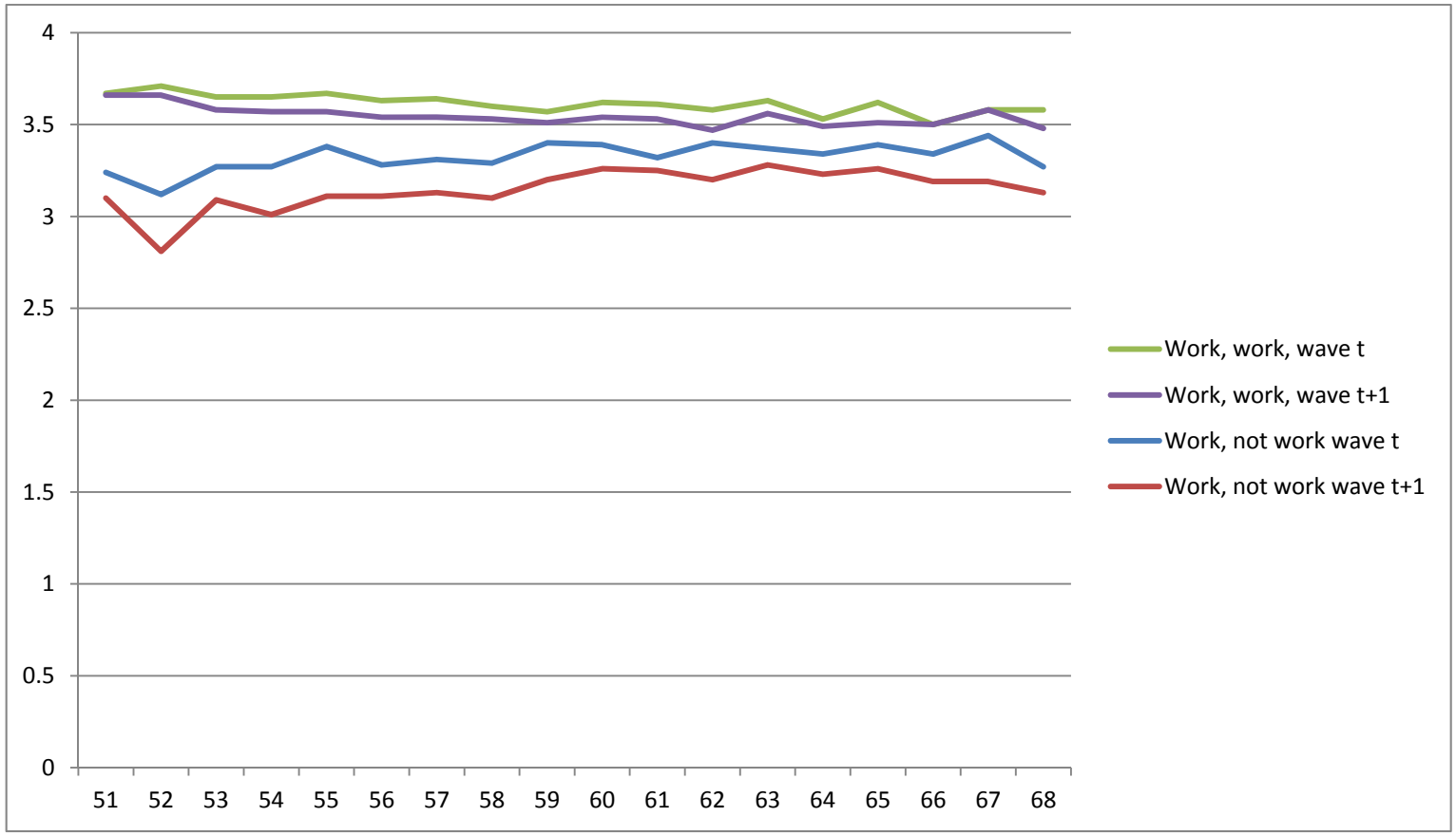
Self-assessed health score before and after labor force transition. Work-to-work versus work-to-not work



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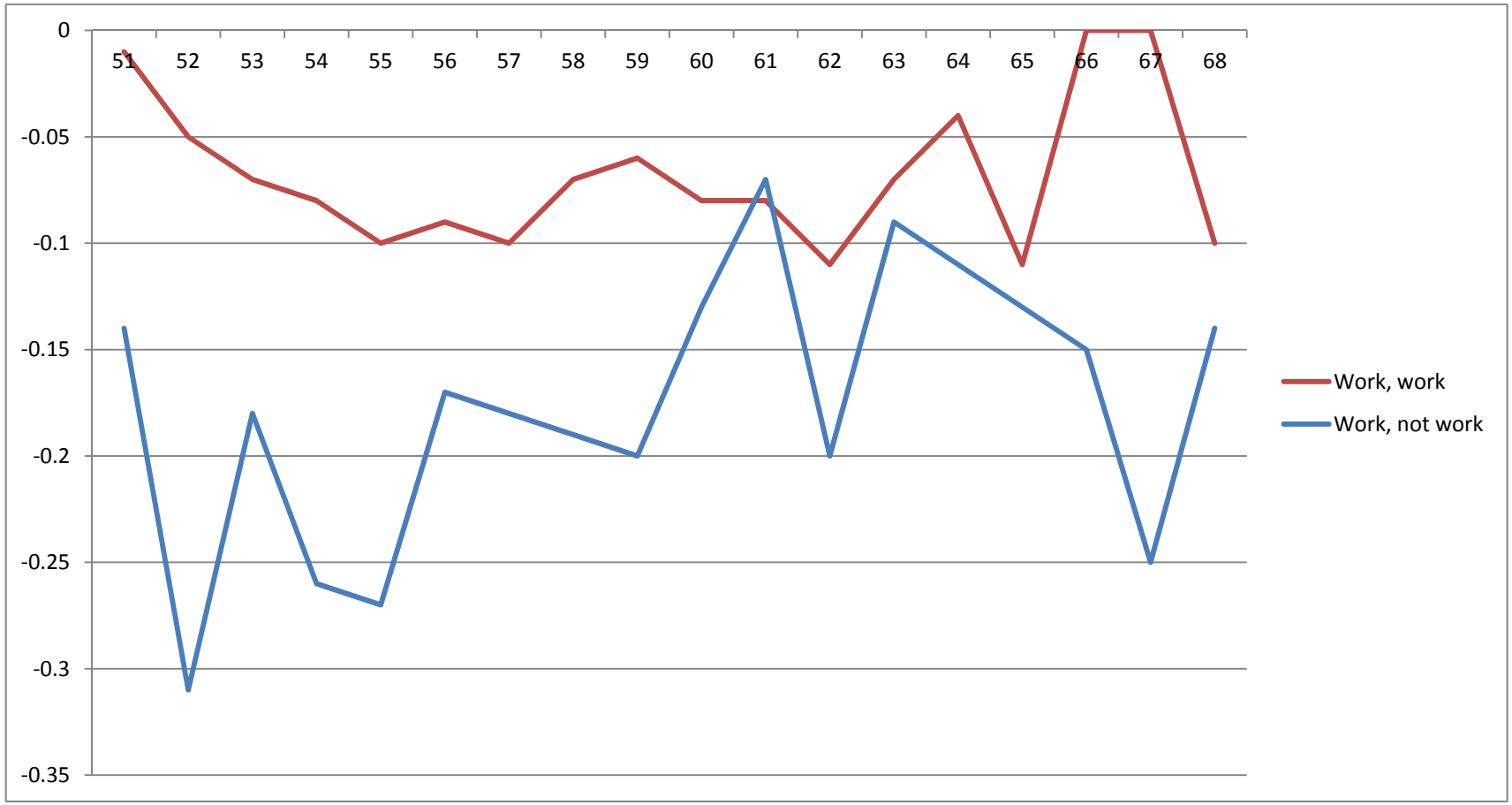
Change in self-assessed health score by labor force transition. Work-to-work versus work-to-not work



Work-to-work: -0.07; work-to-not work: -0.16;

“

Summary of health

Not-work to not-work

- Lower levels
- Smaller decline

than work-to-work

Work to not-work

- Lower levels while working
- Greater decline

than work-to-work

“

Relationships between

- working, retirement and cognition
- working, retirement and health

similar.

“

I very much like classifying jobs as to

Cognitive complexity
Mechanical demands

Greater decline when retiring from low cognitive jobs
    Similar to results of Gwen Fisher *et al*. (2014)

Greater decline when retiring from highly mechanical jobs

“

What are characteristics of workers in those jobs?

- Lower SES?
- Associated with greater propensity for health shocks and worse health shocks?

Have controls adequately accounted for differences?

“

Sample selection: FFFF versus FFRR

Severe but good idea
Establish plausibility of hypotheses in simplified setting

“

Framework of regression

$$cog = \beta \mathrm{Re}t + X_1\beta_1 + X_2\beta_2 + u$$
$$\mathrm{Re}t = \gamma cog + X_2\gamma_2 + X_3\gamma_3 + v$$

Need
$\gamma = 0$
Data on X_2

- Have adequately accounted for X_2 ?
- $\gamma = 0$?

“

My conclusion

Important first step.

Would like to think of IV strategy