



Consumer Sentiments VS. Economy Realities

Longitudinal Analysis of Changing Consumer Perceptions in Relation to
Employment

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Socio-Economic Background

Exploratory Data Analysis Executive Summary

- Project Objective
- Data Source
- Data Reliability
- THEME FOUND123
- Limitations of the Analysis

Research Questions

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Data Source and Assumptions

Data Cleaning Process

Notable Findings

Finding 1. Finding Theme

State the finding in a few lines (See Visualization 1).

Finding 2. (See Visualization 2).

Finding 3. (See Visualization 3).

Visualizations

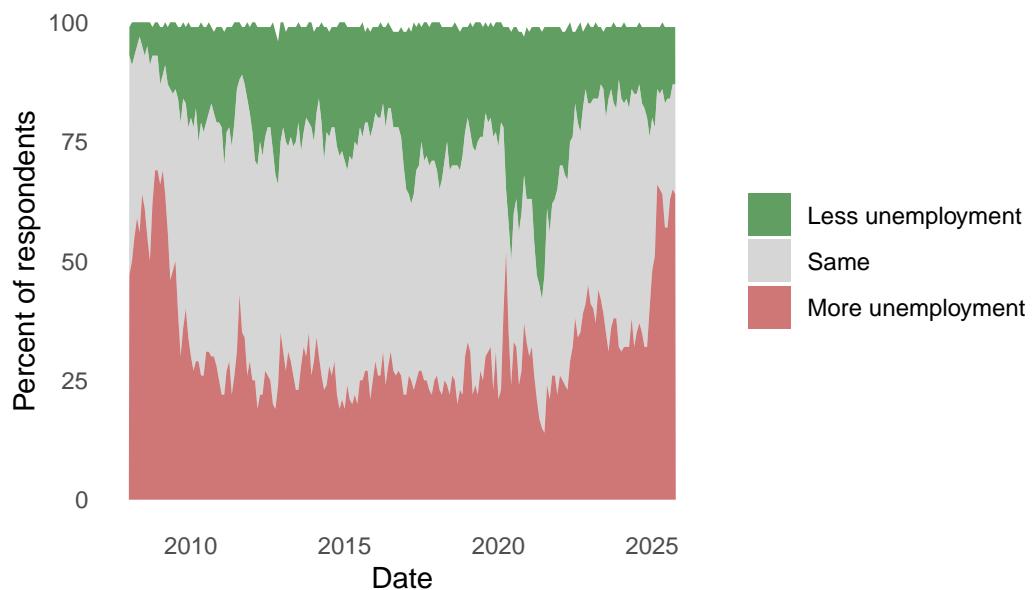
Preview of Consumer Sentiment Data

```
# A tibble: 6 x 4
  date       cs   year month
  <date>     <dbl> <int> <int>
1 2008-01-01 78.4  2008     1
2 2008-02-01 70.8  2008     2
3 2008-03-01 69.5  2008     3
4 2008-04-01 62.6  2008     4
5 2008-05-01 59.8  2008     5
6 2008-06-01 56.4  2008     6
```

Preview of Expected Change in Unemployment During the Next Year

```
# A tibble: 6 x 8
  date      Month Year Less Same More `DK; NA` Relative
  <date>    <int> <int> <dbl> <dbl> <dbl> <dbl> <dbl>
1 2008-01-01     1 2008     6   46   47     1    59
2 2008-02-01     2 2008     9   41   50     0    59
3 2008-03-01     3 2008     7   38   55     0    52
4 2008-04-01     4 2008     5   36   59     0    46
5 2008-05-01     5 2008     3   41   56     0    47
6 2008-06-01     6 2008     5   31   64     0    41
```

Expected change in unemployment over the next year



- BRIEF EXPLAIN HERE

Preview of BLS Data - Unemployment Rate and Job Change

```
# A tibble: 6 x 2
  date      unrate
  <date>    <dbl>
1 2008-01-01     5
2 2008-02-01     4.9
3 2008-03-01     5.1
4 2008-04-01     5
5 2008-05-01     5.4
6 2008-06-01     5.6
```

```
# A tibble: 6 x 3
```

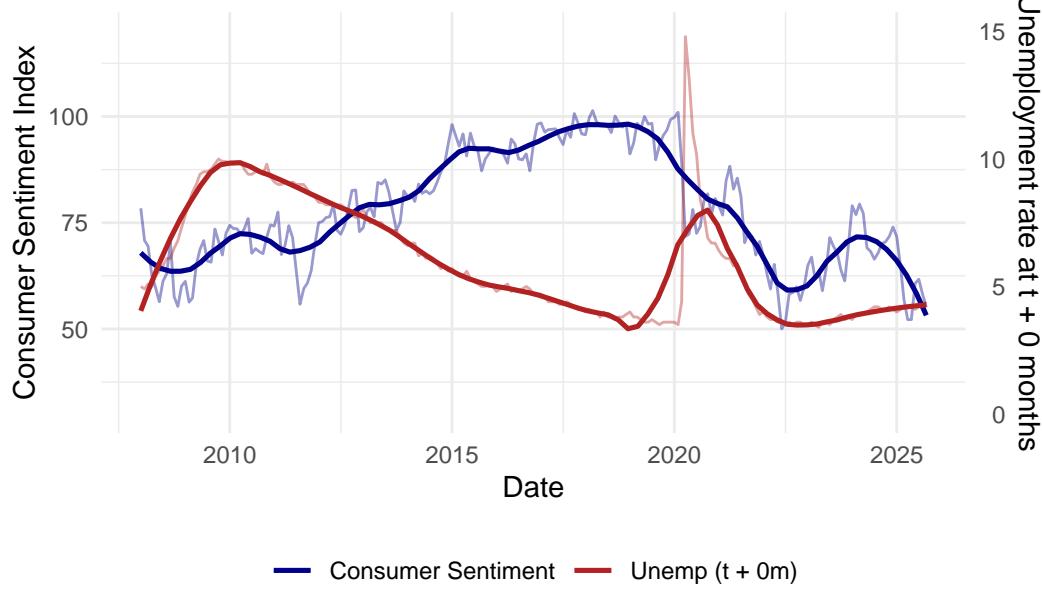
	date	nonfarm_emp	job_change
	<date>	<dbl>	<dbl>
1	2008-01-01	138391	NA
2	2008-02-01	138327	-64
3	2008-03-01	138257	-70
4	2008-04-01	138038	-219
5	2008-05-01	137851	-187
6	2008-06-01	137698	-153

Visualization 1. Lagged Time-Series of Consumer Sentiment and Unemployment Rate/Job Change

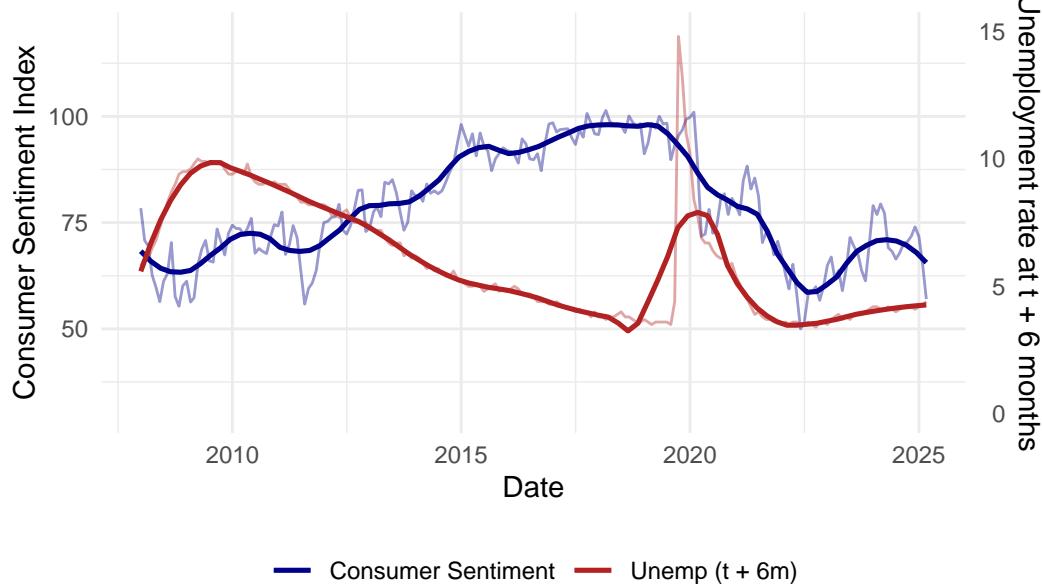
Preview of Merged Monthly Aligned Macro Data

```
# A tibble: 6 x 5
  date      cs unrate nonfarm_emp job_change
  <date>    <dbl>   <dbl>       <dbl>      <dbl>
1 2008-01-01 78.4     5        138391      NA
2 2008-02-01 70.8     4.9       138327     -64
3 2008-03-01 69.5     5.1       138257     -70
4 2008-04-01 62.6     5        138038     -219
5 2008-05-01 59.8     5.4       137851     -187
6 2008-06-01 56.4     5.6       137698     -153
```

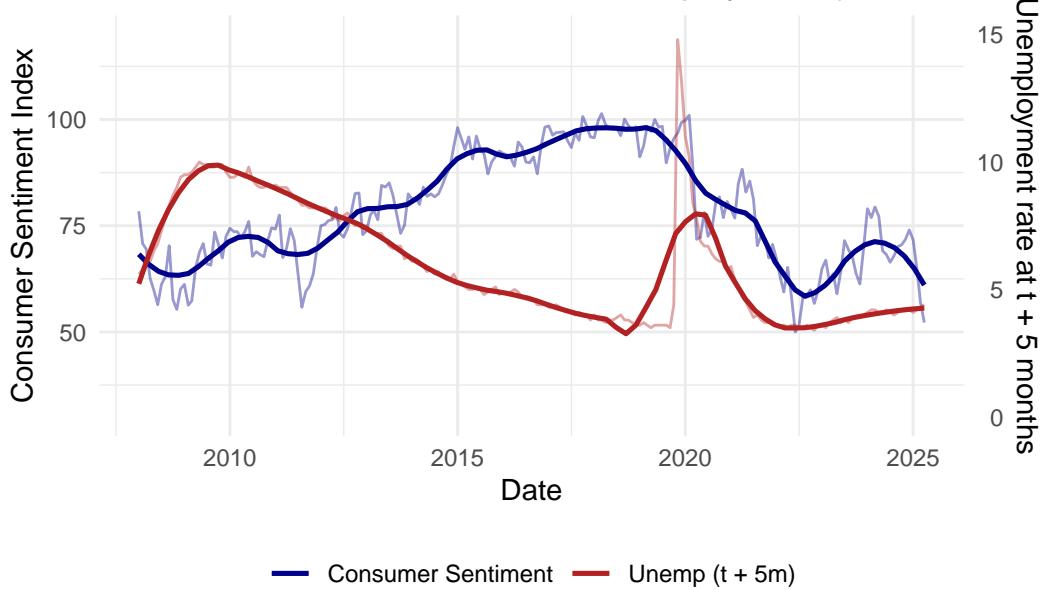
Consumer Sentiment vs Future Unemployment (0-month lead)



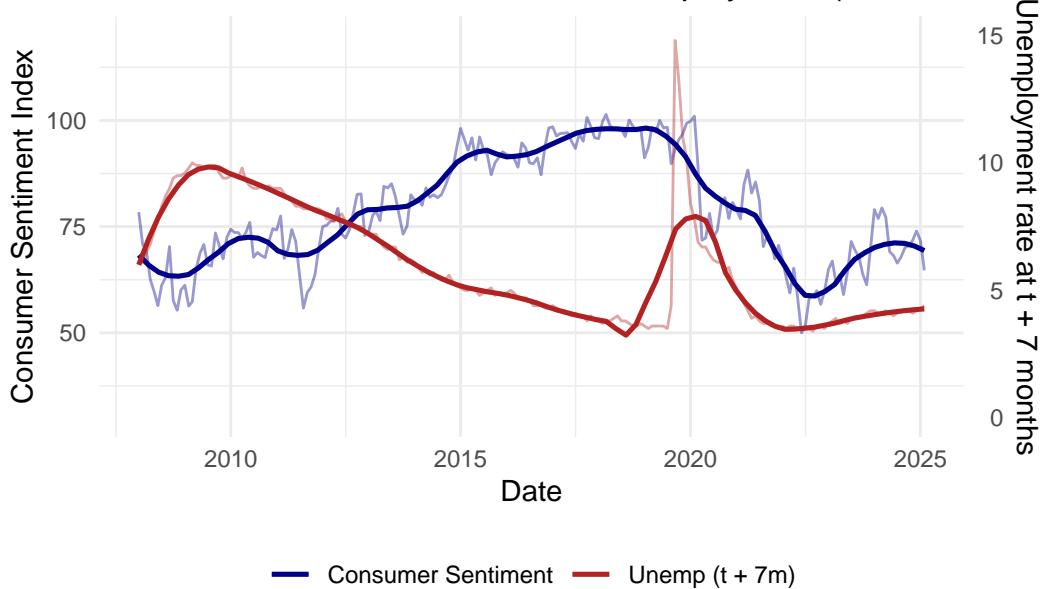
Consumer Sentiment vs Future Unemployment (6-month lead)



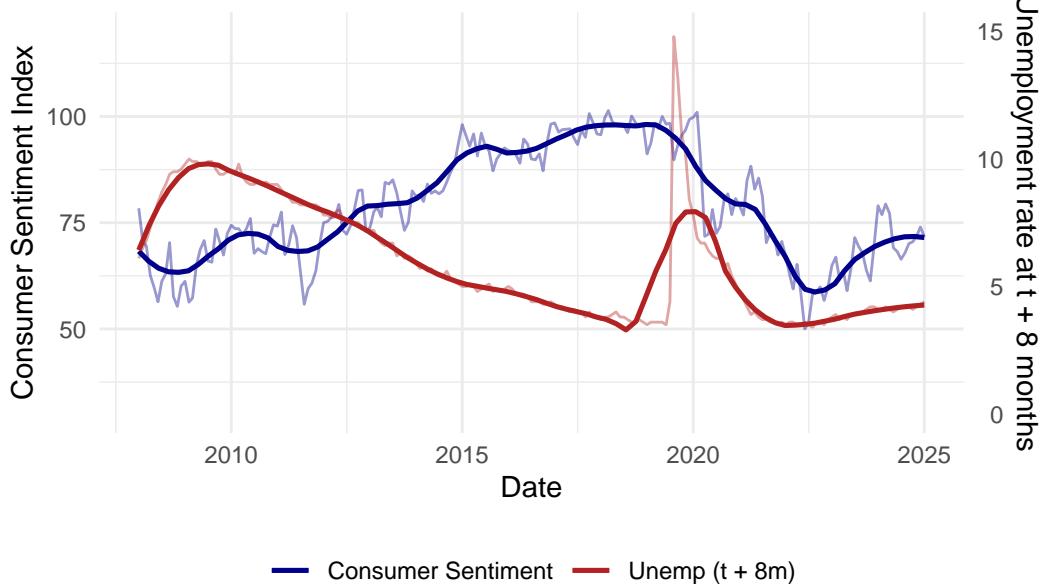
Consumer Sentiment vs Future Unemployment (5-month lead)



Consumer Sentiment vs Future Unemployment (7-month lead)

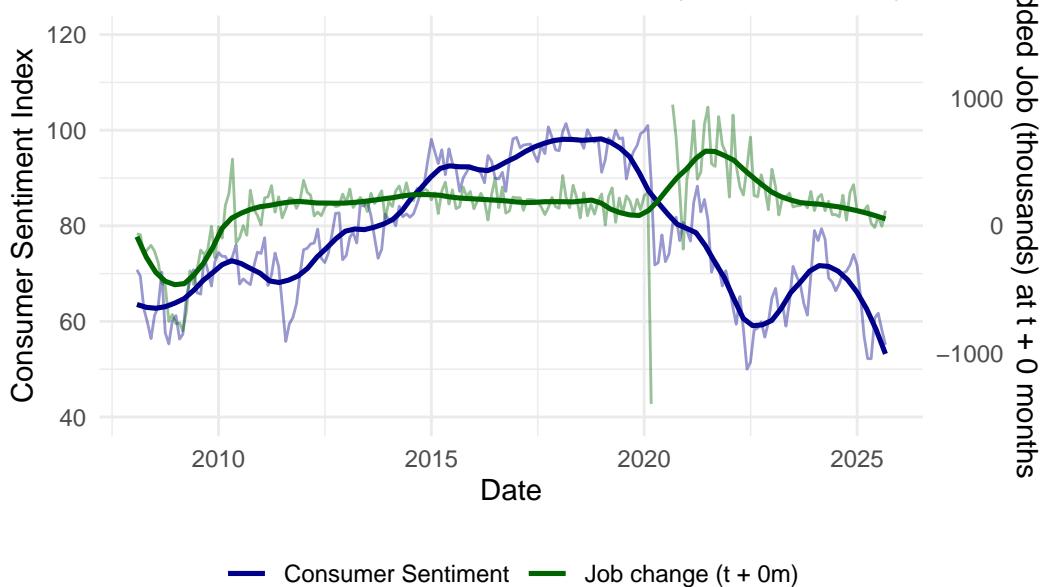


Consumer Sentiment vs Future Unemployment (8-month lead)

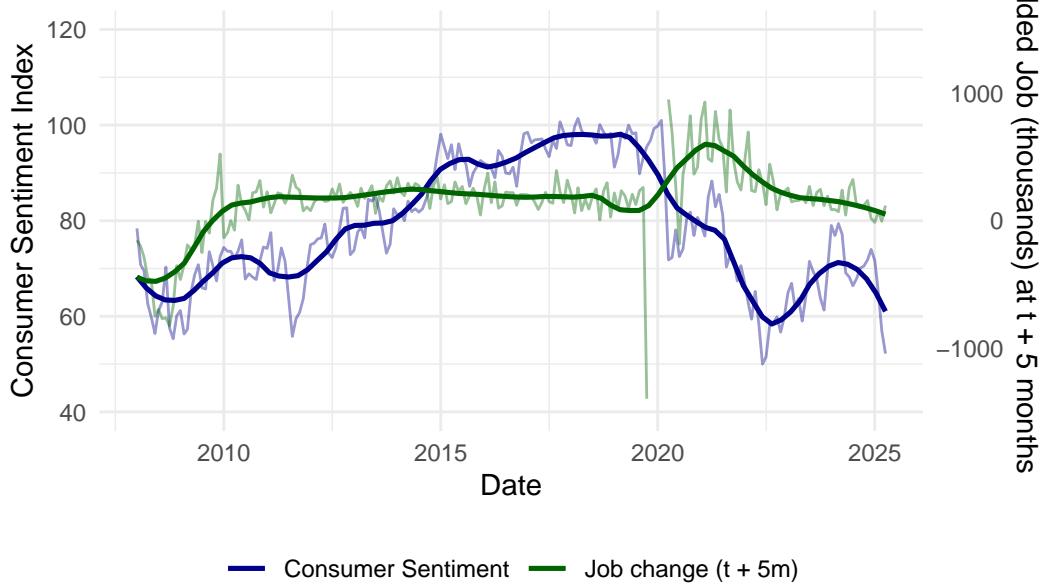


- ANALYSIS HERE
- EXPLAIN LOGISTICS OF SMOOTHING
- ENDED UP NOT THAT CLEAR INDICATING

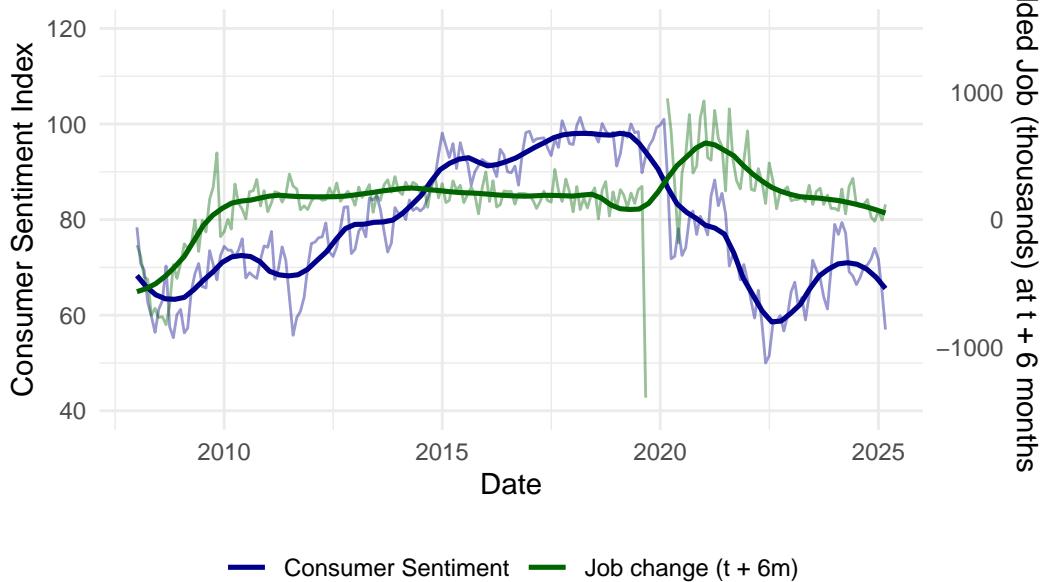
Consumer Sentiment vs Added Jobs (0-month lead)

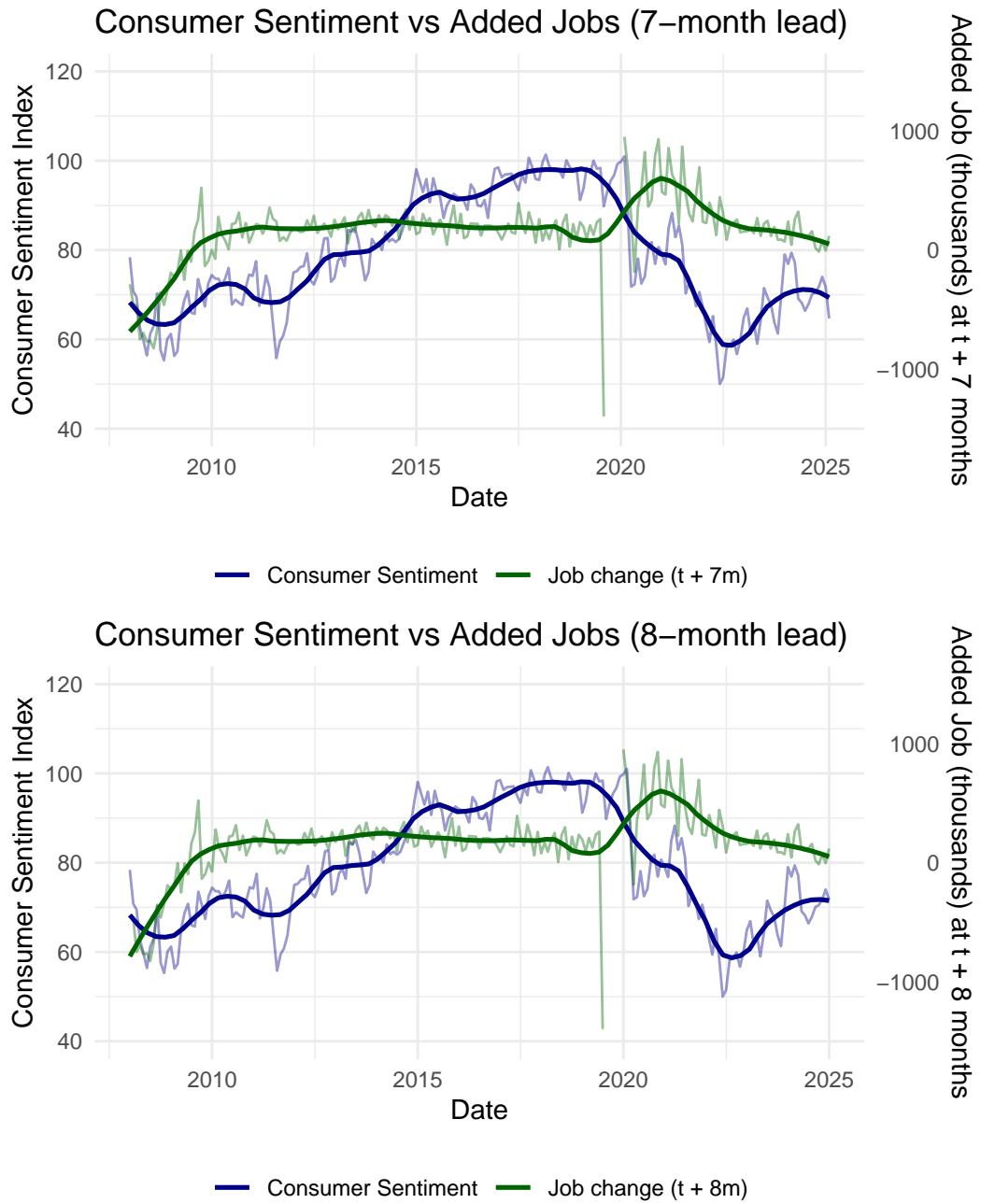


Consumer Sentiment vs Added Jobs (5-month lead)



Consumer Sentiment vs Added Jobs (6-month lead)





- ANALYSIS HERE
- EXPLAIN TEST & FINDING ON DIFFERENT LAGS
- EXPLAIN LOGISTICS OF SMOOTHING

Visualization 2. Net expectations vs Subsequent unemployment change

- ADD LOGISTICS OF CALCULATING NET EXPECTATIONS OF UNEMPLOYMENT HERE! (MAYBE SHOW BRIEF DATAFRAME?)

Horizon: 0 months

Correlation (net expectations, future Δunemp): NA

Slope (OLS): 0 pp change in unemp per 1-pt net expectation

R-squared: NaN

Horizon: 1 months

Correlation (net expectations, future Δunemp): -0.169

Slope (OLS): -0.0069 pp change in unemp per 1-pt net expectation

R-squared: 0.029

Horizon: 2 months

Correlation (net expectations, future Δunemp): -0.19

Slope (OLS): -0.0111 pp change in unemp per 1-pt net expectation

R-squared: 0.036

Horizon: 3 months

Correlation (net expectations, future Δunemp): -0.206

Slope (OLS): -0.0144 pp change in unemp per 1-pt net expectation

R-squared: 0.042

Horizon: 4 months

Correlation (net expectations, future Δ unemp): -0.249

Slope (OLS): -0.0197 pp change in unemp per 1-pt net expectation

R-squared: 0.062

Horizon: 5 months

Correlation (net expectations, future Δ unemp): -0.279

Slope (OLS): -0.0239 pp change in unemp per 1-pt net expectation

R-squared: 0.078

Horizon: 6 months

Correlation (net expectations, future Δ unemp): -0.323

Slope (OLS): -0.0296 pp change in unemp per 1-pt net expectation

R-squared: 0.104

Horizon: 7 months

Correlation (net expectations, future Δ unemp): -0.365

Slope (OLS): -0.0354 pp change in unemp per 1-pt net expectation

R-squared: 0.134

Horizon: 8 months

Correlation (net expectations, future Δ unemp): -0.398

Slope (OLS): -0.0401 pp change in unemp per 1-pt net expectation

R-squared: 0.158

Horizon: 9 months

Correlation (net expectations, future Δ unemp): -0.412

Slope (OLS): -0.0431 pp change in unemp per 1-pt net expectation

R-squared: 0.17

Horizon: 10 months

Correlation (net expectations, future Δ unemp): -0.42

Slope (OLS): -0.0455 pp change in unemp per 1-pt net expectation

R-squared: 0.176

Horizon: 11 months

Correlation (net expectations, future Δ unemp): -0.419

Slope (OLS): -0.0467 pp change in unemp per 1-pt net expectation

R-squared: 0.175

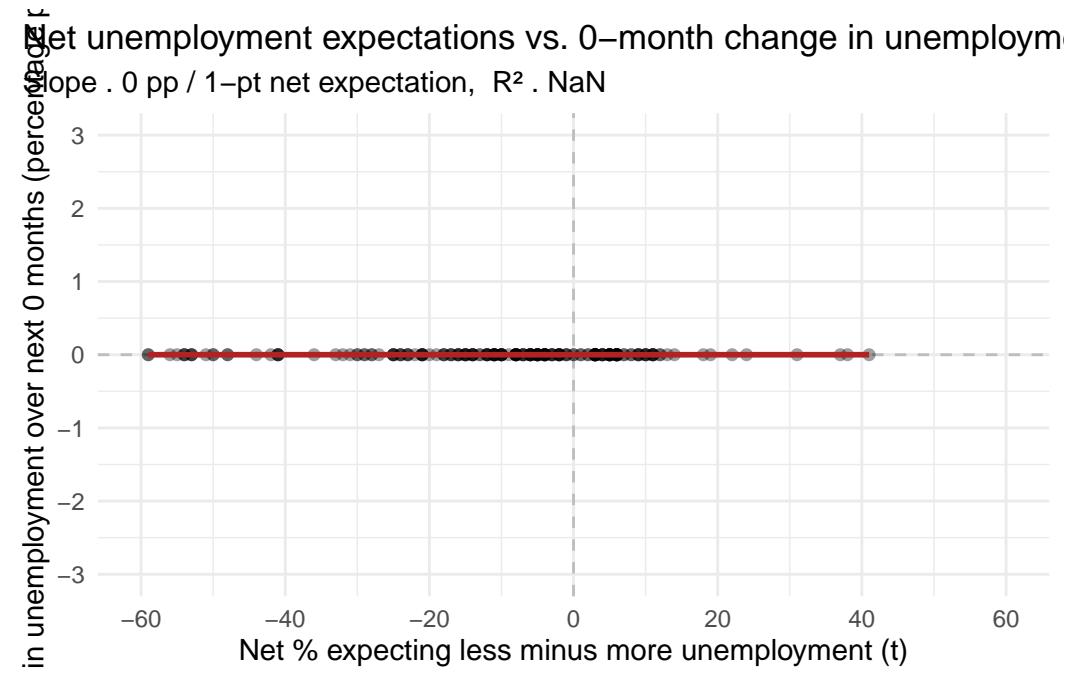
Horizon: 12 months

Correlation (net expectations, future Δ unemp): -0.416

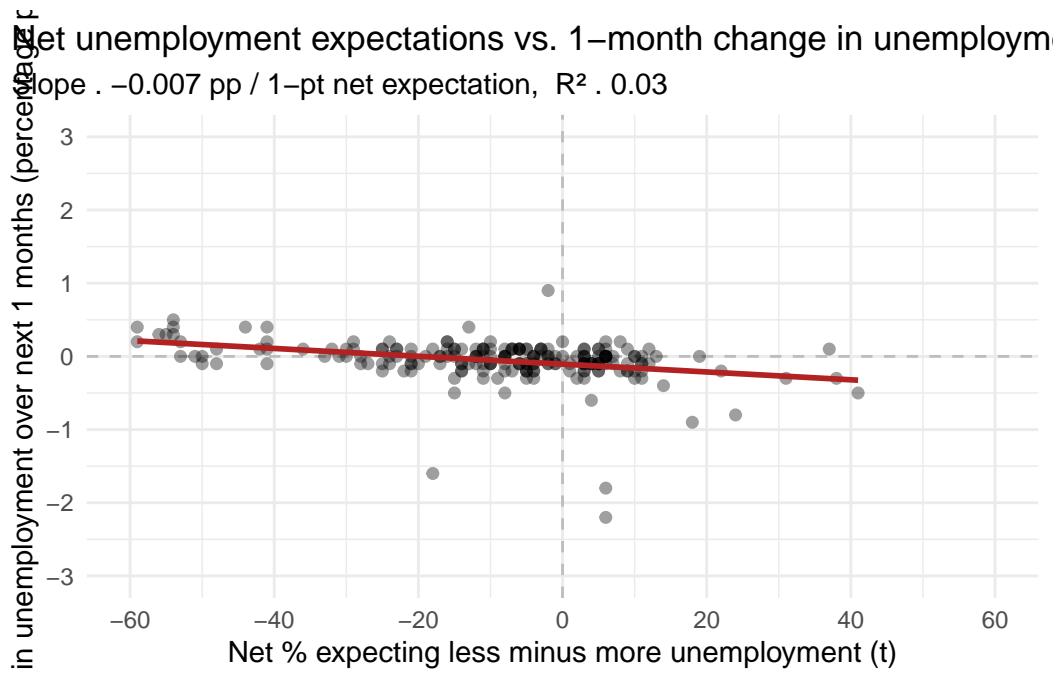
Slope (OLS): -0.0477 pp change in unemp per 1-pt net expectation

R-squared: 0.173

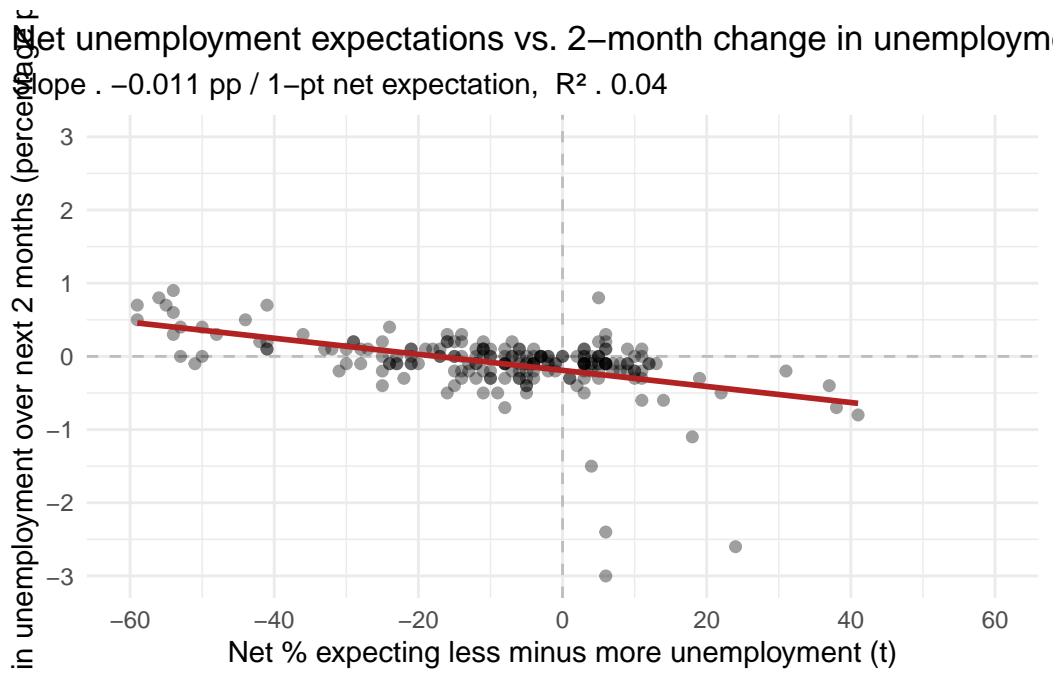
\$h_0m



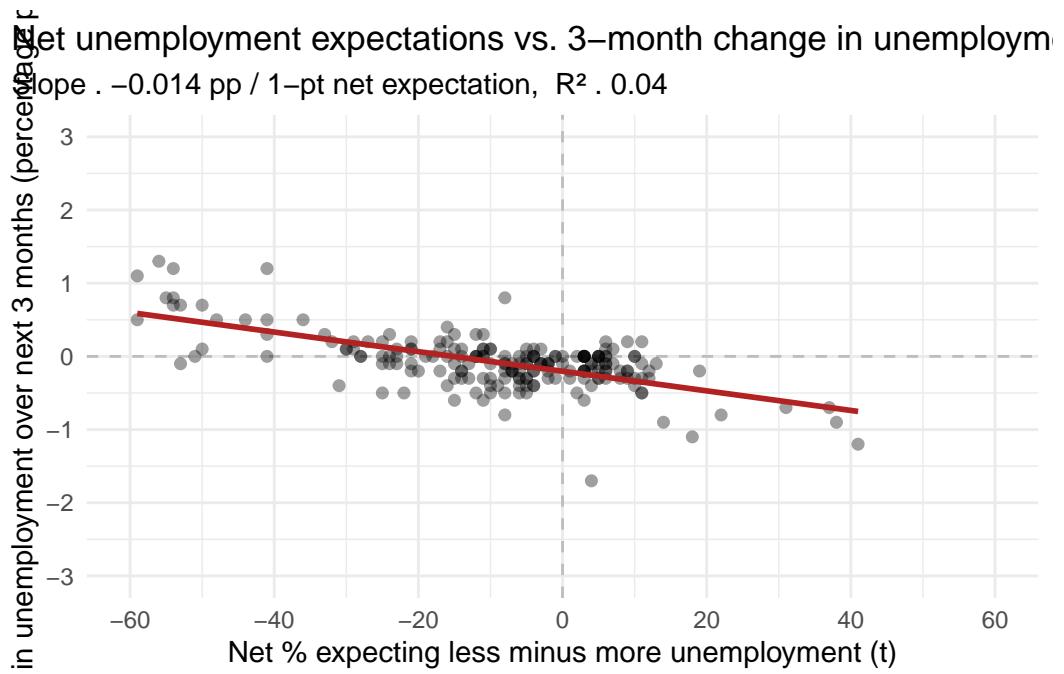
\$h_1m



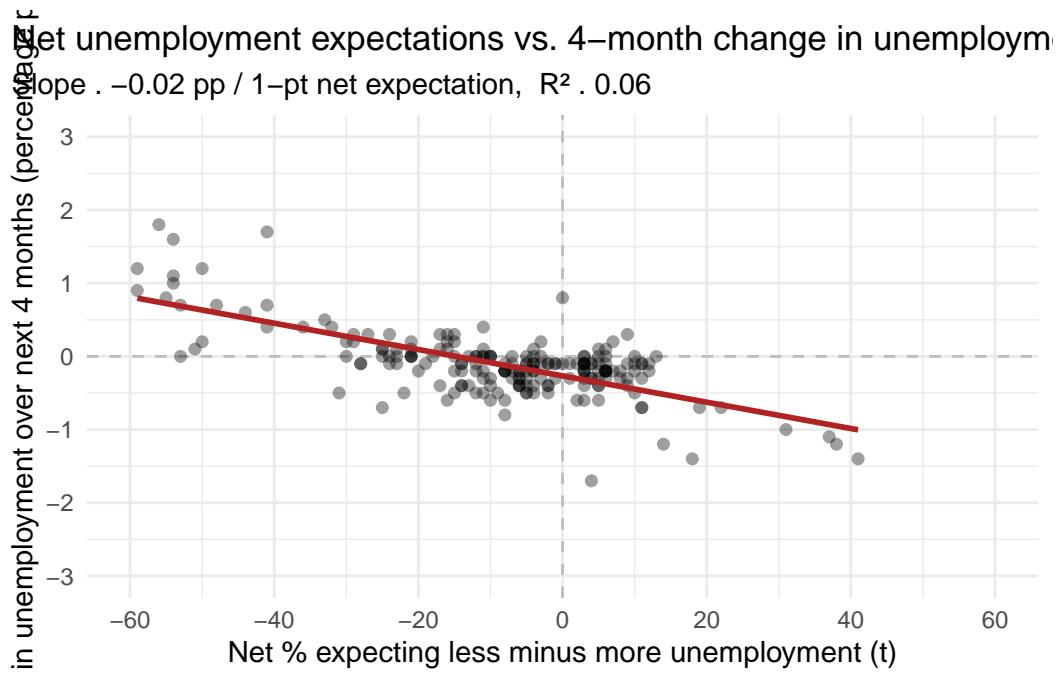
\$h_2m



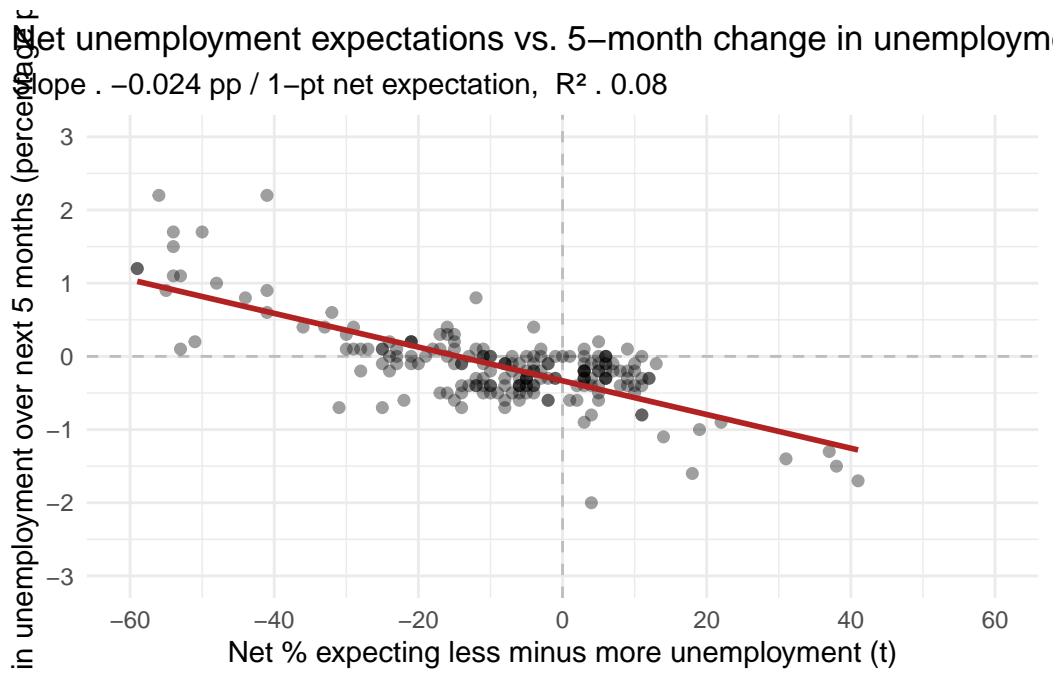
\$h_3m



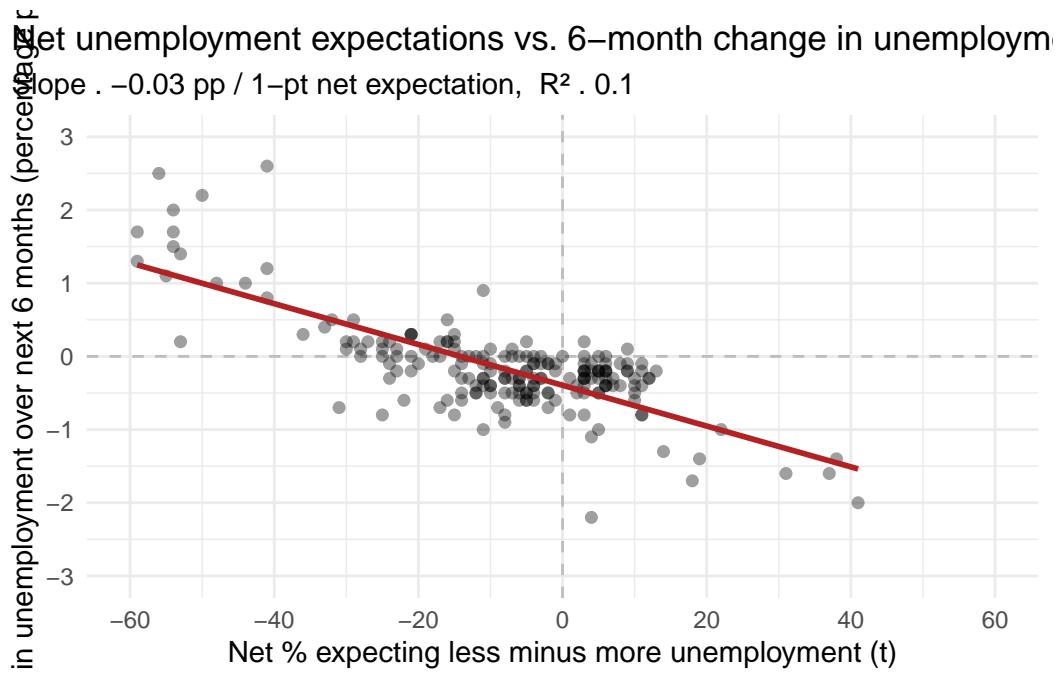
\$h_4m



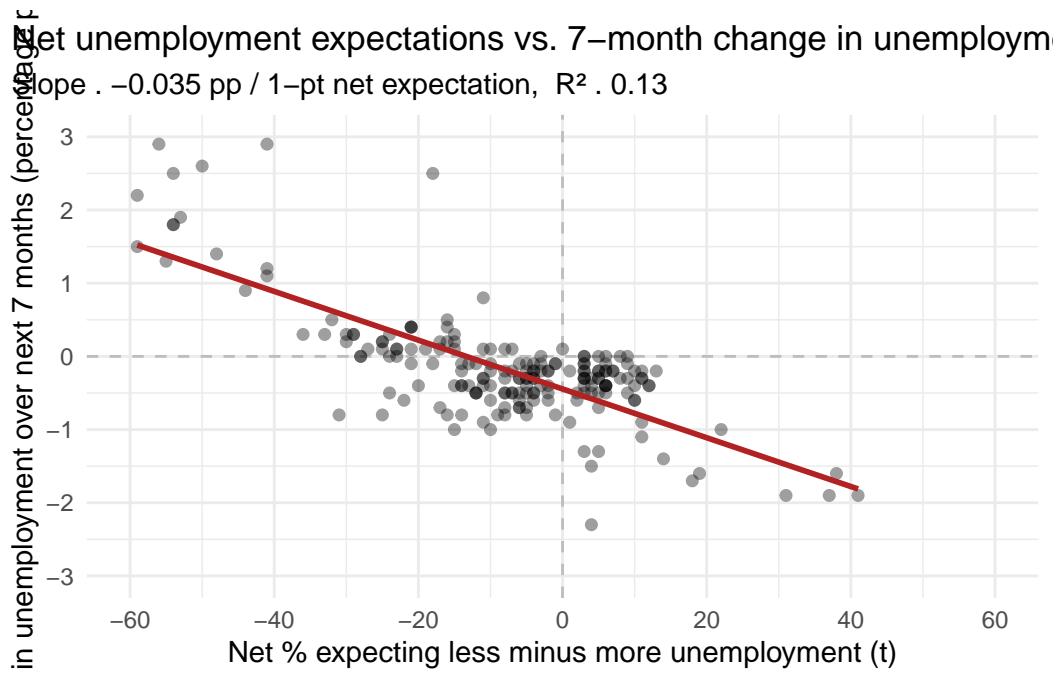
\$h_5m



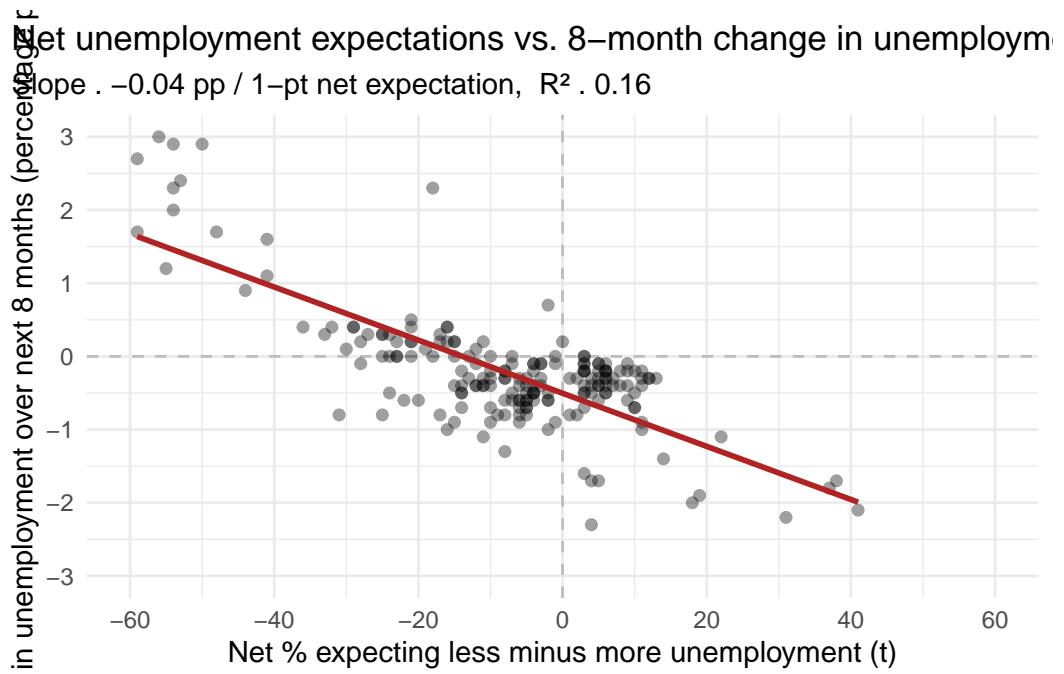
\$h_6m



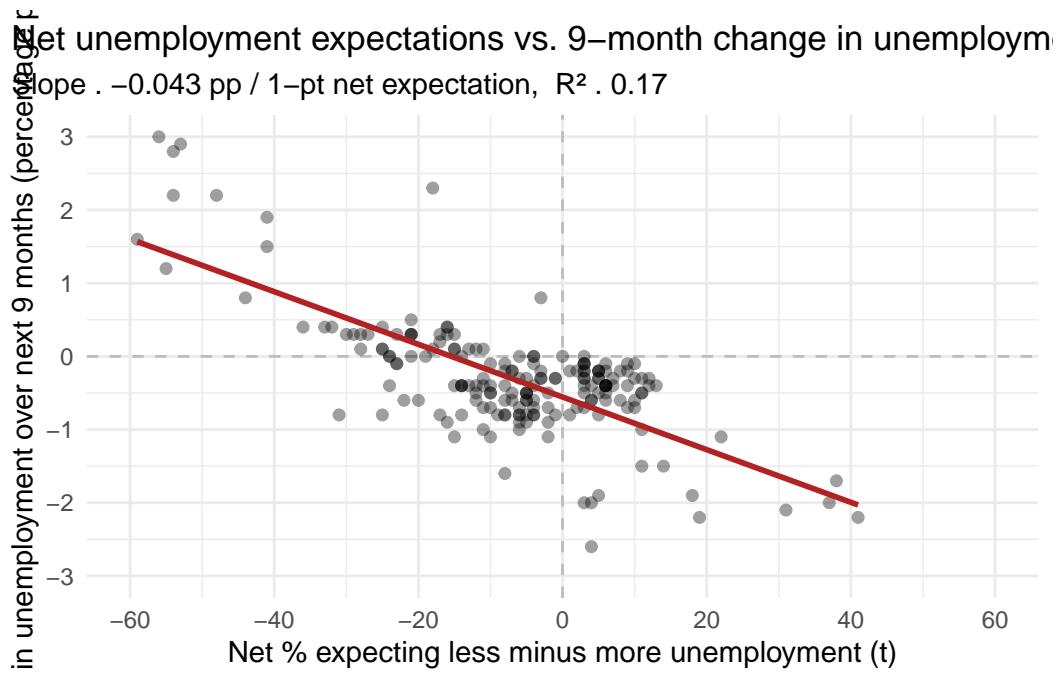
\$h_7m



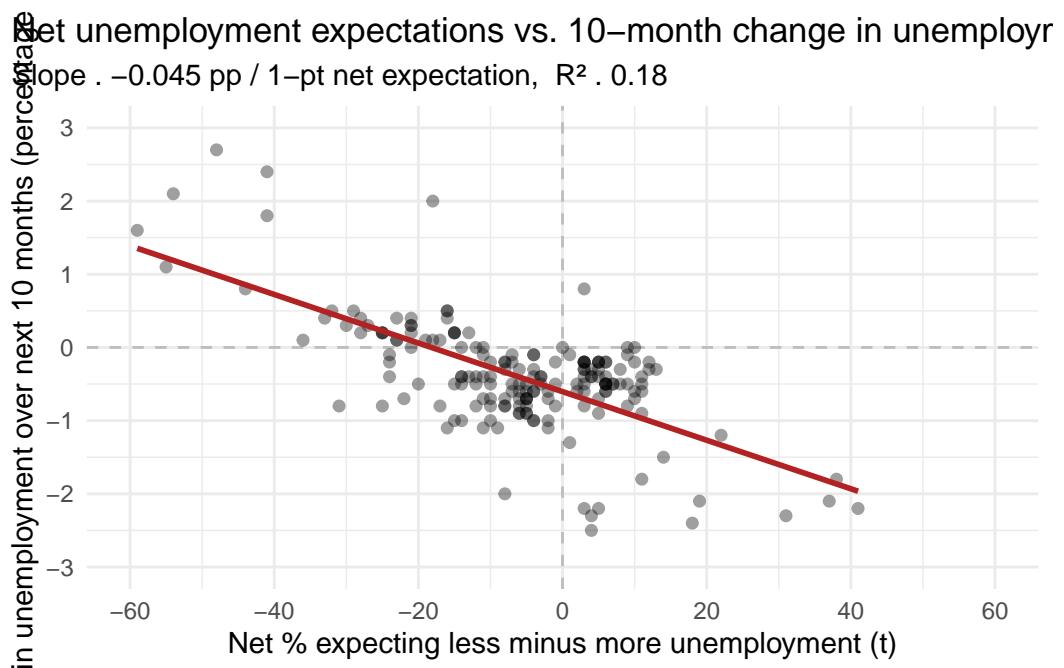
\$h_8m



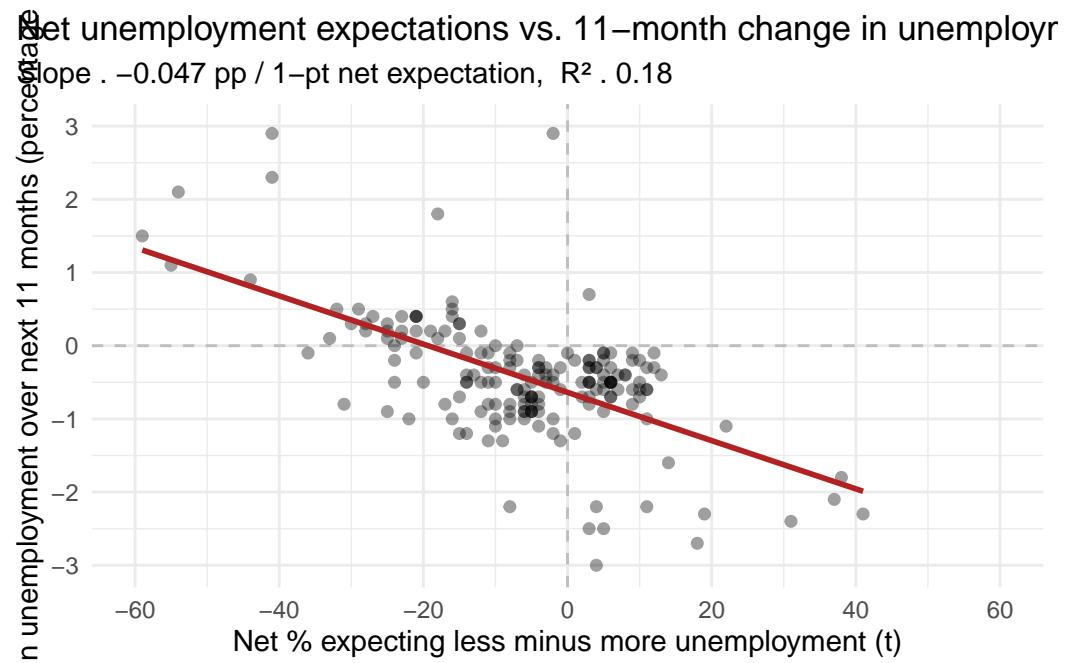
\$h_9m



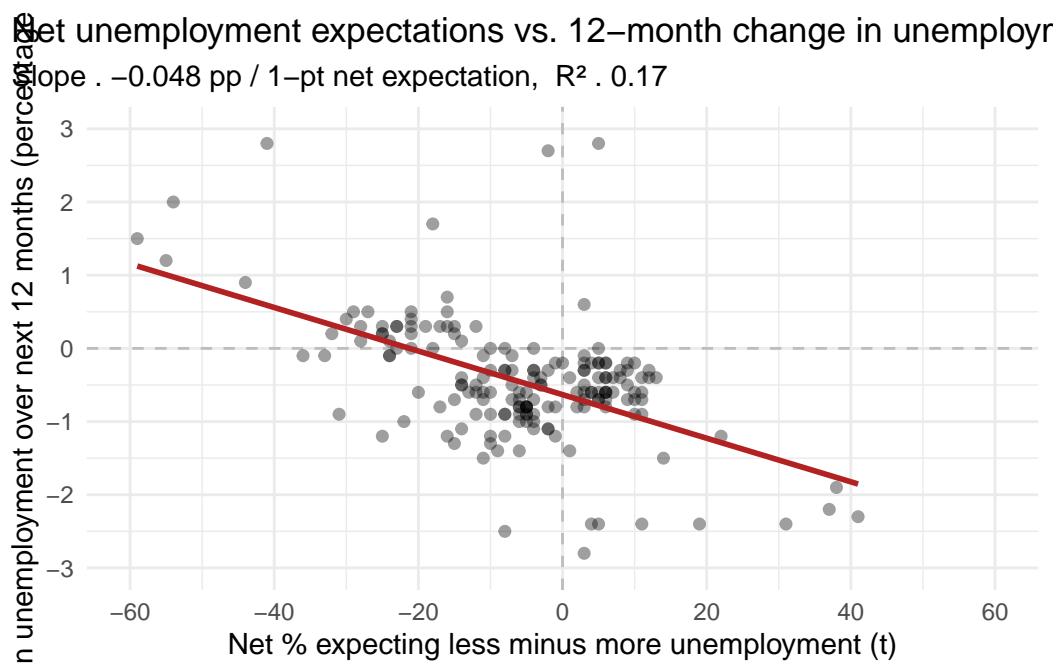
\$h_10m



\$h_11m

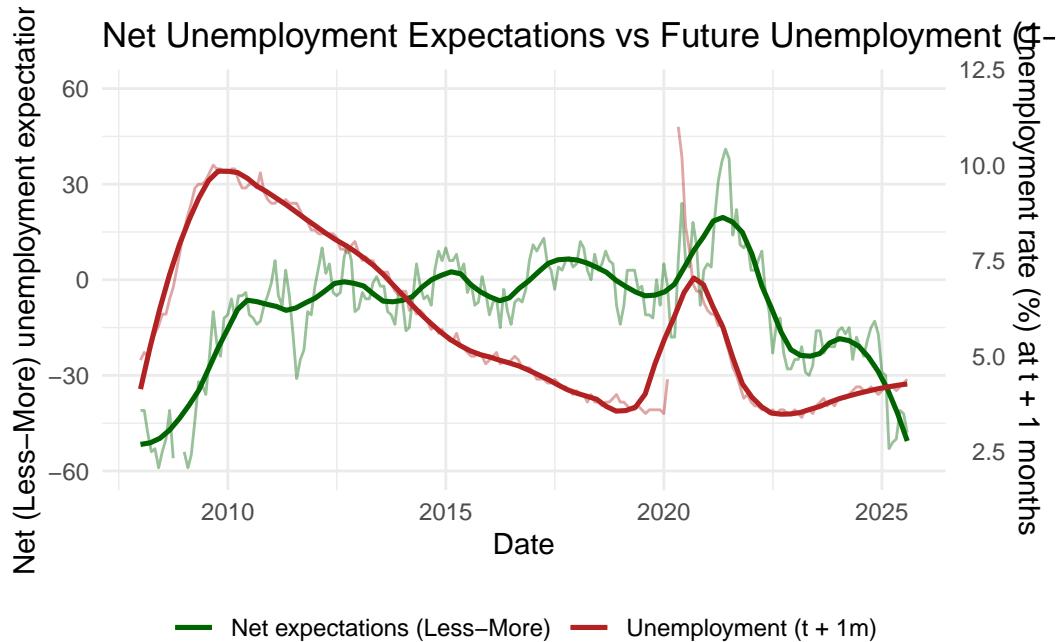
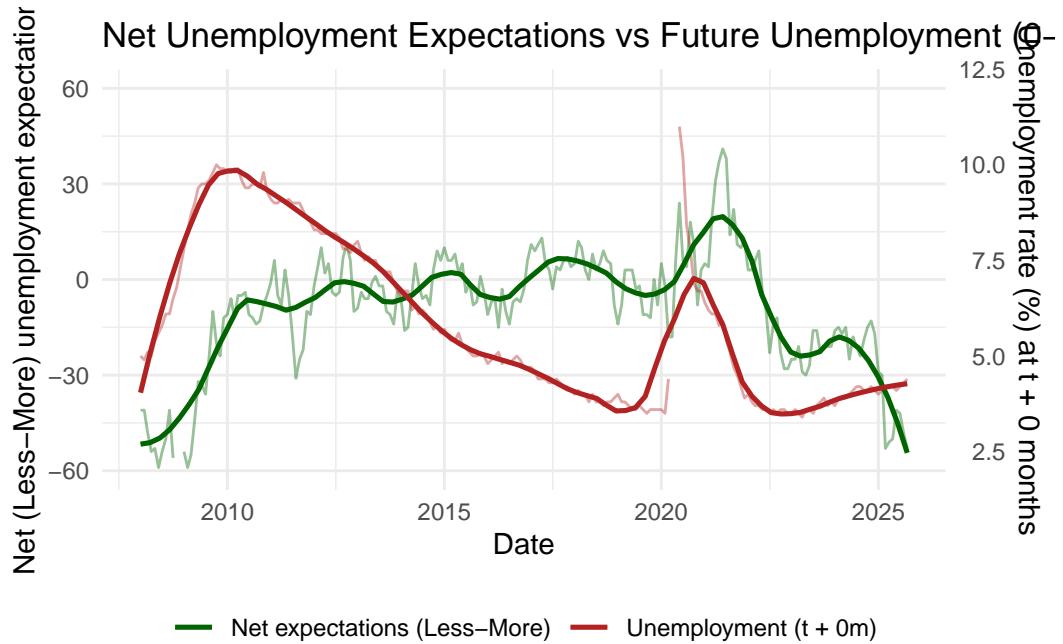


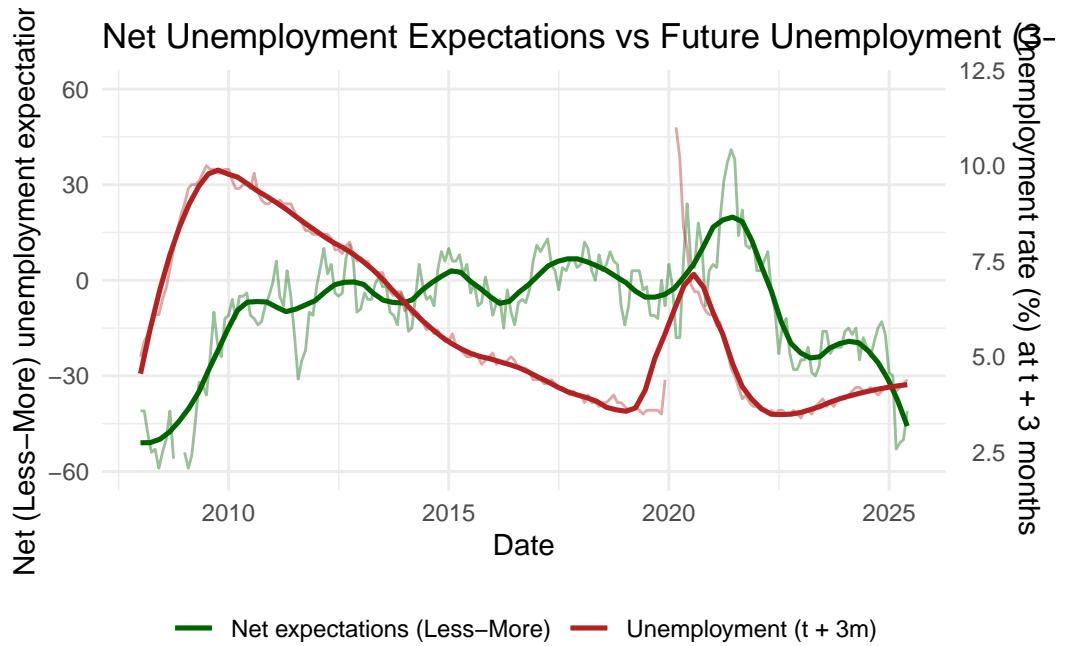
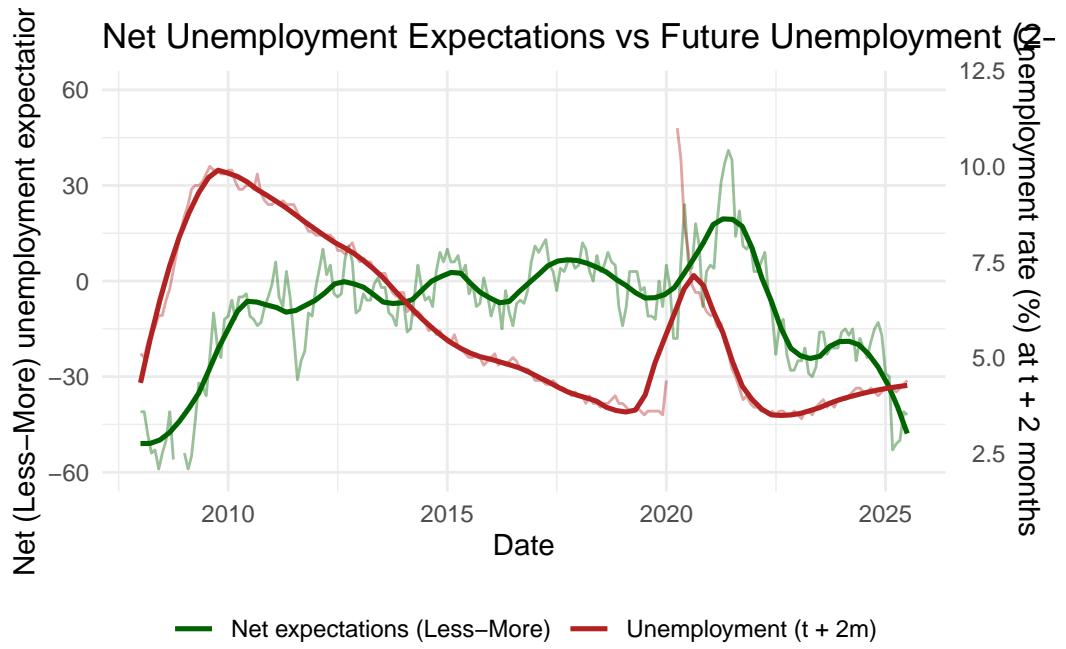
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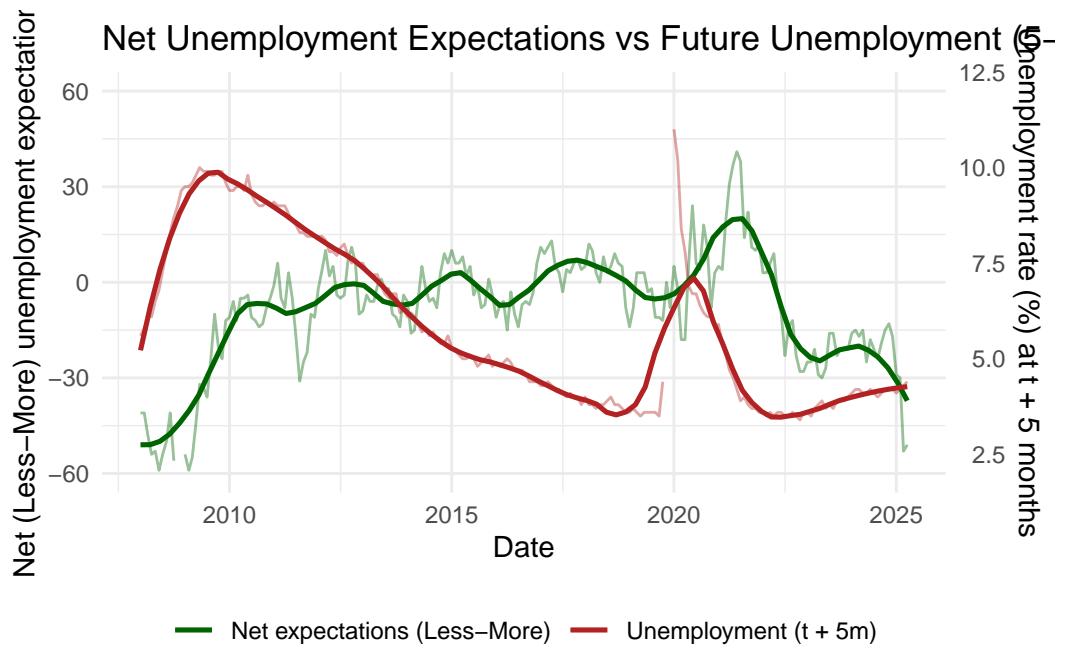
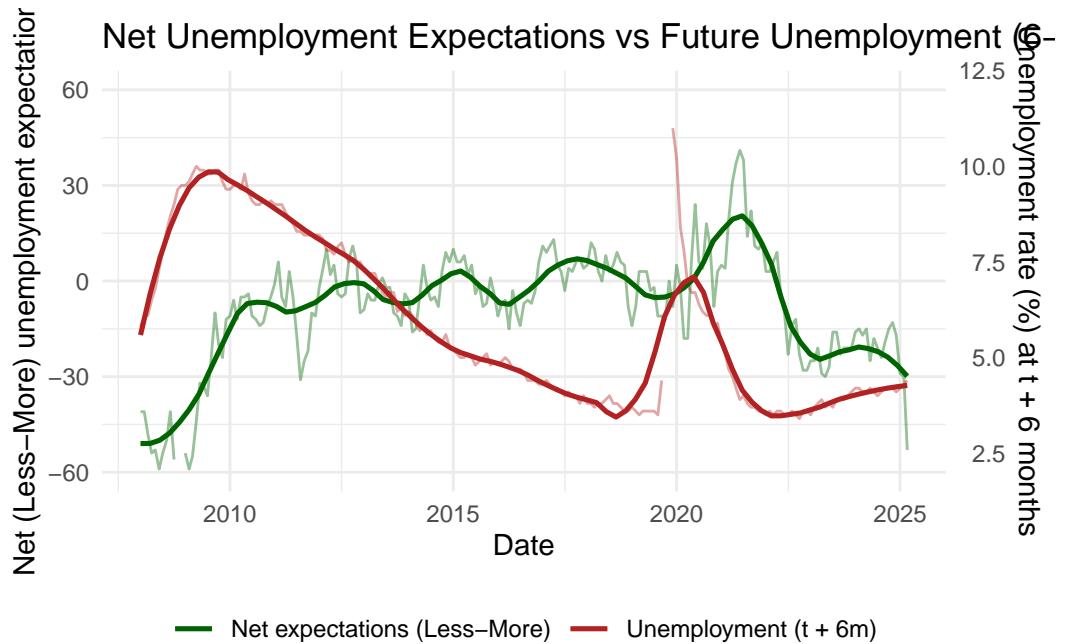


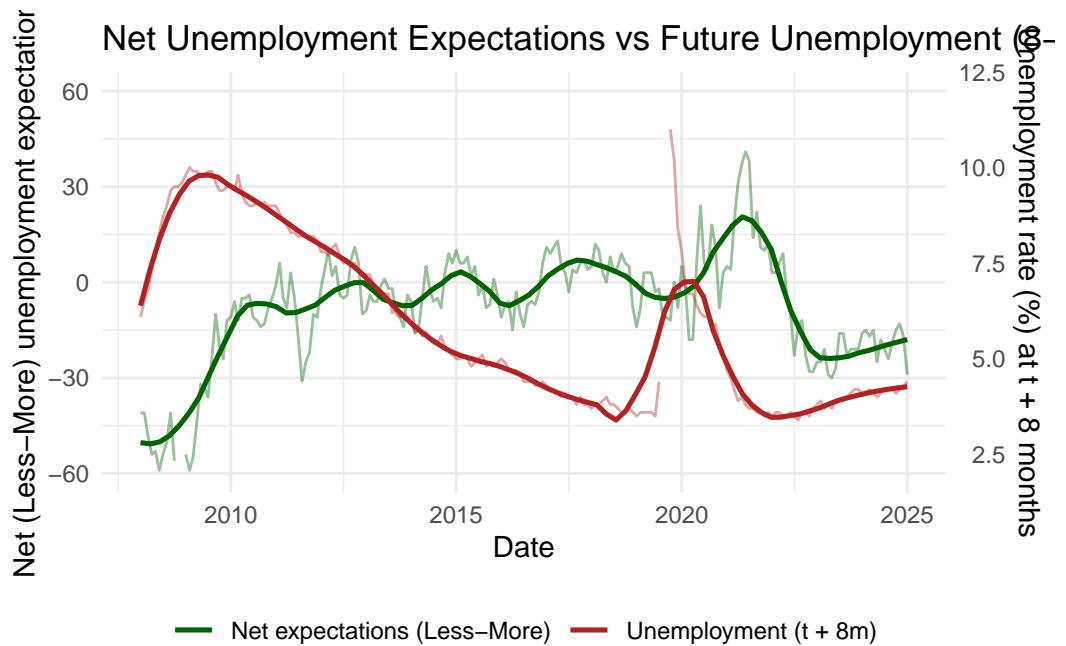
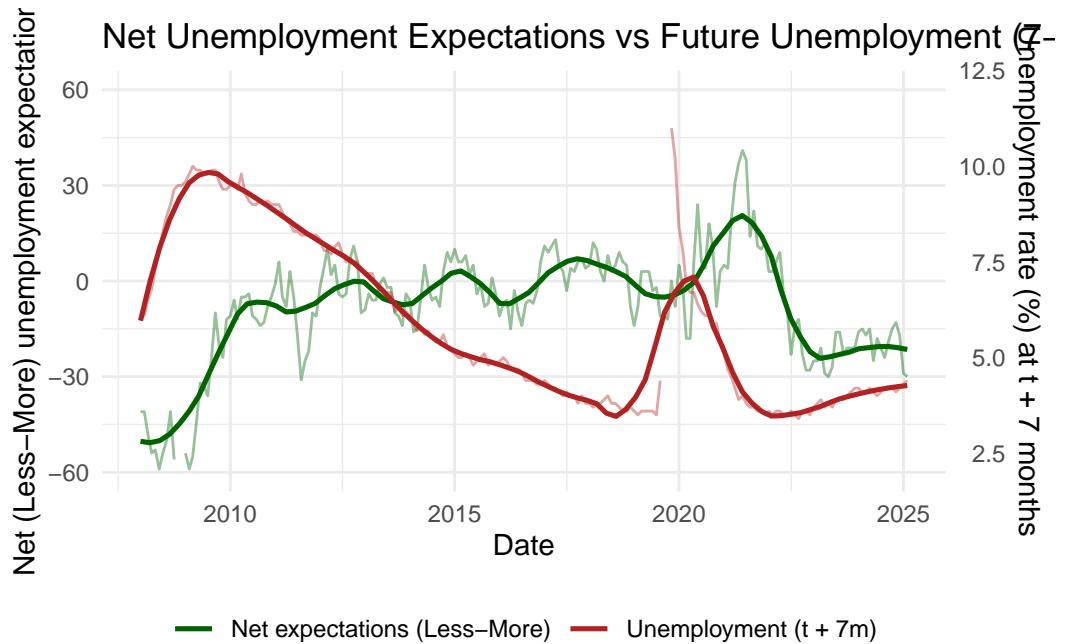
- MAKE A CONCLUSION & INDICATION HERE!

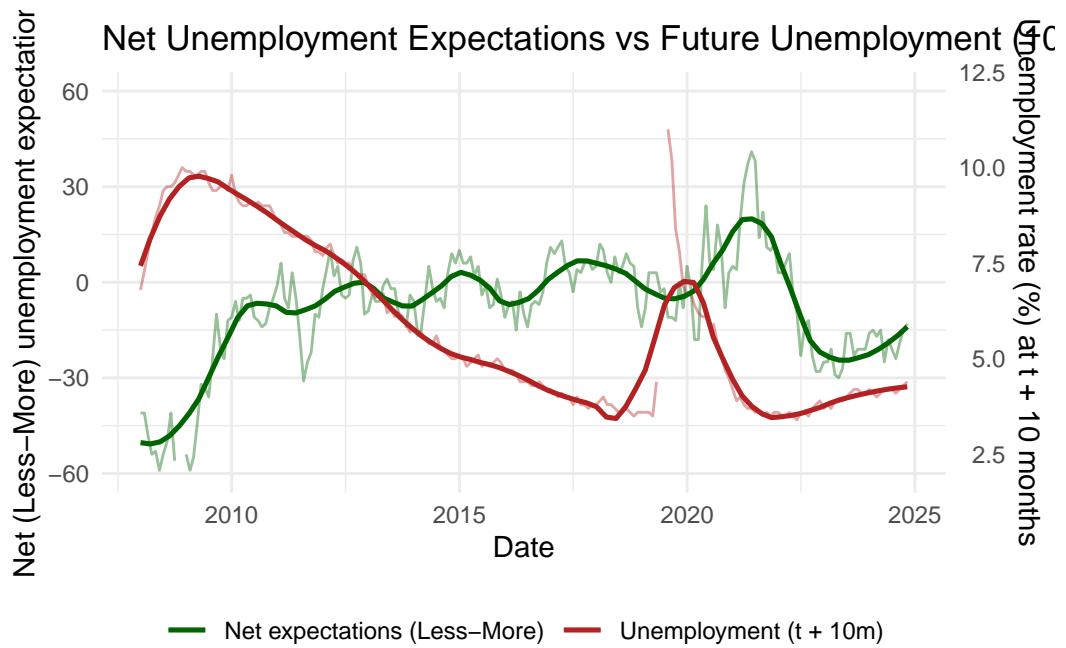
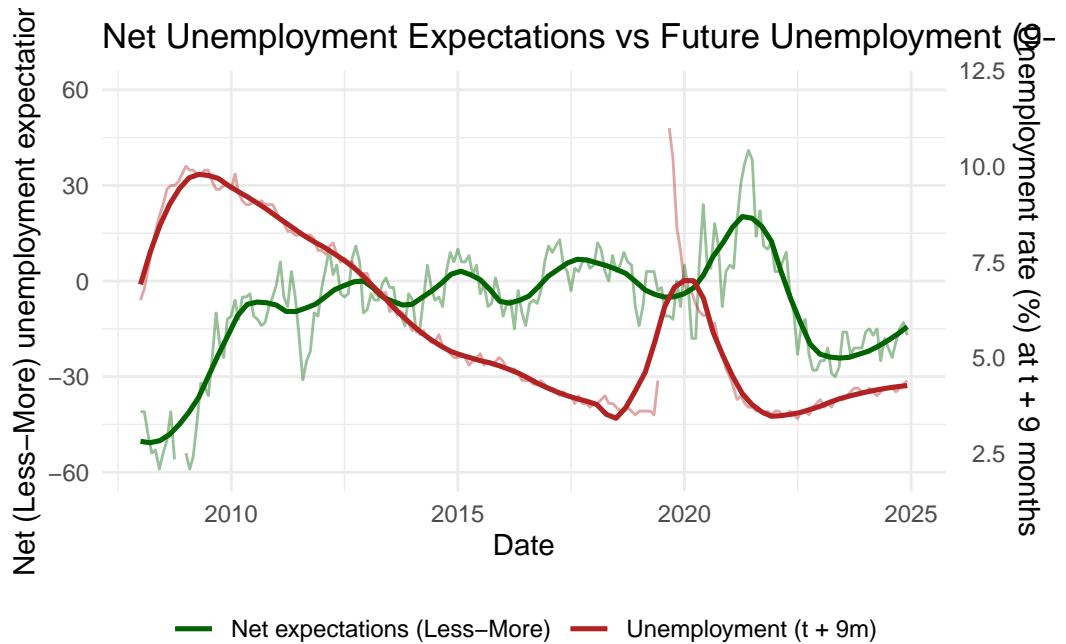
**Visualization 3. Time series of net expectations vs actual unemployment -
NEED TO FINE TUNE PLOT SIZES FOR ALL PLOTS**

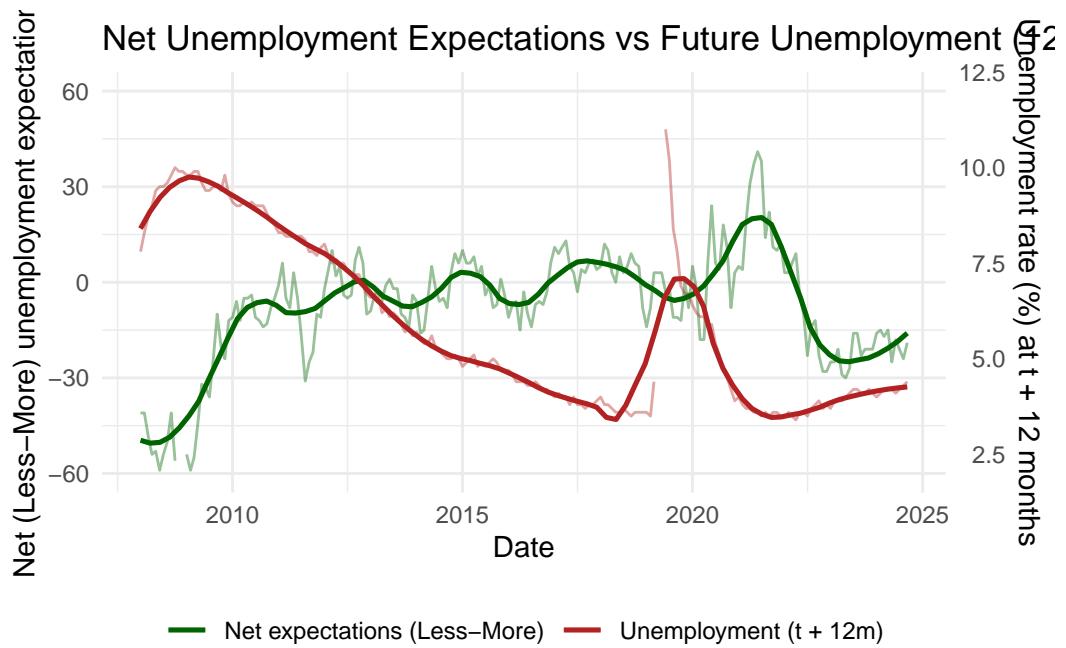
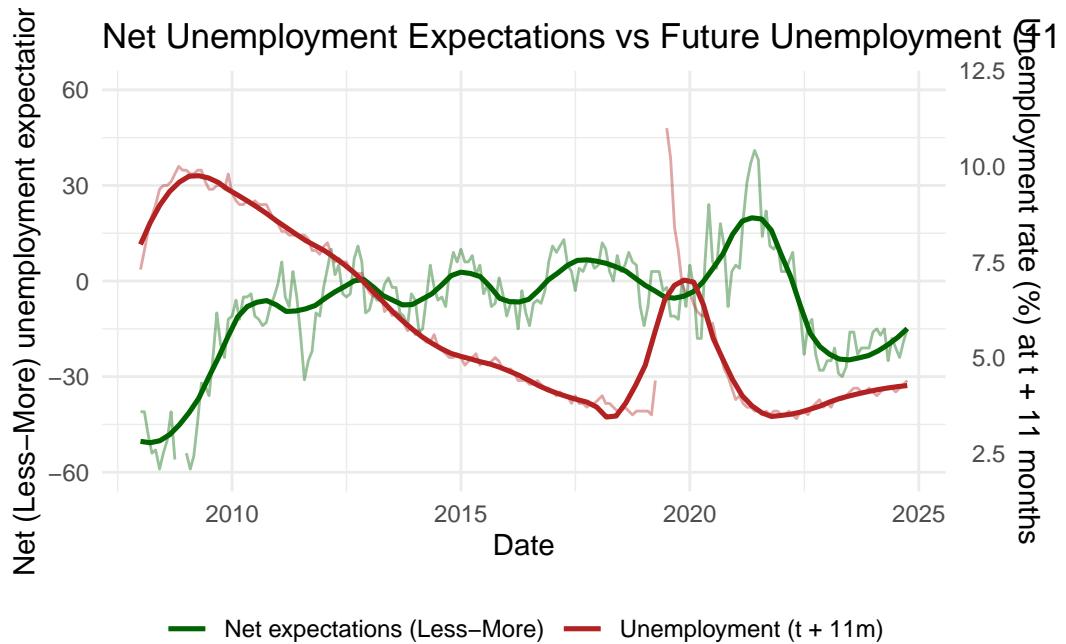












- EXPLAIN LOGISTICS
- MAKE A CONCLUSION & INDICATION HERE!

Implications

SOME REAL WORLD INDICATIONS.

Conclusion & Outlook

Limitation

Working repo could be found at:

<https://github.com/zzeng05/ZENG1-LIU2-727FINAL-scaVSeply.git>

References

<https://data.sca.isr.umich.edu/data-archive/mine.php>

<https://www.bls.gov/cps>

<https://www.bls.gov/ces>