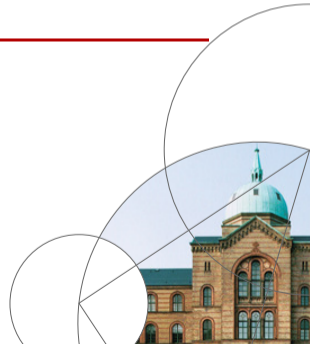


Subjective Unemployment Expectations and Precautionary Behavior in the Shadow of Peer Job Loss

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How Do Individuals Prepare for Job Loss under Uncertainty?

- The labor market is inherently uncertain. Workers must still decide how to prepare for potential adverse shocks under uncertainty.
- Personal experience may be scarce, especially for younger or low-tenure workers.
- Formal labor market statistics are often delayed, aggregated, and hard to map onto individual risk.
- Peer job loss is timely, salient, and potentially informative - but do individuals treat it as such?

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In This Paper

How are individuals' subjective unemployment expectations and self-insurance behavior systematically related to unemployment experiences within their social networks?

Data and Empirical Strategy

- Combine Danish survey and administrative data.
- Map peer networks: family, coworkers, classmates.
- Focus on *second-degree peers* to account for selection and control for residual confounding via rich fixed effects and past unemployment history.



Key Findings

- Signals are informative: Peer unemployment predicts actual unemployment.
- Subjective unemployment expectations systematically related to recent peer unemployment experiences → Suggesting that individuals incorporate information about their peers' unemployment shocks into their subjective unemployment expectations
- Respondents adjust behavior in a precautionary manner: More UI take-up and transitions to lower-turnover jobs

Three Domains of Social Networks

Danish administrative data for the entire Danish population allows me to construct networks in three domains ▶ Number of Peers



Family

- Nuclear family members: Parents, siblings and partners



Colleagues

- Individuals who have worked with the same employer, at the same plant, in the past two years



Classmates

- Individuals who graduated with the same degree, from the same institution, in the same year

Subjective Unemployment Expectations Elicited through Survey

Subjective expected unemployment probability elicited through survey

- Main survey conducted in 2010-2016.
- Random sample of Danes who were active in the labor market at the time of the survey. Pool of revenants and new respondents each year.
- Respondents were asked about their expectations about future unemployment using *probabilistic questions*, inspired by Manski (1993).

Survey Question

How do you assess the probability that you will experience a period without a job during the coming year? I would like you to state a number between 0 and 100, in which 0 means that you believe that, with certainty, the event will not occur and 100 means that you believe, with certainty, that the event definitely will occur.

▶ Distribution of Responses

Identification Relies on Second-Degree Peers

Exploit variation in unemployment shocks among **second-degree peers** (Bramoullé et al., 2009; De Giorgi et al., 2010).

To further account for other information sources...

- Exclude all second-degree ties that are located in the same municipality to avoid endogeneity from local labor markets.
- Include respondent-level fixed effects (Municipality \times year, industry \times year, occupation \times year and education \times year) to control for more general common shocks.
- Control for respondents' own unemployment histories to reduce the risk that unobserved factors driving both expectations and actual labor market outcomes bias my estimates.

▶ Number of Second Degree Peers

▶ Summary Statistics

▶ Distribution of USS

▶ Regression

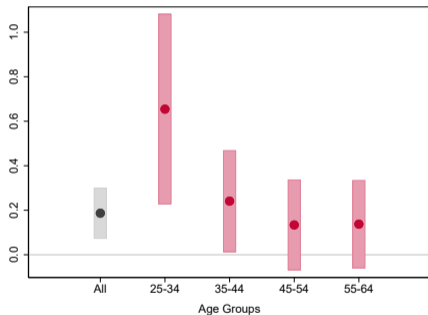
Table 1: Unemployment Risk, $U_{i,t+1}$

| | (1) | (2) | (3) | (4) |
|---------------|---------------------|---------------------|---------------------|---------------------|
| $USS_{i,t}$ | 0.716*** (0.062) | 0.403*** (0.046) | 0.525*** (0.066) | 0.268*** (0.051) |
| Constant | -0.011** (0.005) | -0.056 (0.043) | 0.005 (0.005) | -0.069 (0.044) |
| Observations | 23,159 | 23,159 | 23,159 | 23,159 |
| Controls | | ✓ | | ✓ |
| Fixed Effects | | | ✓ | ✓ |

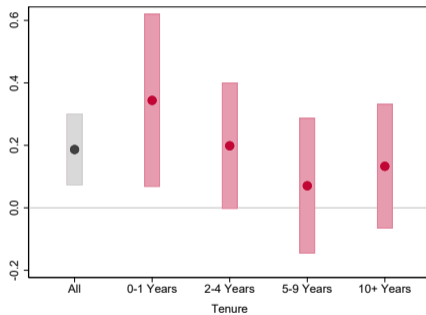
Table 2: Subjective Unemployment Expectations, $E_{i,t}[U_{i,t+1}]$

| | (1) | (2) | (3) | (4) |
|---------------|---------------------|---------------------|---------------------|---------------------|
| $USS_{i,t}$ | 0.560*** (0.056) | 0.356*** (0.049) | 0.366*** (0.065) | 0.187*** (0.058) |
| Constant | 0.069*** (0.005) | 0.087* (0.045) | 0.085*** (0.006) | 0.073 (0.048) |
| Observations | 23,159 | 23,159 | 23,159 | 23,159 |
| Controls | | ✓ | | ✓ |
| Fixed Effects | | | ✓ | ✓ |

Figure 1: Estimate Size by Respondent Age and Tenure



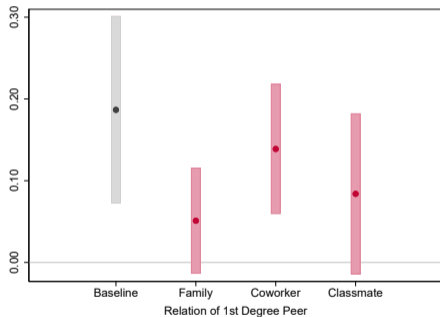
(a) By Respondent Age



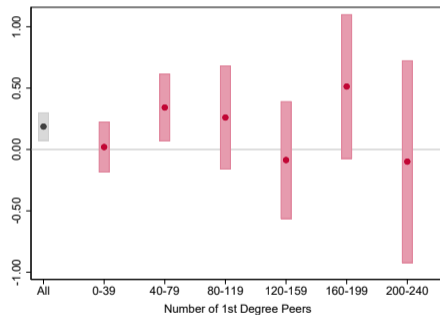
(b) By Respondent Tenure

Estimated Relationship by Source of Information

Figure 2: Estimate Size by Information Source and Size of Network



(a) By Type of 1st Degree Peer



(b) By Size of 1st Degree Network

Interpreting the Findings: Risk, Beliefs, and Signals

- **Systematic relationship between peer unemployment experiences and subjective unemployment expectations**

→ Suggests that individuals internalize socially observable signals when forming unemployment risk beliefs.

- **Expectations updating is selective and structured**

→ Stronger effects when information shared by colleagues, and for individuals with less experience of their own (younger, low-tenure workers).

- **Implication:**

The patterns are consistent with individuals forming expectations under uncertainty using observed peer outcomes as partial, socially proximate signals of risk.

Next Step

Do individuals act on these expectations? I examine whether exposure to peer job loss also predicts precautionary behavior.

Precautionary Behavior

Table 3: Precautionary Behavior

| | Unemployment Insurance | | Job Transition | | Lower Turnover | |
|---------------|------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| | (1) OLS | (2) Probit | (3) OLS | (4) Probit | (5) OLS | (6) Probit |
| $USS_{i,t}$ | 0.505*** (0.098) | 0.518*** (0.100) | 0.150* (0.108) | 0.187** (0.077) | 0.136** (0.058) | 0.196** (0.060) |
| Constant | 0.637*** (0.076) | | 0.147** (0.071) | | 0.000 (0.039) | |
| Observations | 23,159 | 21,786 | 20,395 | 18,614 | 20,163 | 16,010 |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Fixed Effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

- In uncertain labor markets, individuals must prepare for potential job loss using limited, noisy information. Peer job loss may function as an informal signal of personal risk.
- **Key findings:**
 - Peer job loss predicts both subjective unemployment expectations and actual unemployment outcomes.
 - Belief updating is stronger when signals come from colleagues and among younger or low-tenure individuals—consistent with information use under uncertainty.
 - Exposure to peer job loss is associated with precautionary behavior: Increased private UI uptake and transitions to more stable jobs.

Thank you!

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References i

- Bramoullé, Y., H. Djebbari, and B. Fortin (2009). Identification of Peer Effects Through Social Networks. *Journal of Econometrics* 150(1), 41–55.
- De Giorgi, G., M. Pellizzari, and S. Redaelli (2010). Identification of Social Interactions through Partially Overlapping Peer Groups. *American Economic Journal: Applied Economics* 2(2), 241–275.
- Manski, C. F. (1993). Dynamic choice in social settings Learning from the experiences of others*. Technical report.

Number of Identified First Degree Peers

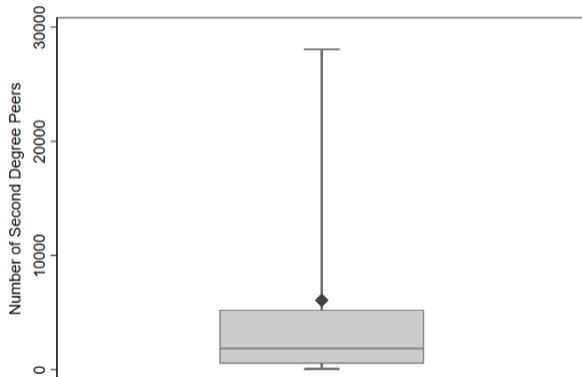
Table 4: Number of Identified Peers

| | Family Members | Coworkers | Classmates | All |
|---------|----------------|-----------|------------|--------|
| Median | 4.00 | 20.00 | 29.00 | 82.00 |
| Average | 3.67 | 148.72 | 61.59 | 213.98 |

▶ Back

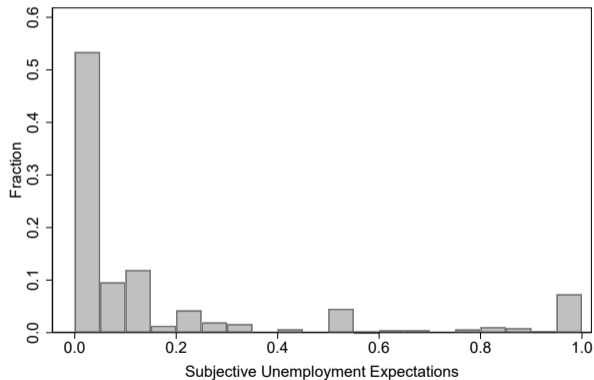
Distribution of Second-Degree Peers

Figure 3: Distribution of Second-Degree Peers



Distribution of Subjective Unemployment Expectations

Figure 4: Distribution of Subjective Unemployment Expectations



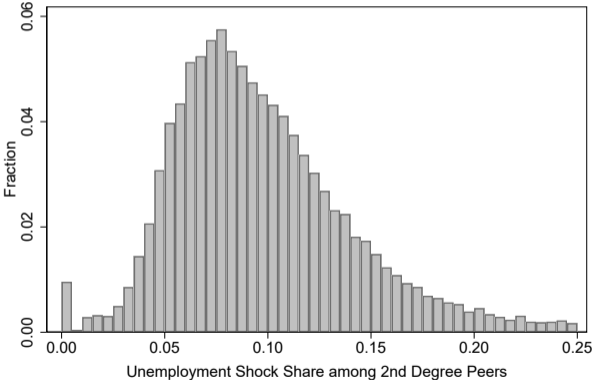
Summary Statistics

Table 5: Summary Statistics

| | Full Population | Respondents | 1 st Degree Peers | 2 nd Degree Peers |
|-----------------------------------|-----------------|-------------|------------------------------|------------------------------|
| Female | 0.51 | 0.51 | 0.54 | 0.49 |
| Age | 49.96 | 51.19 | 46.65 | 46.30 |
| Single | 0.39 | 0.23 | 0.28 | 0.41 |
| Unemployment | 0.05 | 0.03 | 0.03 | 0.05 |
| Self-Employed | 0.04 | 0.06 | 0.03 | 0.05 |
| Primary Educ. and High School | 0.34 | 0.18 | 0.09 | 0.39 |
| Vocational and Short Higher Educ. | 0.37 | 0.43 | 0.41 | 0.38 |
| Intermediate Higher Education | 0.16 | 0.24 | 0.29 | 0.14 |
| Long Higher Education | 0.09 | 0.14 | 0.20 | 0.06 |
| Gross Income (DKK) | 330,942 | 437,852 | 463,022 | 310,173 |
| Assets (DKK) | 954,146 | 1,405,762 | 1,206,135 | 894,574 |
| Debt (DKK) | 561,133 | 867,442 | 819,072 | 546,685 |
| Homeowner | 0.47 | 0.69 | 0.63 | 0.45 |
| Observations | 4,437,851 | 11,511 | 930,598 | 3,174,845 |

Distribution of Unemployment Shock Shares

Figure 5: Distribution of Unemployment Shock Shares



I Regress The Outcome of Interest on USS

To estimate how the individual's subjective unemployment expectations relate to peer unemployment experiences, I estimate

$$E_{i,t}[U_{i,t+1}] = \beta_0 + \beta_1 USS_{i,t} + \beta_2 X_{i,t} + \gamma_{m,t} + \phi_{w,t} + \delta_{o,t} + \eta_{e,t} + \varepsilon_{i,t} \quad (1)$$

- $E_{i,t}[U_{i,t+1}]$ is subjective unemployment expectations
- $USS_{i,t}$: Unemployment shock share among second-degree peers
- $\gamma_{m,t}$, $\phi_{w,t}$, $\delta_{o,t}$, $\eta_{e,t}$ are municipality \times year, industry \times year, occupation \times year and education \times year.

Subjective Unemployment Expectations Predict Actual Unemployment

Figure 6: Actual Unemployment vs. Subjective Unemployment Expectations

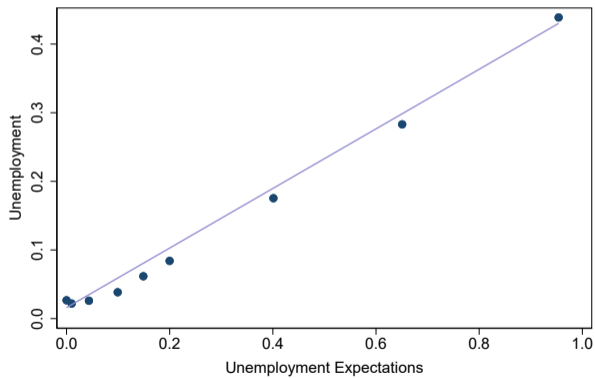


Table 6: Subjective Unemployment Expectations, $E_{i,t}[U_{i,t+1}]$

| | (1) | (2) | (3) | (4) |
|--------------------|---------------------|---------------------|---------------------|-------------------|
| $U\tilde{S}_{i,t}$ | 0.062 (0.038) | 0.041 (0.036) | 0.009 (0.037) | 0.010 (0.036) |
| Constant | 0.110*** (0.004) | 0.094*** (0.003) | 0.098*** (0.003) | 0.087* (0.047) |
| Observations | 23,159 | 23,159 | 23,159 | 23,159 |
| Controls | | ✓ | | ✓ |
| Fixed Effects | | | ✓ | ✓ |

Heterogeneity in Effect Size by Network Size

Figure 7: Effect Size by Number of First Degree Peers

