Consumption effects of job loss expectations – new evidence for the euro area

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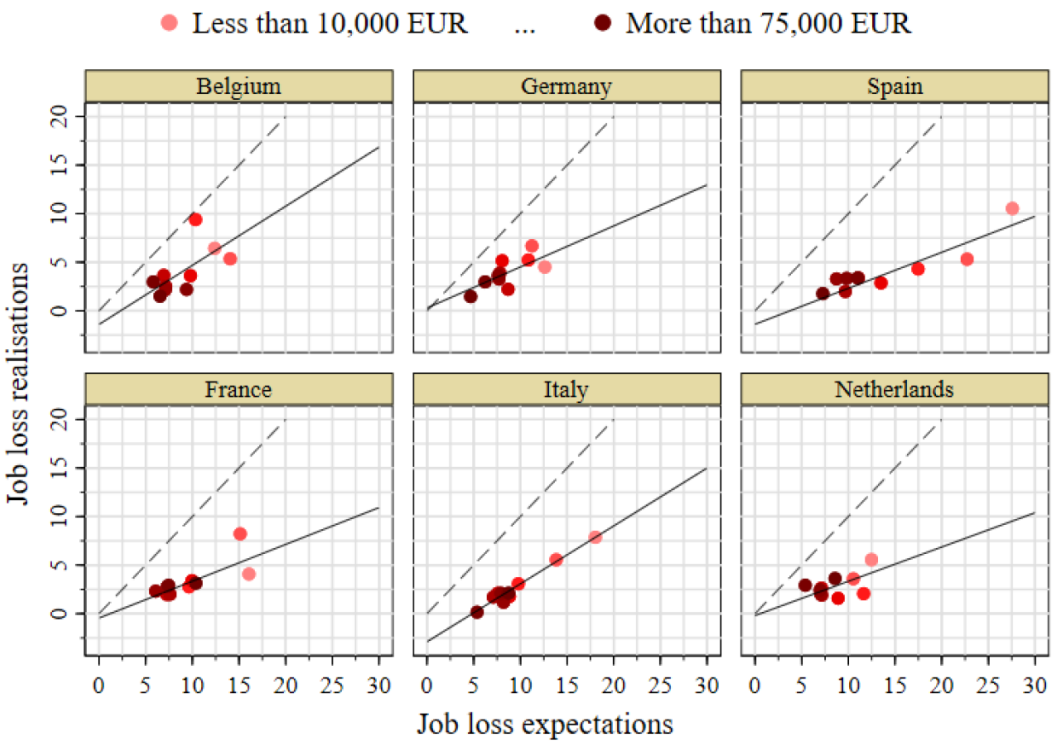
Work in progress

Motivation

Probability and expectations of job loss
(probability by country and income bracket)



Note: The markers show average quarterly job loss expectations and realisations for ten different income brackets for each country between October 2020 and April 2022. The brackets are not equally spaced but ordered by increasing intensity of red. The solid lines show weighted linear regression slopes by country and the dashed lines mark the 45 degree line of accurate expectations Source: CES data.

- Workers seem to have some private information about their job risk
- However, there is a large individual and regional heterogeneity that could be exploited
- Permanent Income Hypothesis (PIH):
  - expected job loss should have no behavioural response
  - unexpected job loss should be associated with consumption drop

Research question

Is there a link between job loss expectations and consumption behaviour?

Previous literature:

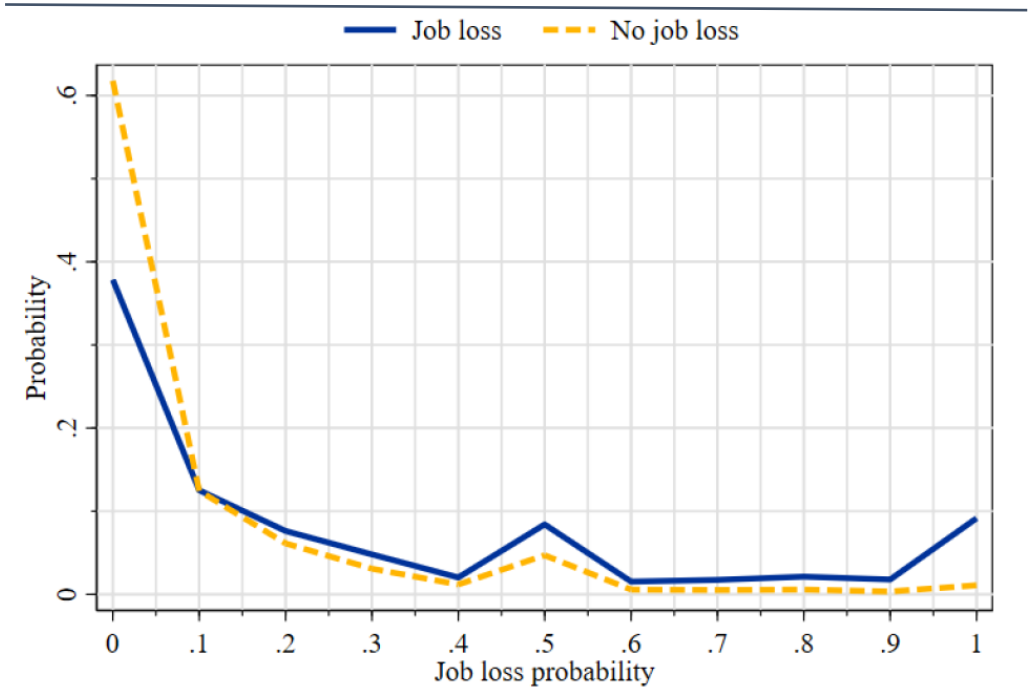
- Consumption reaction to persistent income shock (see Meghir and Pistaferri 2011 for an overview)
- Exploit timing variation: consumption drops in advance of predictable job loss (e.g. Hendren 2017)
- Predictive value of survey expectations for labour markets (Manski and Straub 2000)
- Mixed results on consumption drop of unexpected job loss exploiting elicited job loss expectations (Stephens 2004, Pettinichi and Vellekoop 2019)

This paper:

1. Job loss expectations are **consistent** with other expectations and survey results
2. Job loss expectations are **predictive** of actual job loss
3. Job loss expectations are **consequential** w.r.t. consumption, but depending on shock persistence

Job loss expectations

Histogram of job loss expectations
(by displacement status)



Note: The lines show the distribution of job loss expectations aggregated into 11 bins by displacement status in $t+1$. Source: CES data.

- Job loss expectations are strongly right skewed
  - More than 40% of respondents expect a zero probability of job loss
  - There is some bunching of replies at 0%, 50% and 100%
- Workers who lose their job have higher job loss expectations
  - Their job loss expectations are significantly less frequently at zero
  - Around 10% expected an (almost) certain job loss

Permanent income hypothesis

- Lifetime utility maximisation given a standard budget constraint:
  - $\max_{\{c_{t+s}\}_{s=0}^{\infty}} E_t \sum_{s=0}^{\infty} \beta^s u(c_{t+s})$ subject to: $A_{t+1} = (y_t - c_t + A_t)(1+r)$

- Assuming quadratic utility and $\beta(1+r) = 1$ gives the Euler equation: $c_t = E_t(c_{t+1})$
- Solving the budget constraint forward gives the **permanent income hypothesis (PIH)**:

$$c_t = \frac{r}{1+r}\left[A_t + \sum_{s=0}^{\infty} \frac{E_t(y_{t+s})}{(1+r)^s}\right]$$

- First differencing gives:

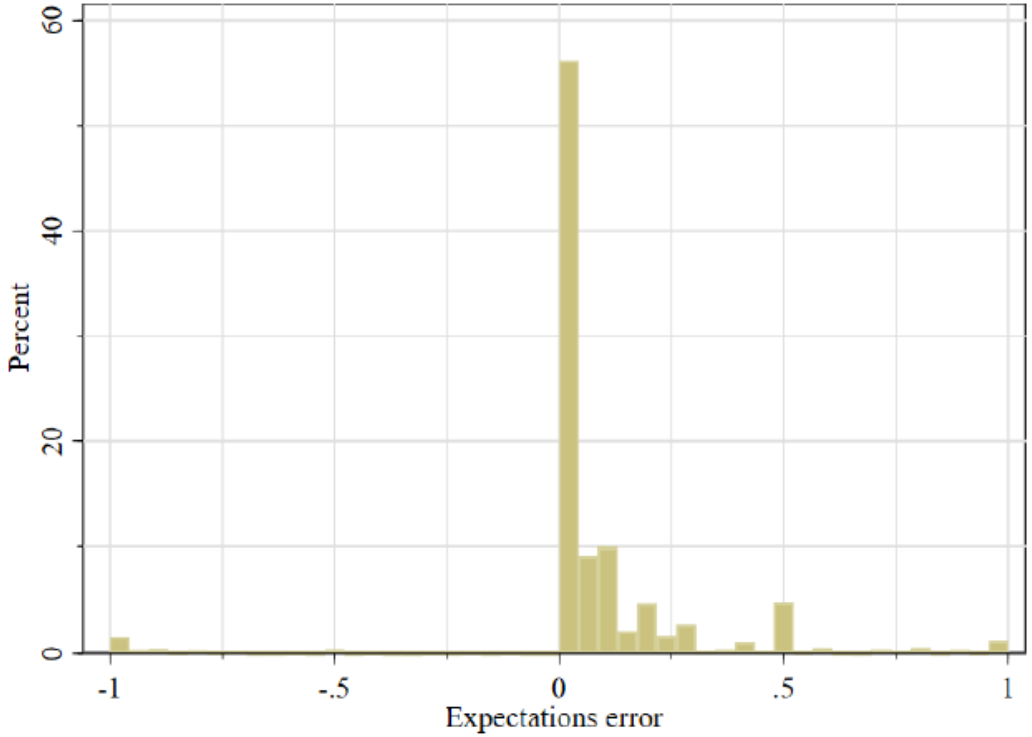
$$\Delta c_{t+1} = \frac{r}{1+r}\left[-(E_t(y_{t+1}) - y_{t+1}) + \sum_{s=2}^{\infty} \frac{(E_{t+1} - E_t)y_{t+s}}{(1+r)^{s-1}}\right]$$

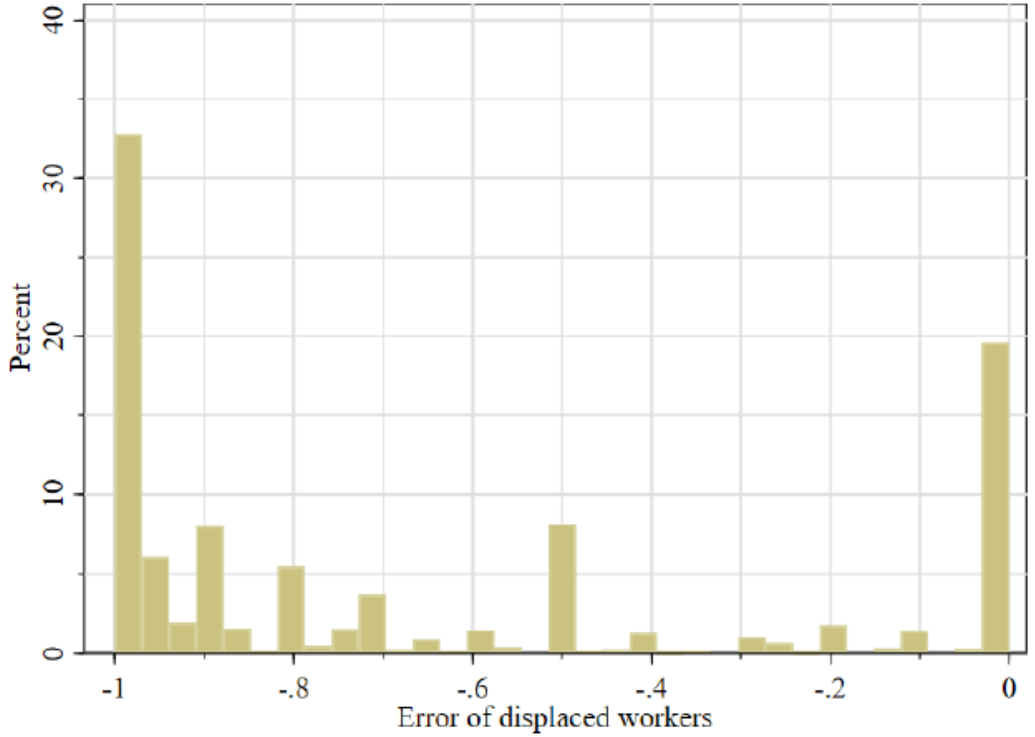
- Hence, current consumption growth is…
  - …affected by the current income expectation error (driven by job loss)
  - …affected by the change of expectations about future income (driven by job loss **persistence**)

Empirical approach

- Define expectation error of individual i at time t (Stephens 2004):

$$ExpError_{it} = E_t[P(jobloss_{it+1})] - 1(jobloss_{it+1}) \in [-1,1]$$





Note: The figure on the left shows a histogram of the expectations error. The figure on the right shows a histogram only for workers who lost their job in $t+1$. Source: CES data.

Empirical approach

- Define expectation error of individual i at time t (Stephens 2004):

$$ExpError_{it} = E_t[P(jobloss_{it+1})] - 1(jobloss_{it+1}) \in [-1,1]$$

- Split expectation error into positive and negative expectation component:

$$\Delta c_{it+1} = \alpha + \beta_1 ExpError_{it}^{+} + \beta_2 ExpError_{it}^{-} \quad \{+\beta_3 1(jobloss_{it+1})\} \quad + \boldsymbol{X}_{it}\boldsymbol{\gamma} + \varepsilon_{it}$$

where c_{it} is (log) consumption,

$\boldsymbol{X}_{it}$ is matrix of controls (country, date, gender, tenure, income, education, age group, partnership status and HH size),

$ExpError_{it}^{+} = max\{ExpError_{it}, 0\} \geq 0$ (unexpected job retainment) and

$ExpError_{it}^{-} = min\{ExpError_{it}, 0\} \leq 0$ (unexpected job loss)

- Hence, if $\beta_2 > 0$, then unexpected job loss affects consumption (growth)
- If an additional dummy for job loss is added, then this captures the pure expectation effect

Main results

	(1)	(2)	(3)	(4)
Expectations error	0.0364*			
	(0.0181)			
Positive errors		-0.0309	-0.0288	
		(0.0198)	(0.0197)	
Negative errors		0.1271***	0.1894*	
		(0.0346)	(0.0738)	
Displacement			0.0563	-0.0807**
			(0.0594)	(0.0280)
Country FE	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N	29379	29379	29379	29379
Unique N	8352	8352	8352	8352
N displaced	927	927	927	927
Neg. error	-0.81	-0.81	-0.81	-0.81
R2	0.01	0.01	0.01	0.01

Note: The table depicts the results of an OLS regression. The dependent variable is the logarithmic growth of total consumption in euros between t and $t+1$. Robust standard errors clustered on individual level in parenthesis. "Neg. error" is the average of the negative values of the expectation error. Stars denote significance levels of two-sided t-tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- Total expectations error related to adjustment in consumption growth
- We find an effect of completely unexpected job loss on overall consumption of 0.13 log points
- This is also a large absolute effect given an annual consumption of 19,300€ of employed workers
- Controlling for displacement itself shows that the effect is mostly driven by the expectation error

Heterogeneity: Regional unemployment rate

	Food		Total	
	Low UE	High UE	Low UE	High UE
Positive errors	-0.0234	-0.0085	-0.0836*	-0.0052
	(0.0394)	(0.0247)	(0.0375)	(0.0231)
Negative errors	-0.0028	0.1177	0.0790	0.2386*
	(0.1162)	(0.0779)	(0.0966)	(0.0927)
Displacement	-0.0947	0.0083	-0.0409	0.0926
	(0.1028)	(0.0558)	(0.0766)	(0.0734)
Country FE	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N	10388	19512	10114	19265
Unique N	2977	5433	2946	5406
N displaced	296	643	292	635
Neg. error	-0.89	-0.77	-0.89	-0.77
R2	0.00	0.01	0.01	0.02

Note: The table depicts the results of an OLS regression. The dependent variable is the logarithmic growth of food consumption (columns 1 and 2) and of total consumption (columns 3 and 4) in euros between t and $t+1$. Robust standard errors clustered on individual level in parenthesis. "Neg. error" is the average of the negative values of the expectation error. Stars denote significance levels of two-sided t-tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- Consumption drop is stronger for workers in regions with higher unemployment rates
- Similar results for older or less educated workers
- Unemployment persistence might be channel driving these findings
- PIH would predict a stronger effect on consumption in case of more persistent income shock

Summary and policy implications

- PIH holds (asymmetrically?)

  1) Consumption drops considerably after unexpected job loss

  2) Effect is stronger if higher regional unemployment rate, older age or lower education
     → suggests consumption reaction related to re-employment probability

- Implications for fiscal and monetary policy

  1) Job loss expectations as useful signal of business cycle status

  2) PIH holds → consumption and inflation might react even before labour market is affected

  3) Small effect of unexpected job retainment → reduces effectiveness of job retention schemes