

DISCUSSION OF “RISK, UNEMPLOYMENT, AND THE  
STOCK MARKET: A RARE-EVENT-BASED  
EXPLANATION OF LABOR MARKET VOLATILITY”

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# OVERVIEW

- Combines two distinct research programs:
  - ① Time-varying discount rates as the shocks driving labor market fluctuations: [Yashiv \(2000, 2014\)](#); [Hall \(2014\)](#).
  - ② Time-varying rare disaster risk as the shock driving variations in equity premia: [Rietz \(1988\)](#); [Barro \(2006\)](#); [Gabaix \(2012\)](#); [Gourio \(2012\)](#); [Wachter \(2013\)](#).
- Exposition is really clear.
- Quantitative success.
- Bottom line I: if time-varying rare disaster risks are salient for asset pricing and business cycle facts, they also can explain labor market outcomes.
- Bottom line II: many of the issues raised in response to the DMP model and to the rare disaster framework also apply here.

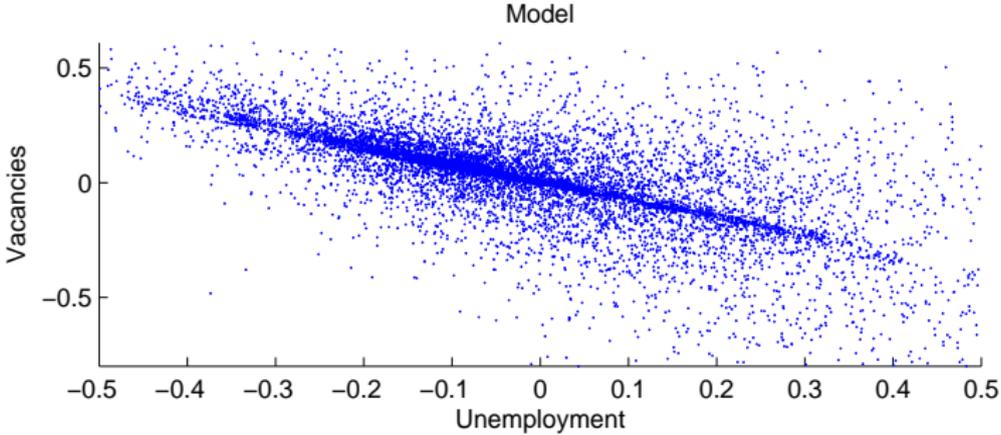
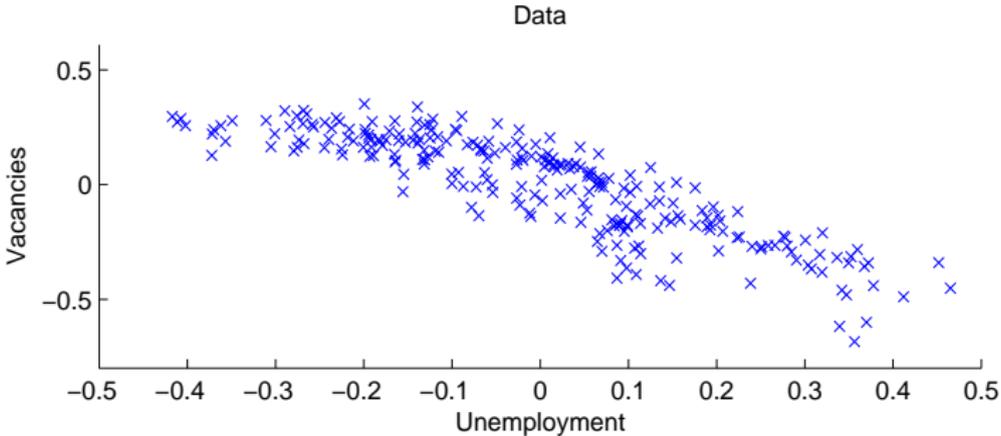
# TIME-VARYING RARE DISASTER RISKS CAN EXPLAIN LABOR MARKET OUTCOMES

$$\underbrace{\frac{\kappa_t}{q(\theta_t)}}_{\text{Hiring cost}} = \mathbb{E}_t \sum_{\tau=1}^{\infty} \underbrace{(1-s)^{\tau-1}}_{\text{Prob. match still exists}} \underbrace{M_{t,t+\tau}}_{\text{SDF}} \underbrace{(Z_{t+\tau} - W_{t+\tau})}_{\text{Period profits}}.$$

Two puzzles in macro-labor literature:

- 1 LHS ( $\theta_t$ ) not volatile conditional on change in  $Z_t$  (Shimer puzzle).
  - ▶ Solution in this paper: impose wage rigidity.
- 2 LHS ( $\theta_t$ ) unconditionally uncorrelated with  $Z_t$  (productivity-tightness disconnect).
  - ▶ Solution in this paper: disaster probability shocks which affect both expectations of future  $Z$  and the SDF without going through current  $Z$ .
  - ▶ Minor quibble:  $Z_t$  is marginal revenue product, not true labor productivity.

# QUANTITATIVE SUCCESS



## DMP ISSUES THAT APPLY HERE

- Wage stickiness really important quantitatively.
- Solution here is to externally impose some wage stickiness:

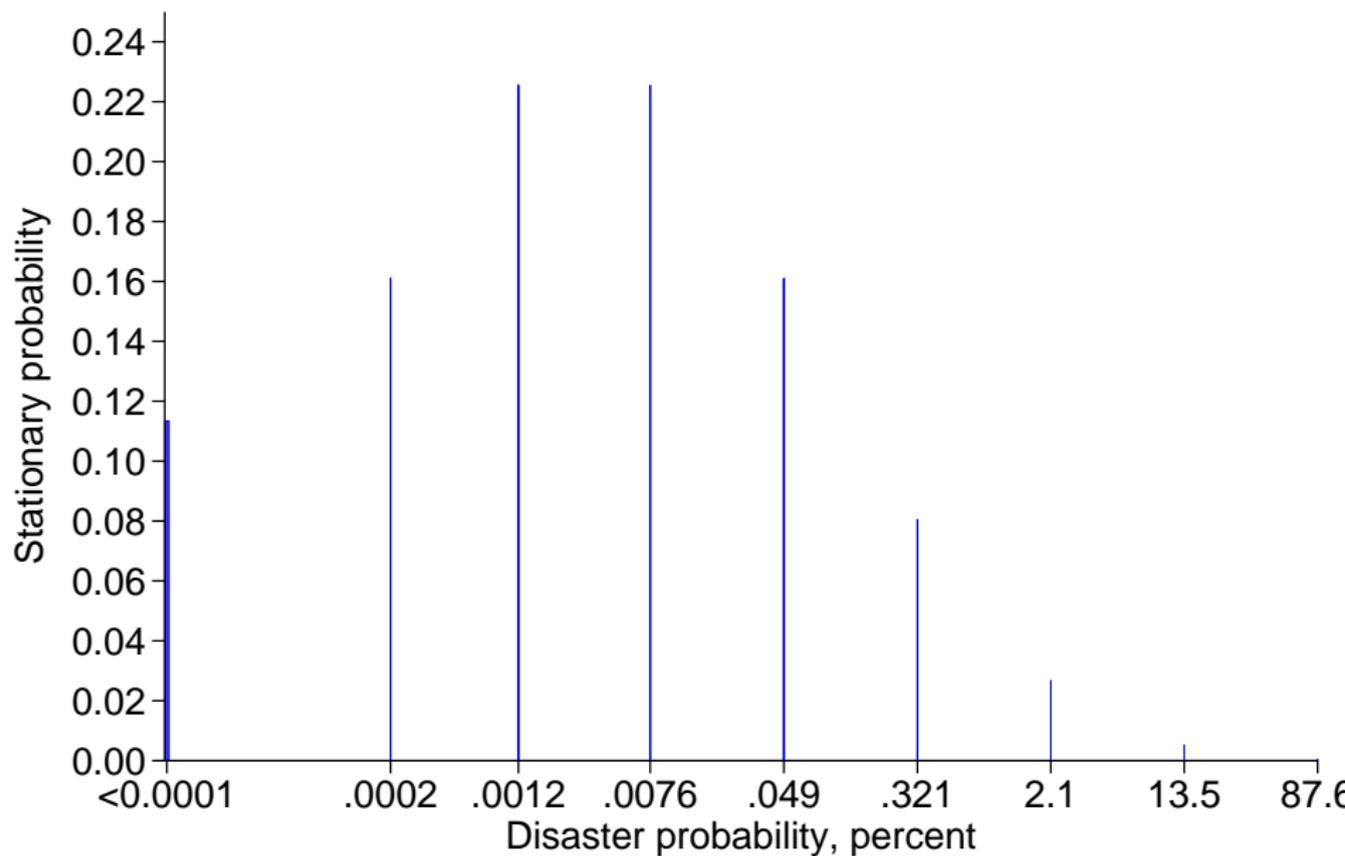
$$W_t = \nu W_t^N + (1 - \nu) W_t^I, \nu = 0.05.$$

- Calibration target for wage rigidity does not distinguish between wages of existing and new hires.
- In standard DMP model, wages of new hires relevant margin for hiring.
- Some evidence (Pissarides 2009, but see Gertler, Huckfeldt, Trigari 2015 for alternative view) of much higher wage flexibility of new hires than ongoing matches.
- Rigid wages of existing matches relevant here for volatility and cyclicity of dividends and equity returns, similar to Schoefer (2015).

## RARE DISASTER ISSUES THAT APPLY HERE

- How robust are quantitative results to small changes in parameters governing disaster probability or severity?
- Movements in disaster probability very small. Essentially impossible to confirm ex post.
- Slightly less bold claim for paper: joint movements in risk premia and risk free rates consistent with the data sufficient to generate volatile unemployment.
- Could calibrate disaster probability process to asset prices and then examine implications for unemployment rather than the reverse.
- More conditional correlations: e.g. risk free rate.
- Discount shocks that didn't bark: 1987, 1998.

# DISTRIBUTION OF RARE DISASTER PROBABILITIES



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# QUANTITATIVE SUCCESS

Table 6: Business Cycle and Financial Moments

	$\mathbb{E}[\Delta c]$	$\mathbb{E}[\Delta y]$	$\sigma(\Delta c)$	$\sigma(\Delta y)$	$\mathbb{E}[R - R_b]$	$\mathbb{E}[R_b]$	$\sigma(R)$	$\sigma(R_b)$
Data	1.97	1.90	1.78	2.29	5.32	1.01	12.26	2.22
Simulation 50%	2.16	2.16	2.28	2.47	6.66	3.64	19.78	3.83
Simulation 5%	1.80	1.79	1.59	1.71	-0.02	0.06	11.75	0.87
Simulation 95%	2.51	2.54	3.44	3.72	20.39	4.96	33.94	12.50
Population	1.63	1.63	6.85	6.89	13.32	1.22	38.97	12.19

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# PRODUCTIVITY VERSUS DISCOUNTS

- Time-varying disaster risk introduces two effects:
  - 1 Present value of worker's expected output disconnected from current productivity, allowing unemployment to move independent of current productivity.
  - 2 Discount rates fluctuate with disaster probability.
- Important to distinguish these effects.
- Useful exercise: report results from simulations with time-varying disaster risk and tightness-insulated wage but no risk aversion.

# SUMMARY

- Nice exposition.
- Quantitative success.
- Little to change priors:
  - 1 If you were skeptical of wage rigidity solving Shimer puzzle...
  - 2 If you were skeptical of rare disasters...