Discussion of "Labor Flow Shocks Matter for Asset Pricing" by Jian Chen, Chunmian Ge, Jiaquan Yao and Guofu Zhou

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Brief Summary

- empirically explores the potential links between aggregate labor net flows and the future stock market returns

- background: rising interests in the asset pricing implications of labor dynamics (structural and empirical) (Belo et al., 2014, 2017, 2020) and various employment measures (Edmans, 2011; Green et al., 2017; Fedyk and Hodson, 2020)

  - key findings: *unexpected* aggregate net labor inflows positively predict the expected stock market returns in *one-month*

  - key data sources: CV data from LinkedIn at individual level across firms (Tambe et al., 2020; Agrawal et al., 2021)

  - time-series identification: aggregation at the market level

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* a very interesting paper with rich and thought-provoking results

Roadmap for Comments

1. structural equations for motivating the research questions
2. the economics behind
3. empirical results
4. additional details

Recap

- structural equations:

$$r_{t+1} = \alpha_r + \beta_r H_t + \epsilon_{t+1} \tag{1}$$
$$H_{t+1} = \alpha_H + \beta_H H_t + e_{t+1} \tag{2}$$

  - labor hiring H_{t+1} has the expected component $H^E_{t+1} = \alpha_H + \beta_H H_t$
  - as of time t information set
  - the unexpected component $e_{t+1} = H_{t+1} - H^E_{t+1}$

- One-period ahead expected return on risky asset

$$\mathbf{E}_t r_{t+1} = \beta^E_r H^E_t + \beta^U_r e_t \tag{3}$$

- key: the expected component and the shocks both shift the future returns

1. Relative Contribution of Shocks and the Expectations

- currently, silent on β_r^E vs. β_r^U, elasticity of the expected returns w.r.t. expected hiring and the hiring shocks

  - some derivations

$$\begin{aligned}
\mathbf{E}_t r_{t+1} &= \alpha_r + \beta_r \mathbf{E}_t H_t \\
&= \alpha_r + \beta_r H_t \\
&= \alpha_r + \beta_r (\alpha_H + \beta_H H_{t-1}) + \beta_r e_t \\
&= \alpha_r + \beta_r (\mathbf{E}_{t-1} H_t) + \beta_r e_t \\
&= \alpha_r + \beta_r H_t^E + \beta_r e_t
\end{aligned}$$

  - implies that $\beta_r = \beta_r^E = \beta_r^U$, identical sign and magnitude
  - question: tests on the equality or comparability in the data? additional evidence on the validity of underlying model structure? some disconnections between this part and the empirics
  - so far, evidence on β_r^U (*shocks* predictability: positive and short-run) and on β_r^E (*level* predictability: negative and long-run)?

2. Derivations on the long-term expected return

- the structural equations may be less clear on *expectation conditions*, that is, one-period ahead expectation or expectation conditional on time t

  - some derivations

$$
\begin{aligned}
\mathbf{E}_t r_{t+1} &= \alpha_r + \beta_r(\mathbf{E}_{t-1} H_t) + \beta_r e_t \\
\mathbf{E}_{t+1} r_{t+2} &= \alpha_r + \beta_r \mathbf{E}_{t+1} H_{t+1} \\
&= \alpha_r + \beta_r(\alpha_H + \beta_H H_t + e_{t+1}) \\
&= \alpha_r + \beta_r(\mathbf{E}_t H_{t+1}) + \beta_r e_{t+1} \\
\mathbf{E}_t r_{t+2} &= \alpha_r + \beta_r \mathbf{E}_t H_{t+1} \\
&= \alpha_r + \beta_r \mathbf{E}_t(\alpha_H + \beta_H H_t + e_{t+1}) \\
&= \alpha_r + \beta_r(\alpha_H + \beta_H H_t) \\
\mathbf{E}_t r_{t+3} &= \alpha_r + \beta_r \mathbf{E}_t H_{t+2} \\
&\dots
\end{aligned}
$$

2. Derivation on the long-term expected return

- it matters for computing the long-term cumulative expected return
- given that history is not unfolded yet from $t+1$ onward
- Equation (4) on page 7 should be "sum over $\mathbf{E}_t r_{t+h}$ (1st correction) with a constant (2nd correction): $ER_{t\to t+n} = n\alpha_r + \beta_r \sum_{i=0}^{n-1}(\mathbf{E}_t H_{t+i})$
- in particular, cancelling of terms requires that the expectations conditional on time t only, i.e.

$$\begin{aligned}\mathbf{E}_t r_{t+h} =& \mathbf{E}_t(lnP_{t+1}) - lnP_t + \mathbf{E}_t(lnP_{t+2}) - \mathbf{E}_t(lnP_{t+1}) + ... \\ =& \mathbf{E}_t(lnP_{t+h}) - lnP_t\end{aligned}$$

3. Economics Behind: Expectation Specification

- the expected hiring is specified as $\mathbb{E}_t H_{t+1} = \alpha_H + \beta_H H_t$ following an AR(1) process with $\hat{\beta}_H \approx 0.87$
- question 1: unexpected shocks to labor flows for being "unexpected" or the specified expectation formation process is less accurate?
- many structural models with dynamic optimization

$$mc_t = \mathbb{E}_t F'(H_t)$$

- marginal gains from hiring/firing (e.g. productivity measures) and marginal costs (various wage, taxation, unemployment benefit proxies)
- question 2: robust to alternative specification of hiring expectations?
  - currently, appears to be like a *dynamic filtering* of permanent/low frequency trend from the residual short-run high-frequency perturbation series
  - labeling the residual terms as "unexpected" or, perhaps short-run innovations?

4. Labor Outflow Shocks

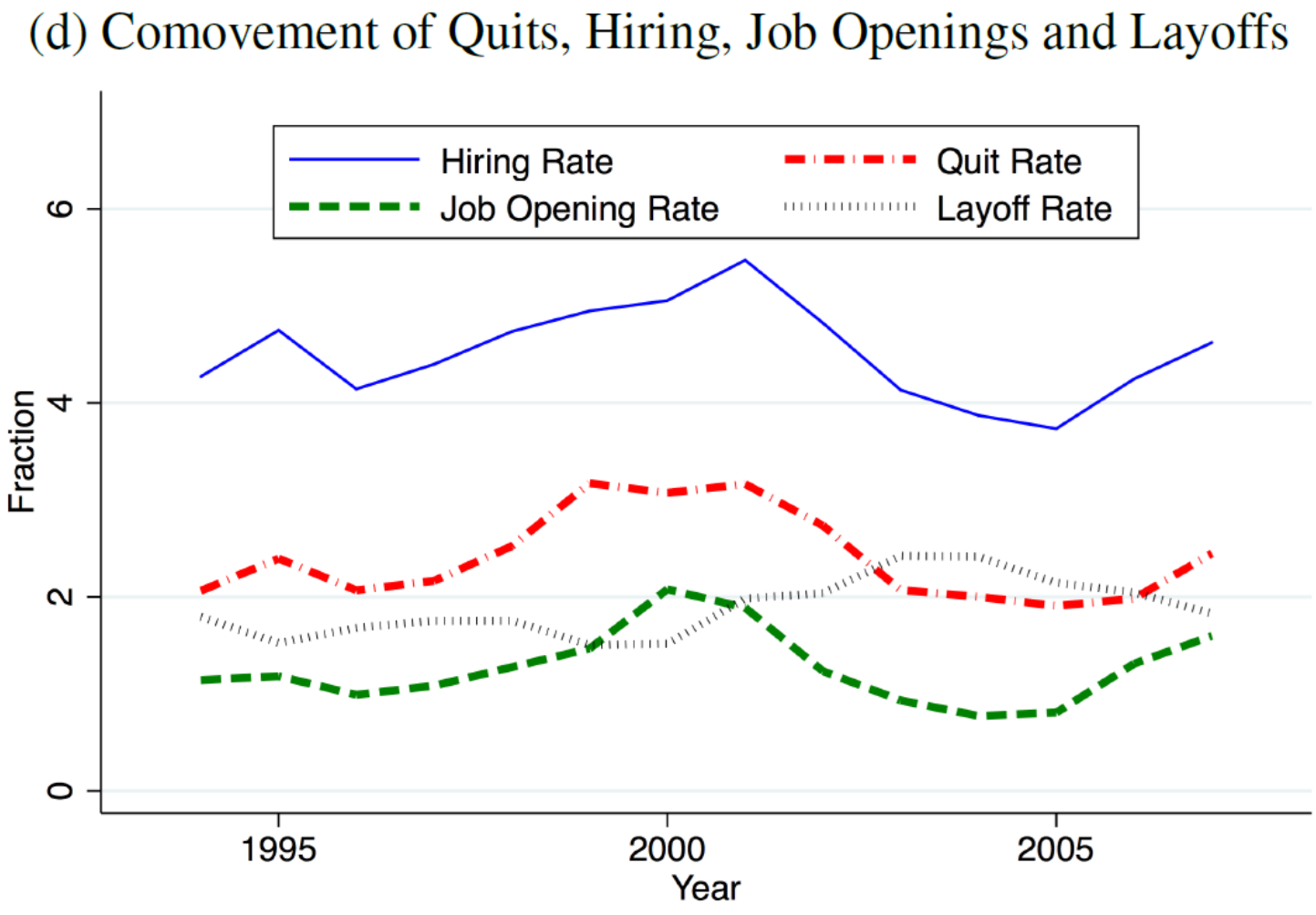
	β	NW-t	Hodrick-t	R^2 (%)
Panel A: Results for Labor Flow Shocks (L^{Unexp})				
$h = 1$	0.55	2.57**	2.55**	1.76
$h = 2$	0.23	1.43	1.36	0.61
$h = 3$	0.13	0.95	0.90	0.28
$h = 6$	0.12	1.13	1.13	0.40
Panel B: Results for Labor Inflow Shocks				
$h = 1$	0.13	0.46	0.43	0.09
$h = 2$	0.11	0.92	1.06	0.13
$h = 3$	0.14	1.45	1.59	0.31
$h = 6$	0.08	1.02	1.08	0.19
Panel C: Results for Labor Outflow Shocks				
$h = 1$	0.44	1.76*	1.74*	0.90
$h = 2$	0.26	1.91*	2.11**	0.60
$h = 3$	0.06	0.60	0.62	0.04
$h = 6$	0.07	1.05	1.12	0.13

Note: lower net outflow positively predicts the one-month ahead expected returns

4. Labor Outflow Shocks

- it can be super interesting to dig further in the outflow shocks' prediction power and the related interpretations
- useful to expand **Table 3** to check if negative outflow shocks are predicting greater amount of *future non-farm payroll*
- is it closely related to the existing interpretations of similar findings documented in Agrawal et al. (2021)?
  - outflows not necessarily are "fires"(passive layoffs) but may be more related to "quits"(voluntary job-to-job search), reflecting employees have internal information about the future prospect of the company's earning and capture extra private information?
  - duration of predictability for one-month: private information through job turnovers is quickly exploited by analysts and investors
  - more empirical tests on what info is contained in the shocks? e.g. hiring cost, wage expectation?

Quits vs. Layoffs: Mercan and Schoefer (2020, AER:insight)



Note: LIAB Establishment Survey, West Germany, annual data

Other Details

- to differentiate quits vs. layoffs: exploit more details in the LinkedIn data? (e.g. gap between jobs)
- perhaps need more economics and detailed explorations of the data, e.g. higher-ranked employees in the hierarchy for hiring/firing/quits; skilled labor vs. non-skilled etc; wage promotions given job-to-job search.
- run more cross-sectional stock-level tests? long-short portfolio; verify it as a risk-premium; what types of firms are exposed more to this "risk"? better to differentiate with channels of current papers which are done at the cross-section
- may want to improve upon the structural model
- work on the contributions: finding of a new source of risk premium? factor for portfolio reshuffling? to highlight a completely different model mechanism?

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- may want to improve upon the structural model
- work on the contributions: finding of a new source of risk premium? factor for portfolio reshuffling? to highlight a completely different model mechanism?
- a well-executed paper with a lot of potential!

Best of lucks!