

Comments on  
'DNWR in Canada:  
Evidence Against a Greasing Effect'

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## Context: Daly and Hobijn (2014) on Phillips Curve

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## Context: Daly and Hobijn (2014) on Phillips Curve

- **Wage growth distribution:** becomes more left-skewed during recession, and with higher share of wage freezes. DNWR
- **Bending of Phillips Curve:** relationship between unemployment and wage growth flattens out at low levels of wage growth. DNWR
- **Model:** extent of DNWR is time-varying. Wage rigidity more binding during a recession, adjustment happens disproportionately through the employment margin, rather than the wage margin

# This paper

- Empirics: uses Canada Survey of Labor and Income to measure wage growth distribution evolution over time

# This paper

- Main results

-Greasing effect of inflation is very modest: in a recession, a higher inflation rate implies that the increase in unemployment is marginally lower, and the speed of transition of unemployment to steady state is virtually unchanged. [already in Daly and Hobijn, 2014]

-Impact of misperception of DNWR extent by policymakers: can affect substantially transition of unemployment to steady state

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- ...If workers would accept lower wages, recession would be over...

# Main Comment: Right Framework?



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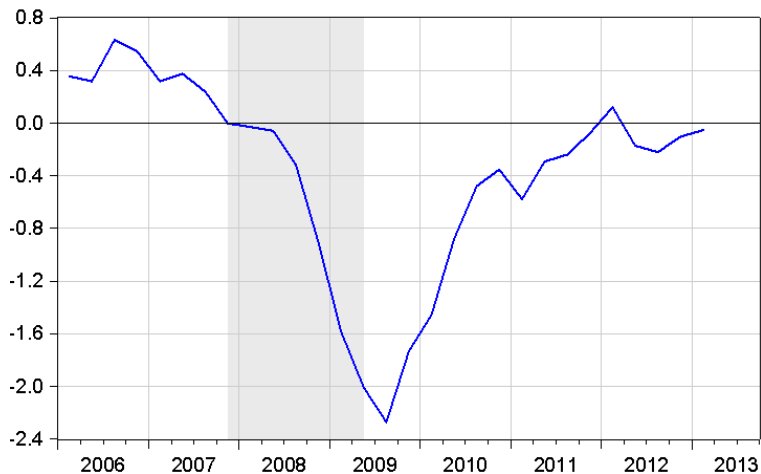
This is a model with only an **intensive** margin. In a recession, nobody is unemployed. Everybody who wants to work, works fewer hours. Firms do not have a choice between reducing net employment and reducing hours per worker.

Are the hours and employment margins isomorphic?

## Main Comment: Right Framework?

In the US, a major share of volatility in total hours is explained by employment. After the Great Recession, weekly hours went quickly back up to trend - contrary to unemployment

Average Weekly Hours

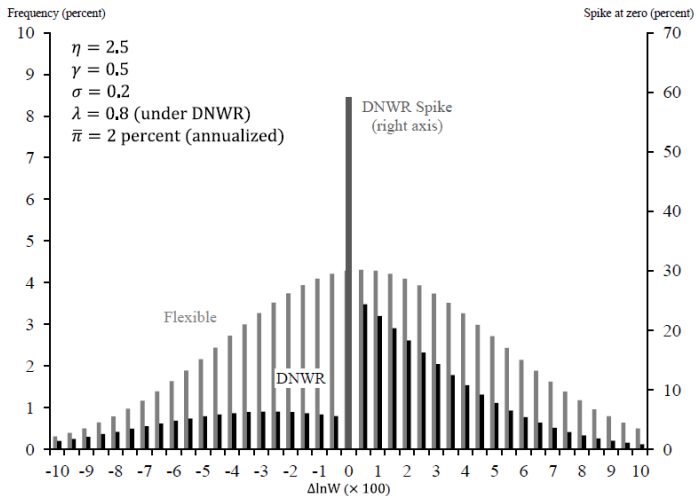


# Implications of Neglecting the Employment Margin

# 1. Empirics of Wage Distribution

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**Figure 6.** Steady-state distribution of quarterly  $\Delta \ln W_{it}$  under flexible wages and DNWR



# 1. Empirics of Wage Distribution

How would wage distribution change if we had random matching and endogenous separations?

# 1. Empirics of Wage Distribution

- **Job creation** depends on random matching between unemployed households  $U_t$  and vacant positions  $V_t$ . Matches happen with probability less than one. Total number of matches is given by a matching function:

$$M(U_t, V_t) = \psi U_t^\alpha V_t^{1-\alpha}$$

- **Job destruction** depends on a separation rate  $\lambda_t$

$$L_t = (1 - \lambda_t) L_{t-1} + M(U_t, V_t)$$

- **Generating matches is costly**: firms need to post vacancies  $V_t$  at a unit cost  $\kappa$ .

# 1. Empirics of Wage Distribution

$Z_t$  : aggregate productivity  $a_{i,t}$  : match-specific productivity  
The surplus  $s_{i,t}$  is the value of a firm-worker match

$$s_{i,t} = \underbrace{a_{i,t}Z_t - b}_{\text{current match revenues net of labor disutility}} + \underbrace{Q_t - W_t^u}_{\text{match continuation value net of worker outside option}}$$

- Surplus is split between worker and firm. Wage payments achieve desired surplus split



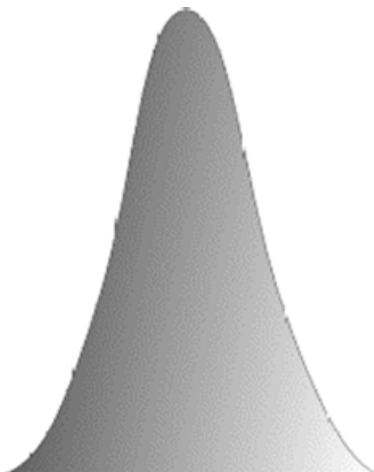
# 1. Empirics of Wage Distribution

The cutoff value for  $a_{i,t}$  at which the surplus produced by a worker equals zero is

$$\bar{a}_t = \frac{W_t^u - Q_t + b}{Z_t}$$

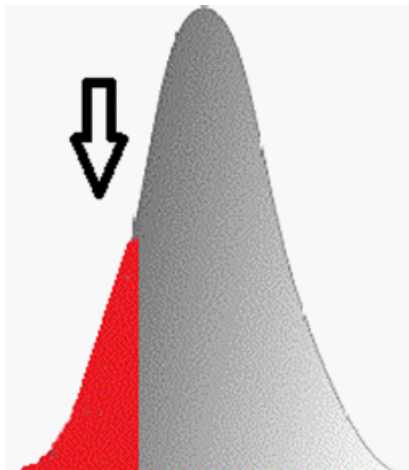
# 1. Empirics of Wage Distribution

Match-specific productivity  $a_{i,t}$  distribution



# 1. Empirics of Wage Distribution

Separations happen for  $a_{i,t}$  smaller than cutoff level



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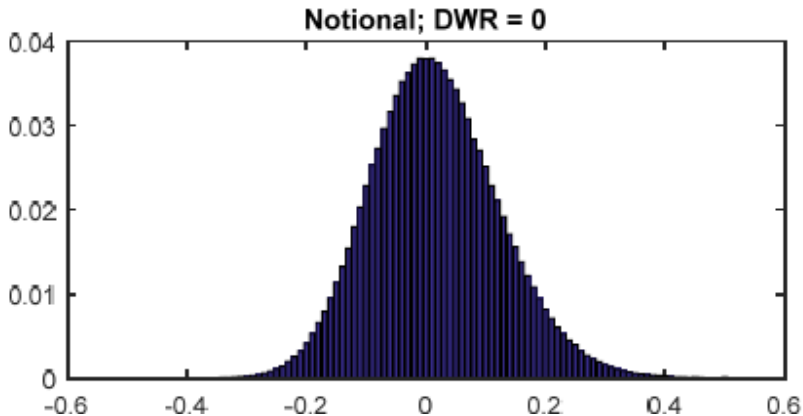
What is the distribution of wage changes?

*Notional distribution:* firm hires all workers and does not lay off anybody.

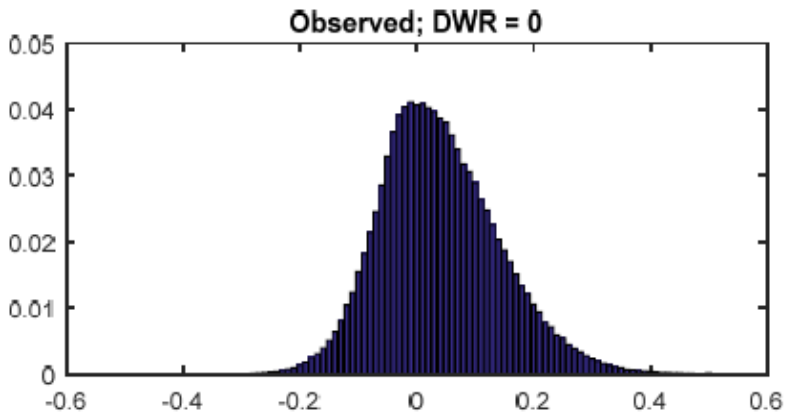
*True distribution:* workers who have a low enough draw of  $a_{i,t}$  and should experience a fall in wages are fired.

**We cannot use measures of asymmetry in distribution to infer existence of DNWR**

# 1. Empirics of Wage Distribution (Kurmann et al., 2016)



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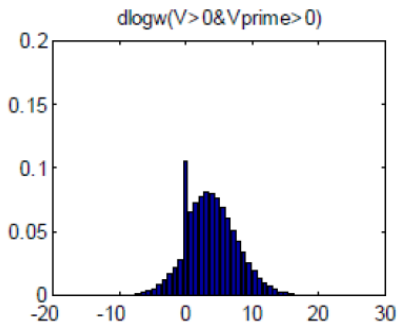
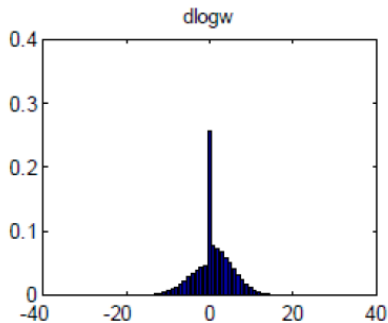
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**Selection effect:** if DNWR is large, and there is a fall in  $Z_t$ , layoffs increases disproportionately for workers affected by DNWR.

**Decline in job-stayers can lead to more symmetry in distribution after the shock. So changes in symmetry of distribution or in share of wage freezes during recession cannot say anything about extent of DNWR.**

# 1. Empirics of Wage Distribution: Hours

Evidence for US: firms reduce the wage bill mostly by reducing the number of hours. In a recession, change in hours should be *larger* for low-productivity workers - which are more likely to have wage cuts.

**Earnings distribution may have much less asymmetry than hourly-wage distribution**

# 1. Empirics of Wage Distribution: Evidence

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- Even if we assumed that the model with intensive margin should be used to explain the data, the evidence is ambiguous.

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- Canada: Phillips curve did not change as inflation rate fell from 1981 to 1997 (Lemieux and Fares, 2001)

# 1. Empirics of Wage Distribution: Evidence

## Performance pay/bonuses/productivity premia

- ▶ Euro Area, 2009: Two-tier negotiation system: plant-level bargaining improves on wage floors in 50% of firms with  $>200$  employees (Boeri, 2015). Also in 30% of financial intermediation firms. Cyclical 'wage cushion' in Germany and Portugal
- ▶ US GSS, 2006: 40% of workers receive profit-sharing. Performance pay and bonuses incidence increased to cover up to 60% of workers

## 2. Wage setting: what matters is new hires' wages

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Job creation condition: how to set optimal number of vacancies

$$\underbrace{\frac{\kappa}{q_t}}_{\text{expected cost of filling a vacancy}} = \underbrace{(1 - \eta) s_t}_{\text{expected benefit from filling a vacancy}}$$

## 2. Wage setting: what matters is new hires' wages

- Using real wage  $w_t$  obtain job creation condition

$$\frac{\kappa}{q_t} = E_t \left[ \sum_{i=1}^{\infty} (1 - \lambda_t)^i \beta_{t,t+i} (y_{t+i} - w_{t+i}) \right],$$

## 2. Wage setting: what matters is new hires' wages

- Limited flexibility in downward wage adjustment:
  - ▶ Cyclical 'wage cushion' in Germany and Portugal. Carneiro et al. (2012): wage cushion very procyclical for new hires.
  - ▶ Martins et al. (2012) Portugal: real hiring wages are very procyclical.

### 3. Implication for policy results: misperception and greasing effect

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-It is hard to assess the welfare implications of misperception and greasing effects. A larger variance in labor hours is not isomorphic to a longer duration of unemployment. Evidence that entering unemployment during a recession lowers long-time earnings.

-Even if we adopt a model with the hours margin only, would need to have more than one distortion. How - for example - a DNWR distortion would interact and affect outcomes and welfare when coupled with nominal price adjustment distortion, is unclear.



### 3. Implication for policy results: misperception and greasing effect

-How can we discuss issues like unemployment duration, vacancy yield, Beveridge curve shifts, changes in participation rates?