Youth Unemployment and Employment Protection Legislation

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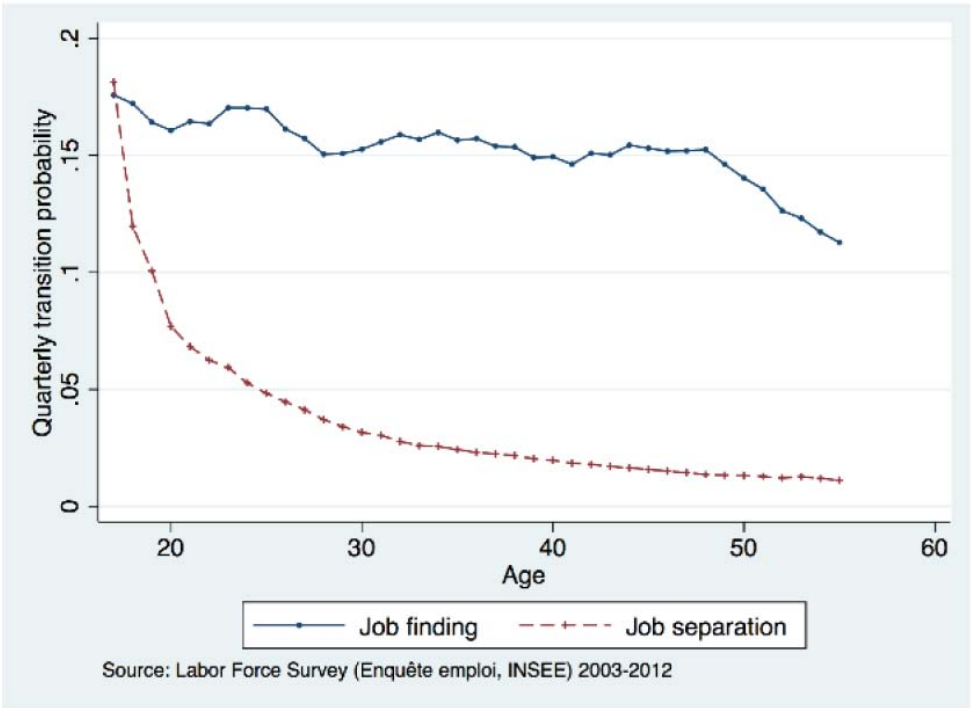
Introduction

- Young **French** workers
  - find jobs at least as fast as prime age workers
  - but their job separations are much more frequent



- Unemployment is higher for young workers mostly because they find **unstable** jobs (Shimer, 1999)

Motivation

- Lowering youth unemployment is more a matter of increasing job stability than improving job search.

- We evaluate the negative effect of labor market duality on job stability:
  - Many employers decide to fire workers before they have to transform their jobs into permanent ones,
  - This transformation ceiling raises job turnover, especially for young workers.

Introduction

- We provide a framework useful to evaluate the impact of employment protection legislation (EPL) on youth unemployment.
  - we build and estimate a search and matching model that
    - reproduces the negative relation between job separation and tenure
    - identifies the red-tape layoff costs
  - The model is estimated for the labor market of unskilled workers in France over the period 2003-2012

Outline

1. Institutional background and identification of layoff costs
2. The model
3. The estimation
4. Counterfactual analysis

Institutional background

- In France, job protection becomes really stringent after two years of tenure:
  - Then employers have to pay at least 6 months' salary to their employees in case of unfair dismissal on a permanent job
  - Before this threshold, no minimum amount is required. In practice, the severance is much lower: about 2 months's salary on average

Institutional background

- To avoid the cost of breach of permanent contracts, employers make an extensive use of temporary contracts:
  - In principle, temporary contracts may be used in special circumstances only:
    - to replace an employee who is absent
    - to cover changes in business activity
    - for seasonal work
  - Nevertheless, more than 80% of hires are on temporary contracts
  - Employers use this strategy to avoid permanent contracts

Institutional background

- This strategy becomes unprofitable when tenure exceeds two years
  - the employee whose temporary contract is not renewed can always go to court to ask a requalification into a permanent contract
  - If the request is successful, the job separation induced by the non renewal of the temporary contract is interpreted as a layoff by the court
    - $\rightarrow$ a severance of at least 6 months' salary if the tenure is beyond two years
    - Before this threshold, the severance is about 2 months

Institutional background

- After the two-year threshold, employees have strong incentives to go to court if job separation is due to the termination of a temporary or permanent contract

- This context induces a strong potential increase in red-tape dismissal costs at the two-year threshold.

Job separation rates and job tenure

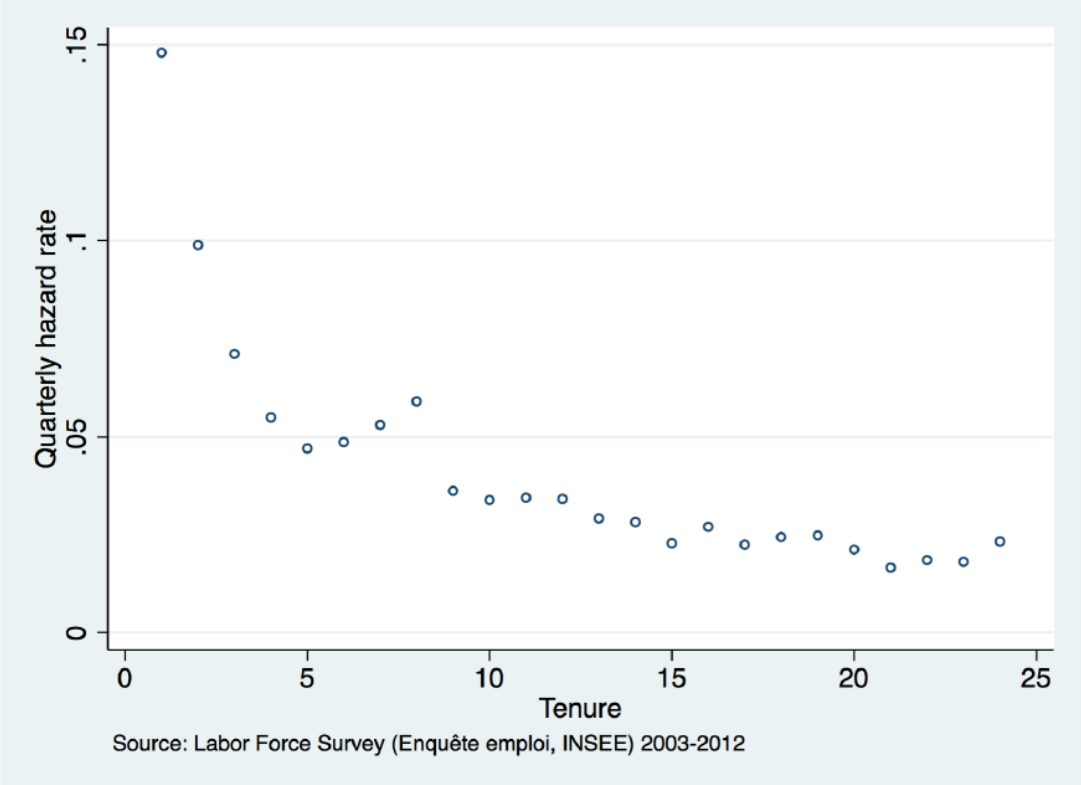


Figure: Quarterly hazard rate for employment to unemployment transitions. Individuals working in the private sector, aged 15 to 54, with at most high school degree. Apprentices and subsidized jobs are excluded.

Model's set-up

- Overlapping generations model in continuous time where people are born and die at rate χ
- 2 goods: output (numéraire), labor, sole production factor
- Individuals are risk neutral and discount the future at rate r
- They are either employed or unemployed.
- Unemployed individuals sample job offers at exogenous rate λ
- Take wage as exogenous because, in our sample, the vast majority of workers are paid the minimum wage

Technology

- Jobs produce x units of output per unit of time
- Output x starts at value $x_0 \sim H(x)$, and follows a Geometric Brownian Motion (GBM):

$$\ln(x_t) = \ln(x_0) + \left(\mu - \sigma^2/2\right) t + \sigma z_t$$

  - μ : drift; σ^2: variance; z: standard Brownian motion of zero mean and unit variance ($\mathrm{d}z = \varepsilon_t \sqrt{\mathrm{d}t}, \varepsilon_t \rightsquigarrow N(0,1)$)
- Why GBM? Generate decreasing hazard rate (Jovanovic, 1979)
- Jobs are also exogenously destroyed at rate δ

Employment protection legislation

- Starting jobs are not covered by job protection, they can be destroyed at zero (red-tape) cost
- They have to be transformed into protected jobs at tenure T
- At the instant when the job has to be transformed, it can be decided
  - either to destroy the non protected job at zero cost
  - or to continue and keep the job that becomes protected
- Protected jobs are destroyed at (red-tape) cost F

Model's solution

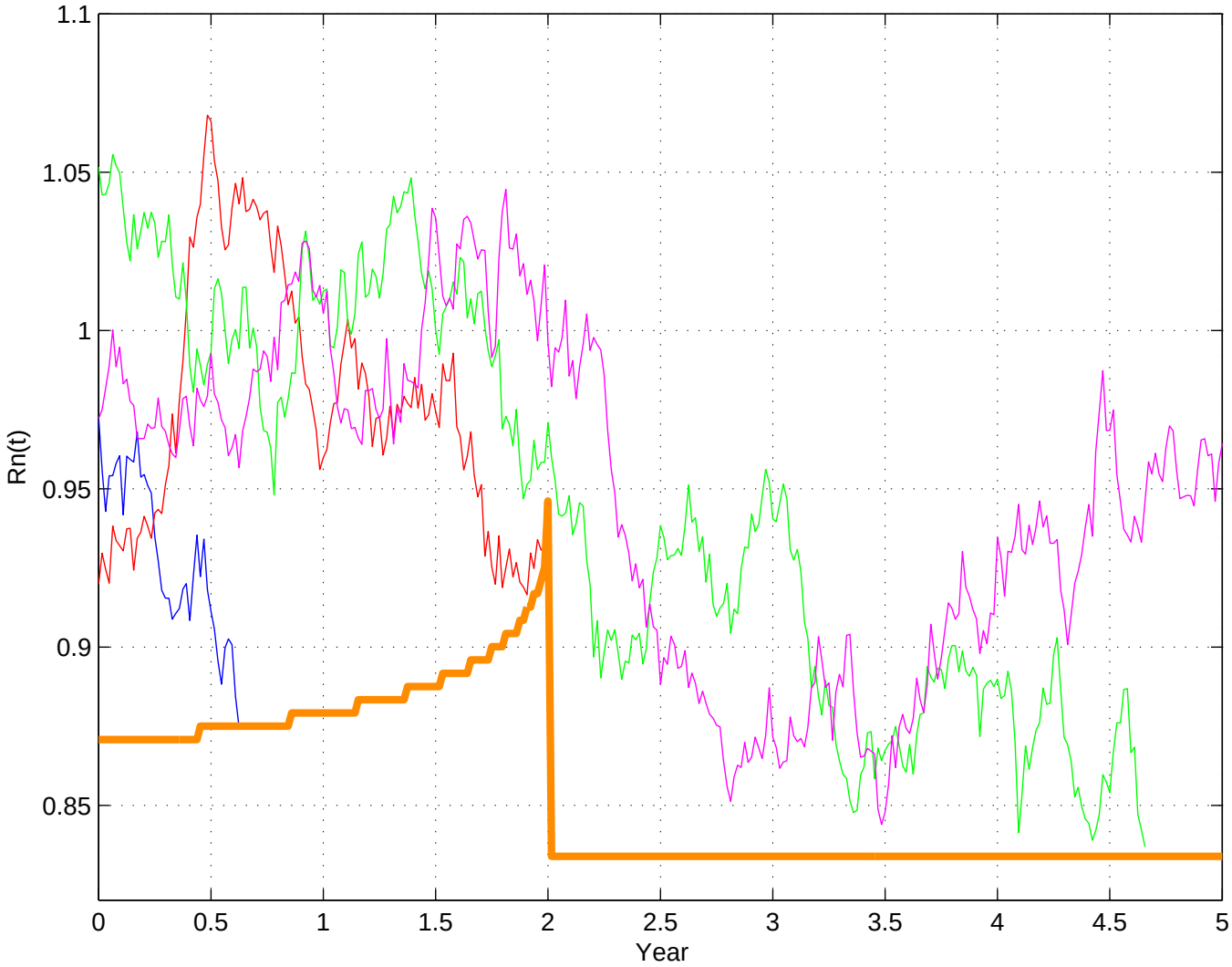
- Proceed by backward induction
- Value of permanent job $J(x;R)$ is a function of productivity x and reservation productivity R that has a closed-form expression (Prat, 2007)
- Value of non-permanent job $J_n(x,t;R_n(t))$ cannot be expressed analytically because its reservation productivity $R_n(t)$ is not anymore stationary. J_n solves the SDE

$$(r+\delta)\,J_n(x,t) = x - w + \frac{\mathbb{E}\left[\mathrm{d}J_n(x,t)\right]}{\mathrm{d}t}$$

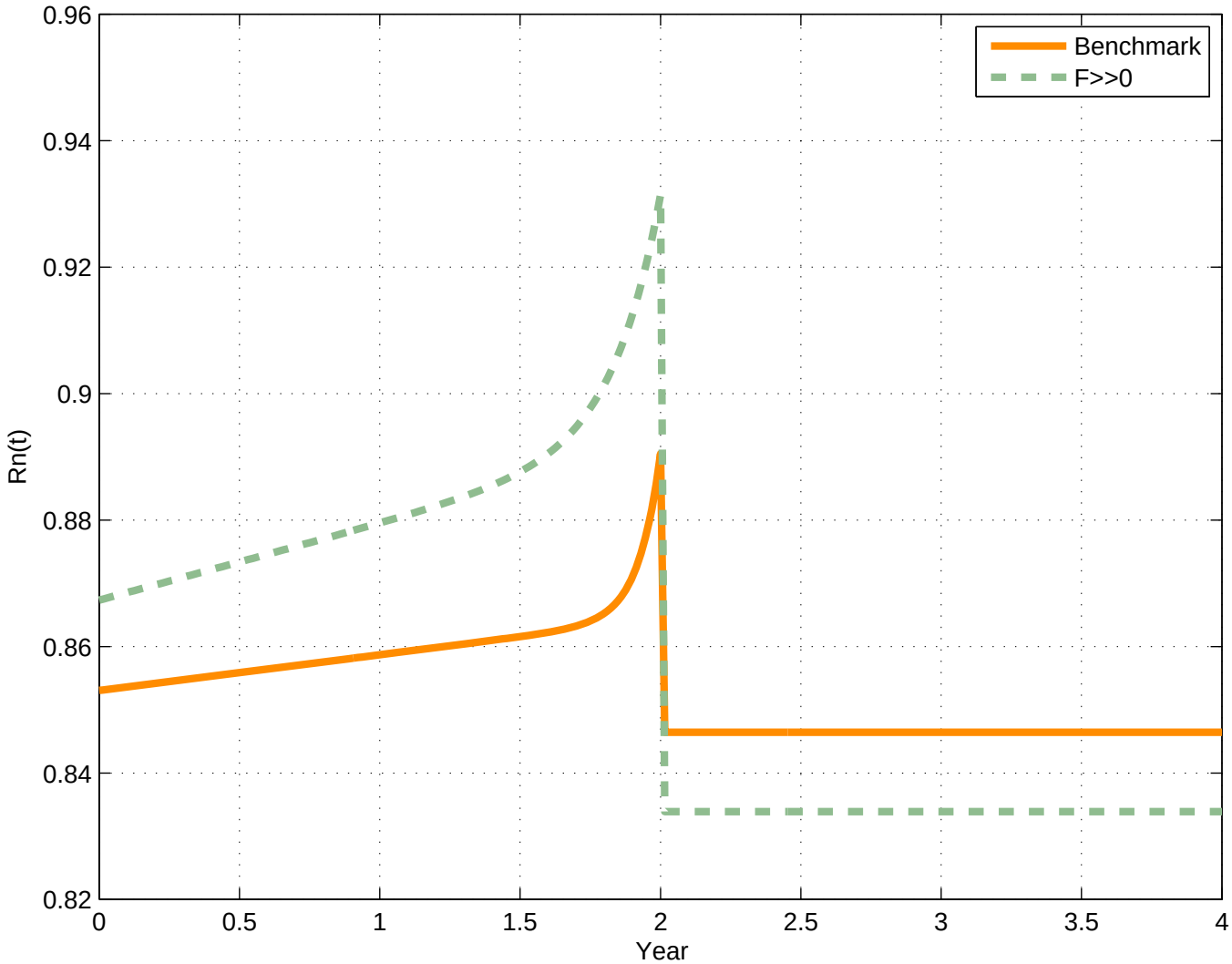
with the boundary conditions:

$$\begin{aligned} &J_n\left(R_n(t),t\right) = 0 \text{ and } \lim_{x\to R_n(t)} \frac{\partial J_n(x,t)}{\partial x} = 0 && \text{for } t < T \\ &J_n(x,T) = \max\left[J(x) - F, 0\right] && \text{for } t = T \end{aligned}$$

Reservation output



Impact of firing costs on reservation output



Data

- French Labor Force Survey over the period 2003-2012
  - Rotative panel
  - Quarterly data: every individual is interviewed during 6 consecutive quarters
- Focus on unskilled workers, who have not completed their high school degree and who have no vocational qualification

Estimation

We first use off-the-shelf values for a subset of the parameters.

Par.	Value	Interpretation	Moment
r	0.0125	Discount rate	Standard
χ	0	Death rate	Death rate
λ	0.165	Job finding rate	Unemp. duration
δ	0.007	Exogenous job sep. rate	Job sep rate for long tenure

Estimation

- Four parameters to estimate: $\theta = \{w, F, \sigma, \gamma\}$.
- Empirical moments

$$\hat{h}_t \equiv \frac{\sum_{i=1}^{N} \mathbf{1}_{\{t_i=t\}} d_i}{\sum_{i=1}^{N} \mathbf{1}_{\{t_i=t\}}},$$

  where $d_i = 1$ if job is destroyed, 0 otherwise.

- Minimum Distance estimator:

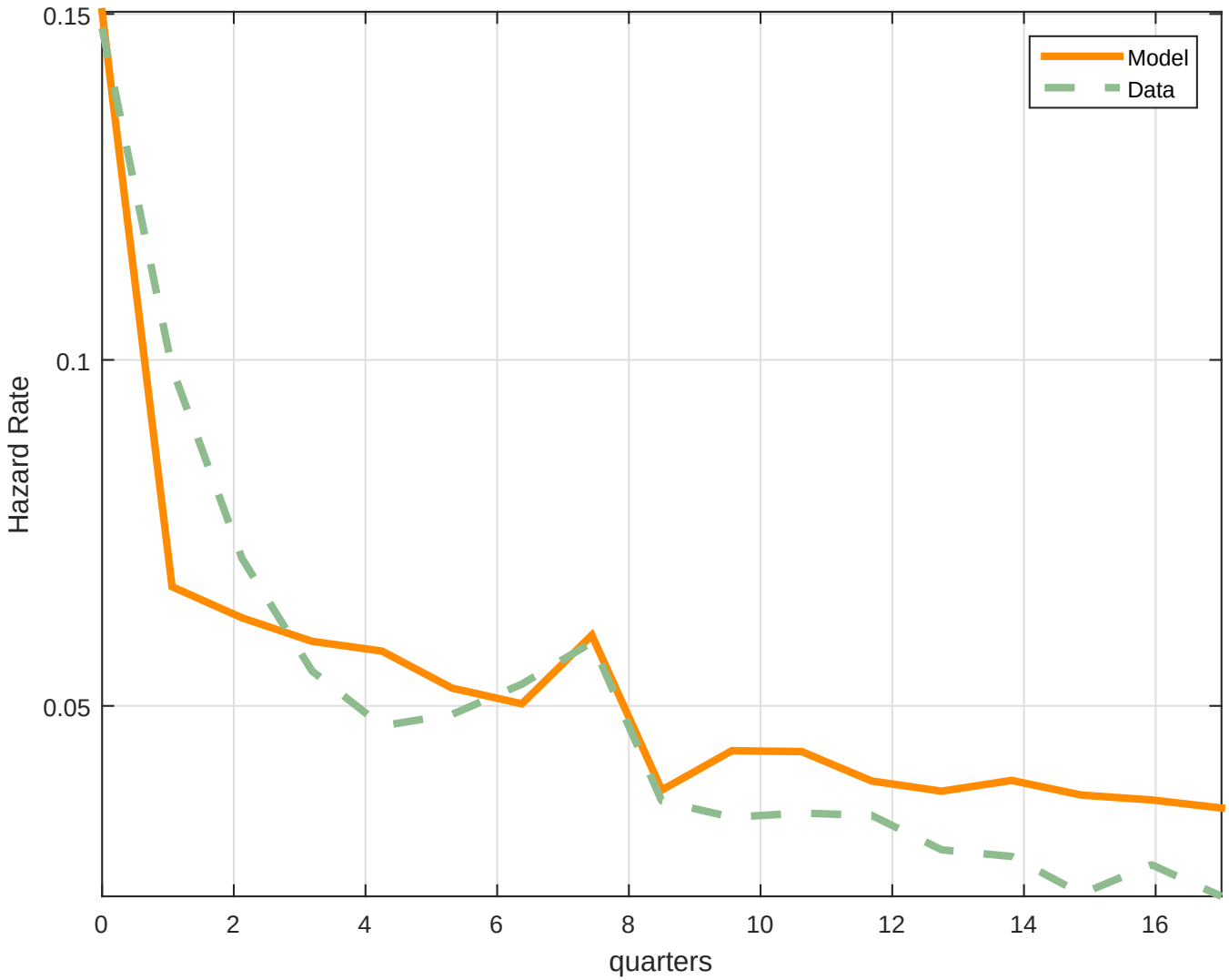
$$\min_{\theta} \left\{ h(\theta) - \hat{h} \right\}' \hat{\Omega}^{-1} \left\{ h(\theta) - \hat{h} \right\},$$

  where $\hat{\Omega}$ is a consistent estimator of the asymptotic var. of $\hat{h}$.

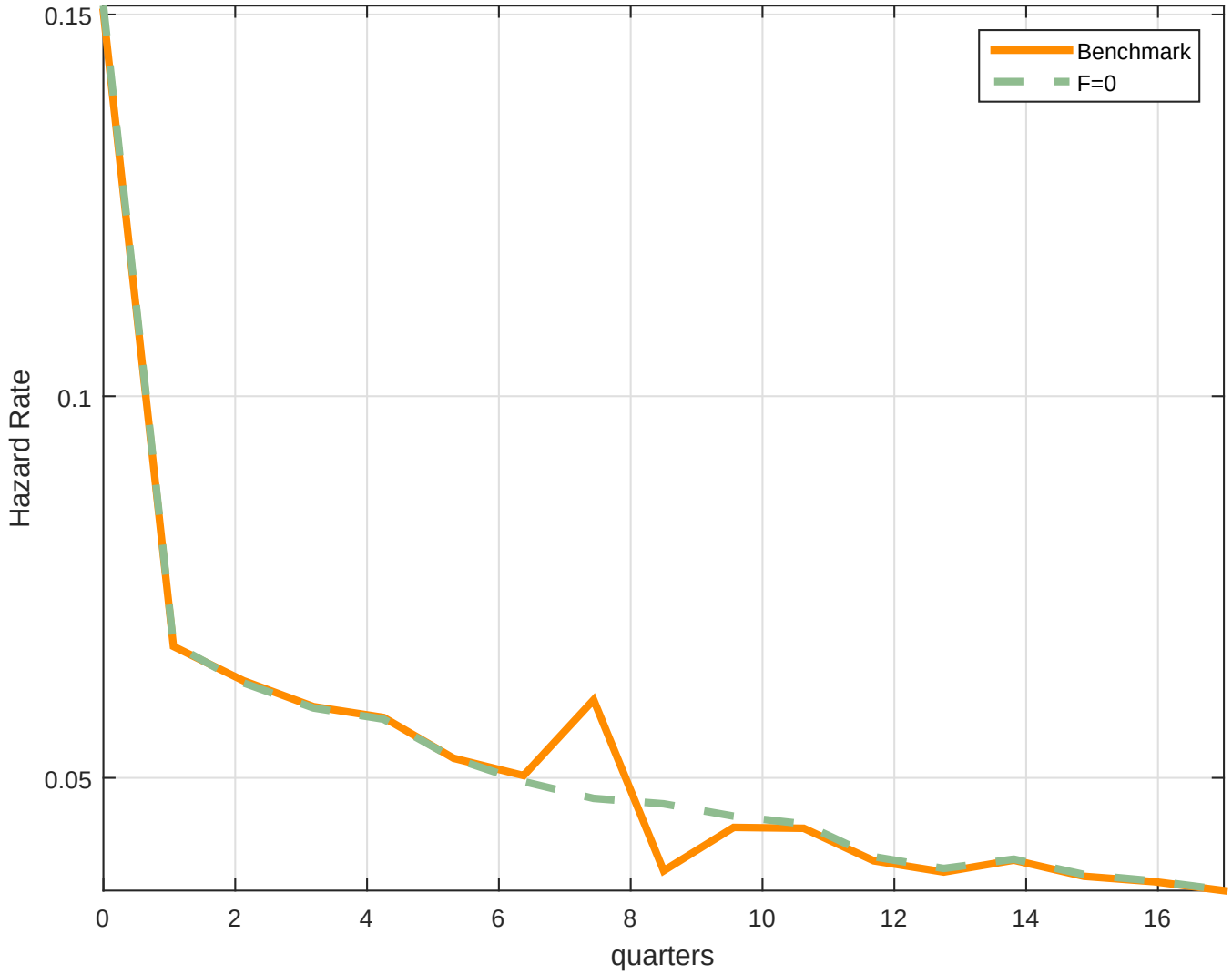
Estimates

Par.	Value	Interpretation
σ	0.23 (1e−04)	Std. dev. of GBM
γ	0.23 (2e−04)	Std. dev. of initial Prod.
w	1.25 (1e−04)	Exogenous wage
F	0.03 (1e−05)	Firing costs

Model vs. data



Effect of firing costs on job separation



Conclusion

- Document the effect of a discontinuity in French EPL on the rate of job separation.
- Build a model that match data and use discontinuity to identify size of expected firing costs (around 3% of yearly productivity).
- Structural model allows us to simulate impact of EPL on unemployment: yields a very small elasticity.
- Effect on unemployment is a lower bound since we still have to endogenize job creation.