2021-05-19

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Chapter 1

Chapter 2

- 1963 2020
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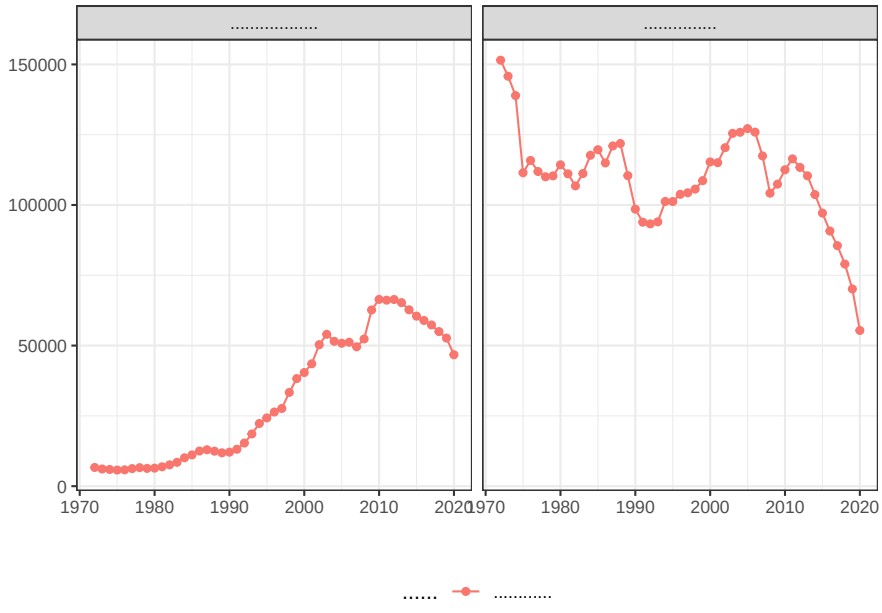

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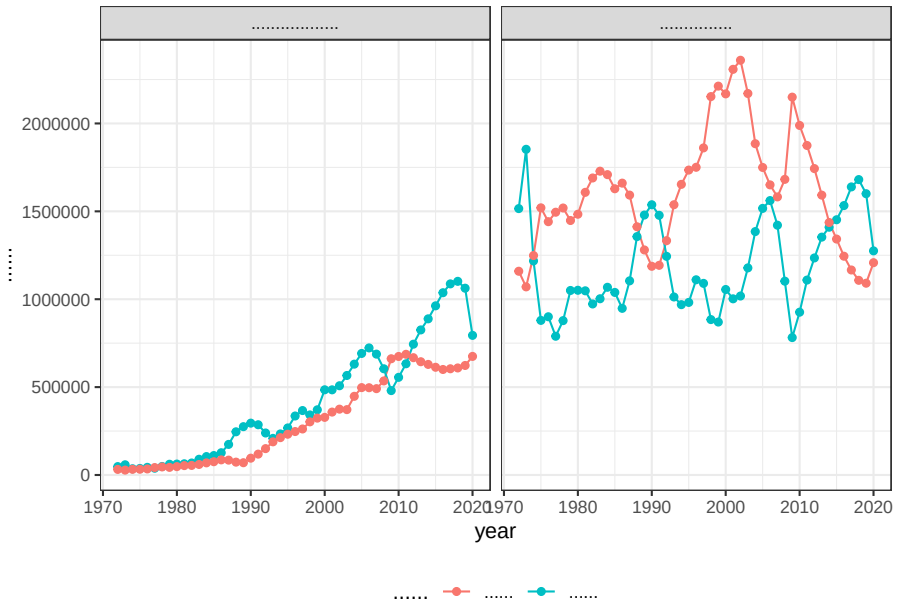
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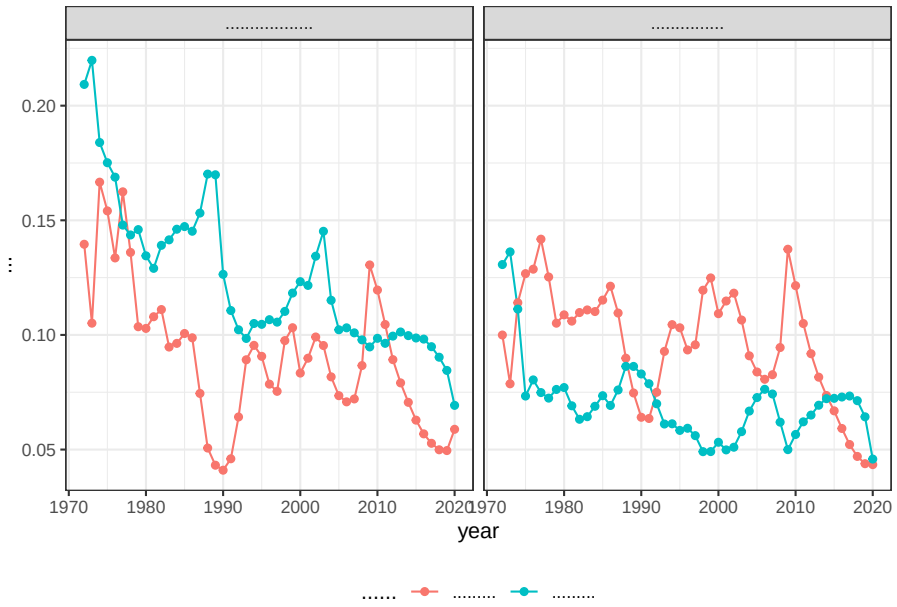
.....
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0.20
0.15
0.10
0.05
1970
1980
1990
2000
2010
2020
year
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Chapter 3

3.1

- Kawata and Sato (2021)
- Diamond-Mortencen-Pissarides (Rogerson et al., 2005) 4

1.

$$rU_i = b + \dot{U}_i + \underbrace{\Delta_i}_{capital\ gain\ from\ search\ activity}$$

$$\Delta_i = \sum_j \frac{m_{ij}}{u_i} \times (W_{ij} - U_i)$$

2.

$$rV_j = k + \dot{V}_j + \sum_i \frac{m_{ij}}{v_j} \times (J_{ij} - V_j)$$

3.

$$V_j = \dot{V}_j = 0$$

4.

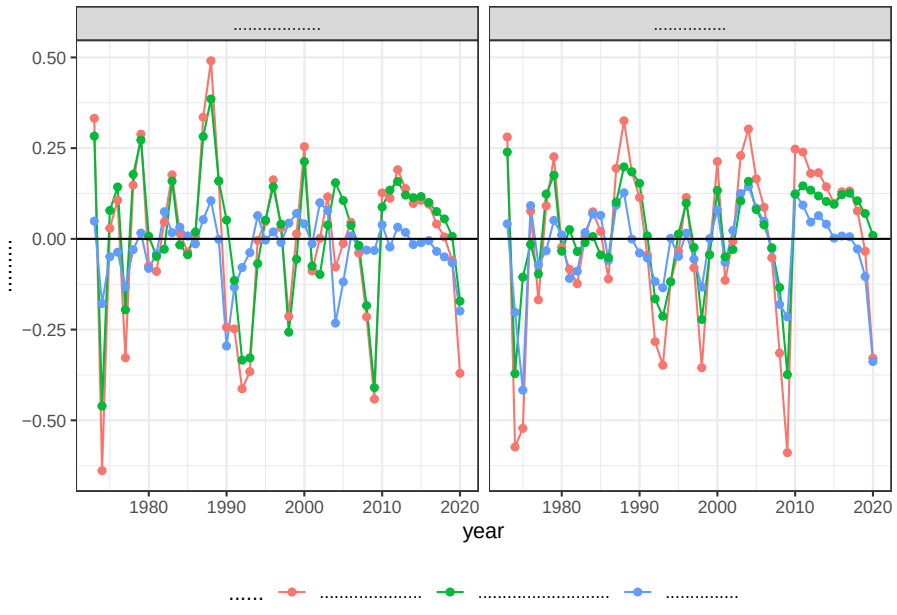
$$(1-\beta)(W_{ij}-U_i)=\beta(J_{ij}-V_j)$$

- 4 capital gain from seach activity

$$E[\Delta_i]=\sum u_i\Delta_i=\frac{\beta k}{1-\beta}\times\frac{\sum_{ij}m_{ij}}{\sum_i u_i}\times\frac{\sum_j v_j}{\sum_{ij}m_{ij}}$$

3.2

- 1963 2020
-



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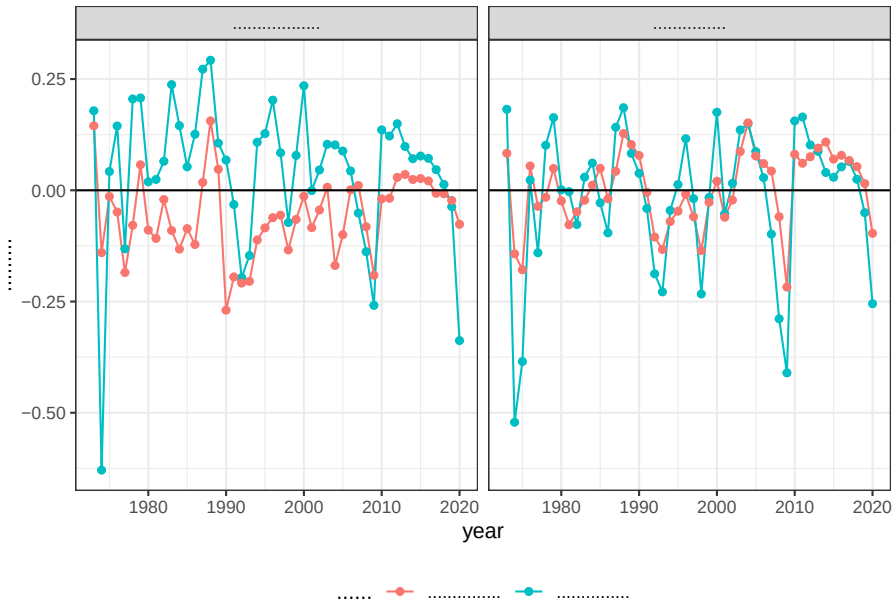

0.25
0.00
−0.25
−0.50
1980
1990
2000
2010
2020
year

Chapter 4

4.1

- Apply the mismatch index proposed by Şahin et al. (2014).
- The mismatch index, M_t, is defined as

$$M_t = \frac{h_t^* - h_t}{h_t},$$

where h_t and h_t^* are actual and counter-factual numbers of new employment, respectively.

- The counter-factual numbers is a solution of planner problem. The planner problem is to maximize the number of new employment, given the making function $\mu_{jt}(u_{jt}, v_{jt})$, the number of vacancy v_{jt}, and the total number of job seeker u_t.
- Formally,

$$h_t^* = \max_{u_{jt}} \sum_j h_{jt},$$

subject to

$$h_{jt} = \mu_{jt}(u_{jt}, v_{jt}), \quad (matching\ function)$$

and

$$\sum_j u_{jt} = u_t. \quad (Resource\ constrint)$$

- The estimation process is follows

1. Suppose a parametric specification on the matching function as $\mu_{jt}(u_{jt}, v_{jt}) = A_{jt} u_{jt}^{1-\beta} v_{jt}^{\beta}$, where $A_{jt} = exp(f_t, f_j, \epsilon_{jt})$, f_t and f_j are time and sector fixed-effects, respectively. The parametric assumption obtains the closed solution of the planner problem;

$$h_t^* = \max_{u_{jt}} \sum_j exp(f_t, f_j, \epsilon_{jt}) \times v_{jt}^{\beta} \times (u_{jt}^*)^{1-\beta},$$

where

$$u_{jt}^* = \frac{A_{jt}^{1/\beta} v_{jt}}{\sum_{j'} A_{j't}^{1/\beta} v_{j't}} u_t. \quad (optimal\ allocation)$$

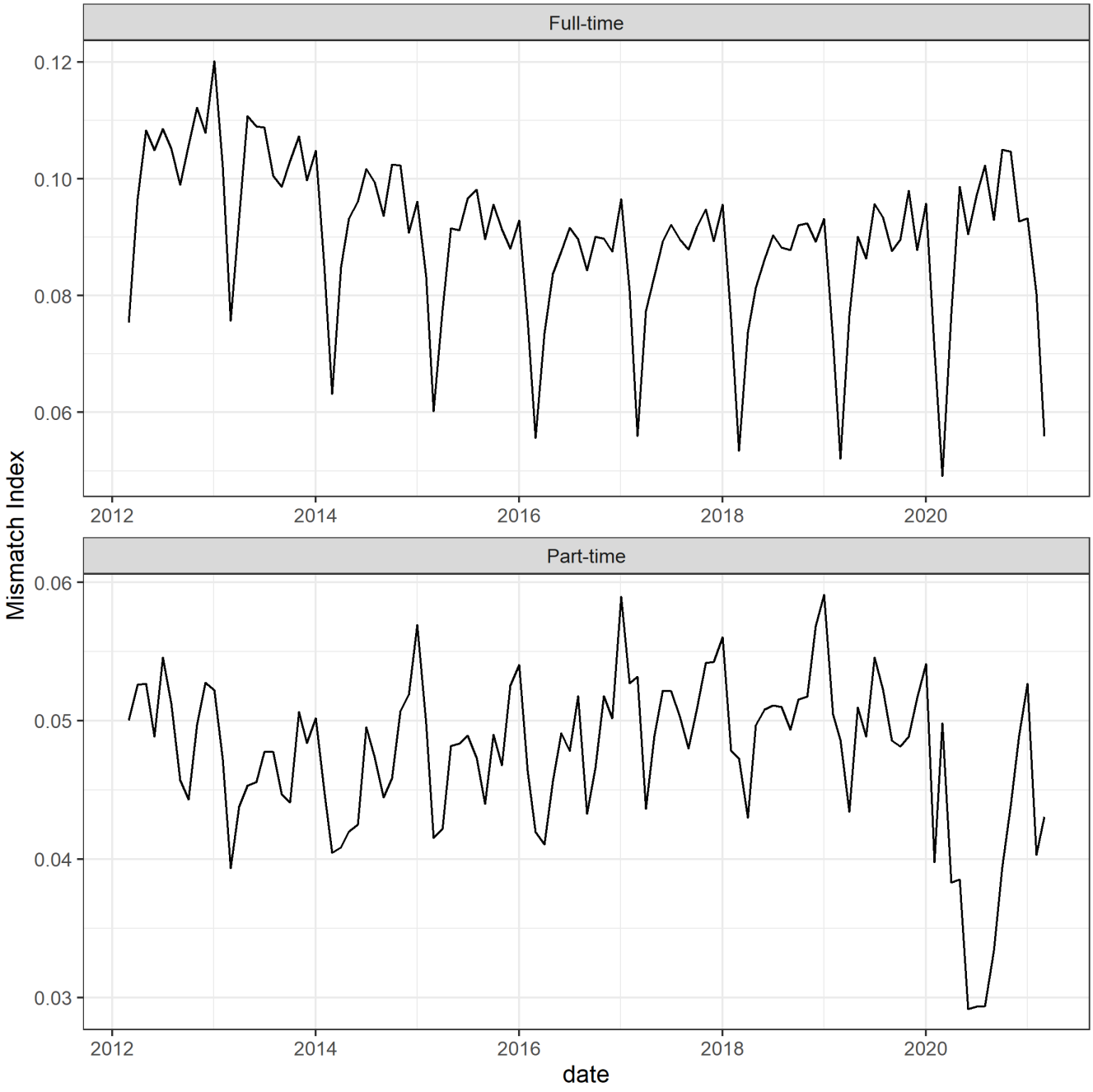
2. Estimate the log-transfer matching function

$$\log(h_{jt}/u_{jt}) = f_j + f_t + \beta \times \log(v_{jt}/u_{jt}) + \epsilon_{jt}.$$

3. Calculate the mismatch index with estimated parameters in Step 2.

4.2 Aggregate mismatch

- Occupational mismatch by March, 2021.


Full-time
Part-time
Mismatch Index
0.12
0.10
0.08
0.06
0.05
0.04
0.03
2012
2014
2016
2018
2020
date

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Rogerson, R., Shimer, R., and Wright, R. (2005). Search-theoretic models of the labor market: A survey. *Journal of economic literature*, 43(4):959–988.

Şahin, A., Song, J., Topa, G., and Violante, G. L. (2014). Mismatch unemployment. *American Economic Review*, 104(11):3529–64.