

Vacancy-Seeker Mismatch in Japan

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2021-05-08

Contents

1	Summary	5
2	Method	7
3	Result	9

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Chapter 1

Summary

This page reports the mismatch index (Şahin et al., 2014) in Japanese job-search market. We use the Referentials and Placements by Prefecture, Employment Referral Statistics, which reports monthly numbers of vacancy, job seekers, and new employment. Important note that Ippei (2020) estimates the mismatch index in Japanese labor market (from 2000 - 2019).

Chapter 2

Method

- 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

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

and

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

- 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

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

2. Estimate the log-transfer matching function

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

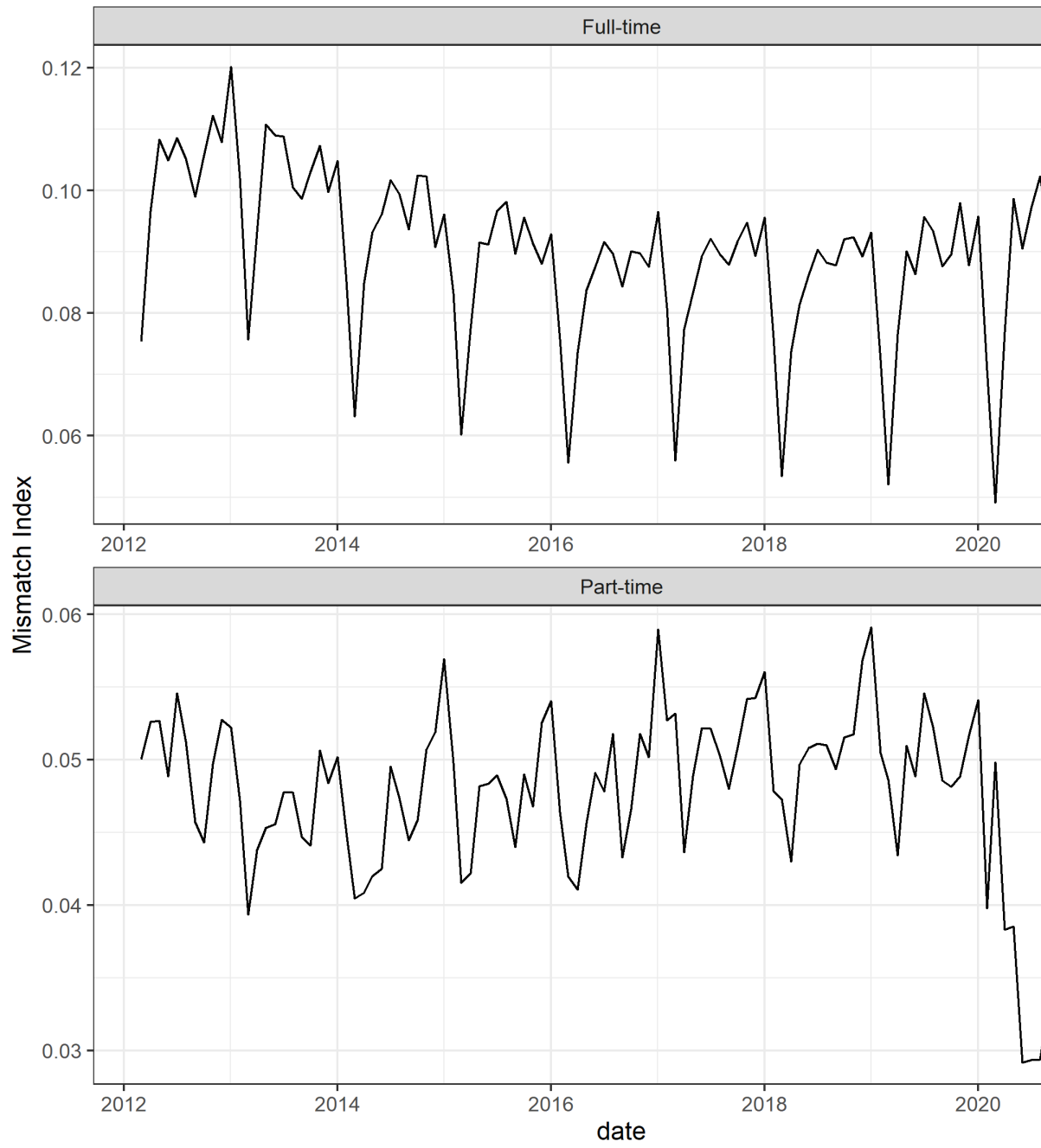
3. Calculate the mismatch index with estimated parameters in Step 2.

Chapter 3

Result

- Occupational mismatch by March, 2021.

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include_graphics("R/figure/occ_mismatch.png")
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Bibliography

Ippei, S. (2020). Is labor market mismatch a big deal in japan? *The BE Journal of Macroeconomics*, 20(2).

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