

# Mismatches and Factor Immobility

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# What happened to the Japanese Labor Market in the last 20 years?

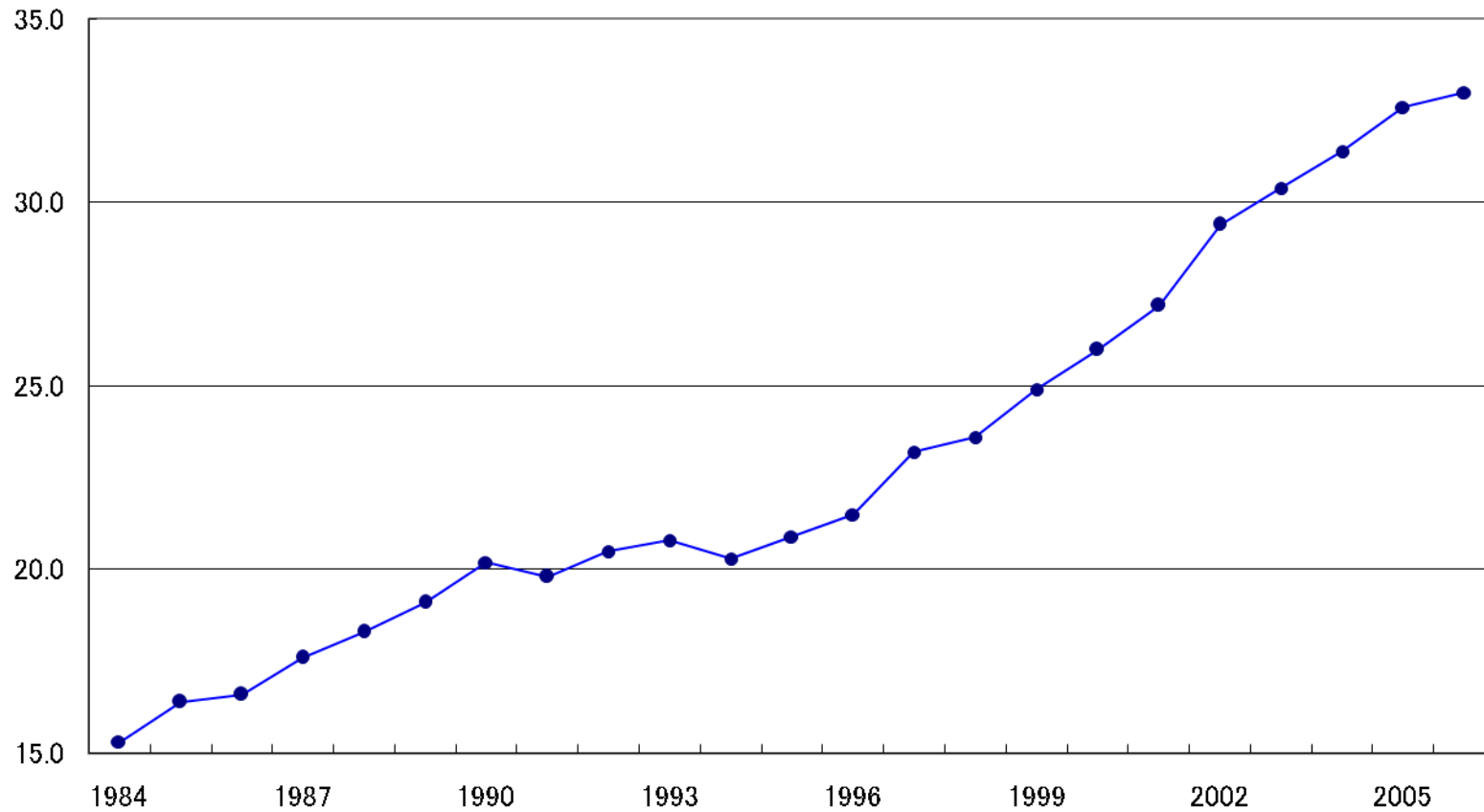
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- ▶ **Three major changes**
  - ▶ Secular decline in the share of permanent and full time employees
  - ▶ Stagnant productivity growth
  - ▶ Outward drift of Beveridge Curve
- ▶ **The hardest hit are the younger generation.**
  - ▶ If you do not land on a permanent job immediately after school, only slim chances of getting one in the future
  - ▶ Strong cohort effects on earnings, employment status, etc (e.g., Kondo 2007, Genda and Kondo 2007)



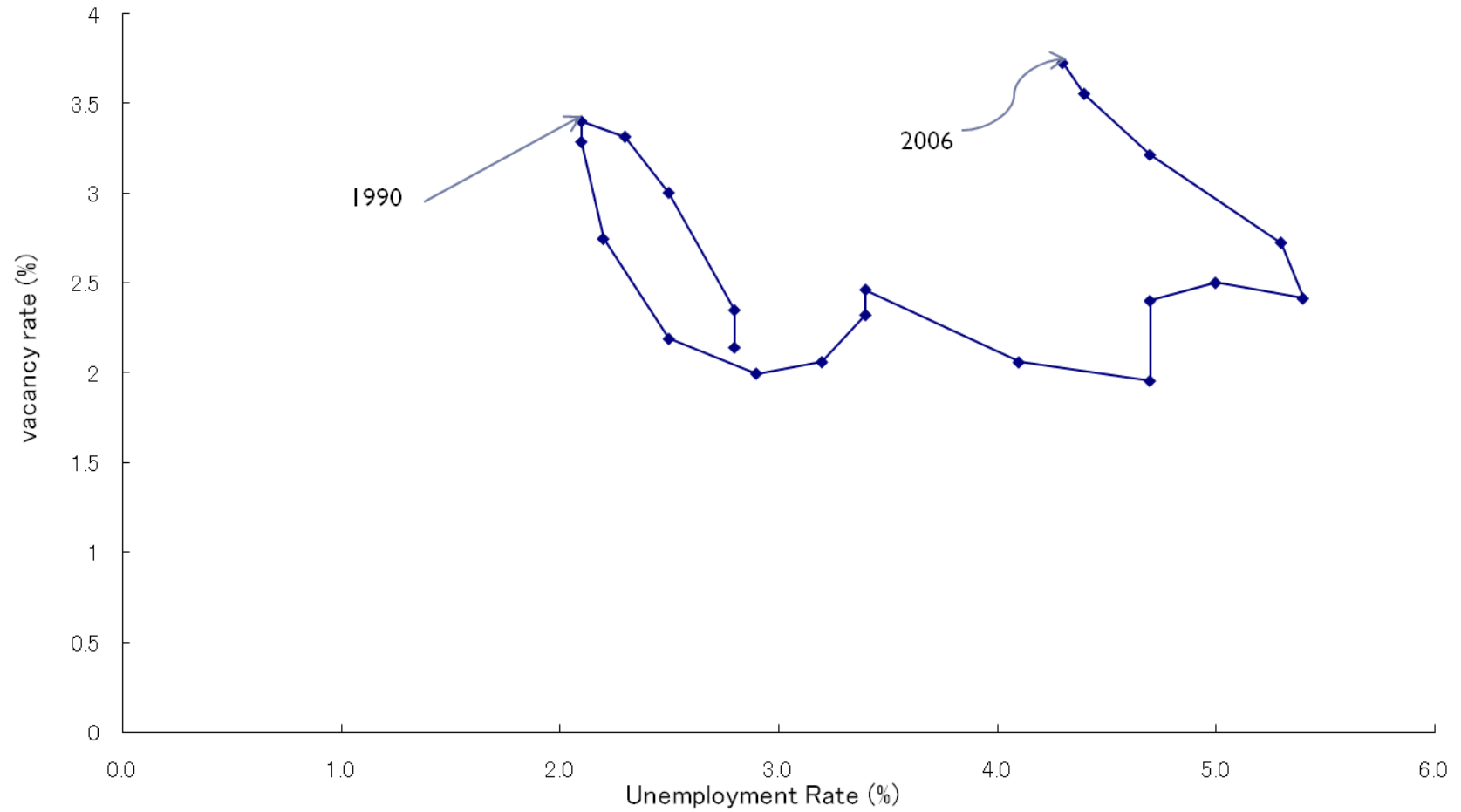
# Temporary/part time workers are increasing

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# Shifting Beveridge Curve

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# Stagnant Growth and Factor Immobility

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- ▶ **Miyagawa et al. 2004**

- ▶ Decline in labor reallocation accounts for .6% decline in TFP growth during the latter half of 1990s

- ▶ **Caballero, Hoshi, and Kashyap**

- ▶ *Zombi* firms slow down labor reallocations and also hurt growth of industries they reside.

- ▶ **Fukao and others**

- ▶ exiting firms tend to have higher TFP than those surviving. Dispersions of individual firms' TFP widened



# Younger generations are hit hard

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- ▶ According to a survey by ESRI, if your first job after finishing a school is not a full time permanent one, chances are small that you will get one in the future.
- ▶ Your hourly earnings is only 63%, or 84% compared to full time permanent job, if you work part time or on short contract basis.
- ▶ The gap between permanent & full time and the rest only grow wider over age (tenure).



# Employment status immediately after finishing schools

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▶ **According to a survey by ESRI:**

		Permanent jobs	Other jobs	Searching for a job	other
Male	High school	54%	26%	7%	13%
	University	65%	21%	8%	6%
Female	High school	50%	31%	9%	10%
	University	58%	28%	8%	6%



# The current employment status

		Current employment status		
	First job after school	Permanent jobs	Other jobs	others
Male	Permanent jobs	82%	15%	3%
	Other jobs	16%	74%	10%
	Job search	49%	39%	12%
Female	Permanent jobs	62%	18%	20%
	Other jobs	12%	65%	23%
	Job search	17%	58%	25%

# Motivations and Goals

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- ▶ These changes do look mutually related, but unclear exactly how and why they occurred.
- ▶ Build a model that can account for these changes in a manner consistent with key stylized facts on the Japanese labor market
- ▶ Stylized facts: flexible and highly organized internal labor markets; limited access to the port of entry jobs; sizable competitive fringes with low pay and high turnover.



# Strategy

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- ▶ Build a model of competitive search incorporating two types of jobs
  - ▶ Resemblance to markets for new school graduates
  - ▶ Some empirical supports by Kambayashi and others
- ▶ Aggregate economy comprised of regions or industries
- ▶ Introduce capital & labor immobility across regions/industries
- ▶ Calibrate/estimate the model
- ▶ Policy simulations



## A model of labor market with two types of jobs

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- ▶ J-jobs: both simple and complicated jobs, employees promoted to complicated jobs after training
- ▶ S-jobs: simple jobs only, no training
- ▶ Constant population.  $d$  of workers retire every period, the same size of new entrants
- ▶ Exogenous separations from each type of jobs with  $\delta_j < \delta_s$
- ▶ Matches are formed via competitive (directed) search: workers can choose which type of job to apply, the details of the posted offer known in advance.



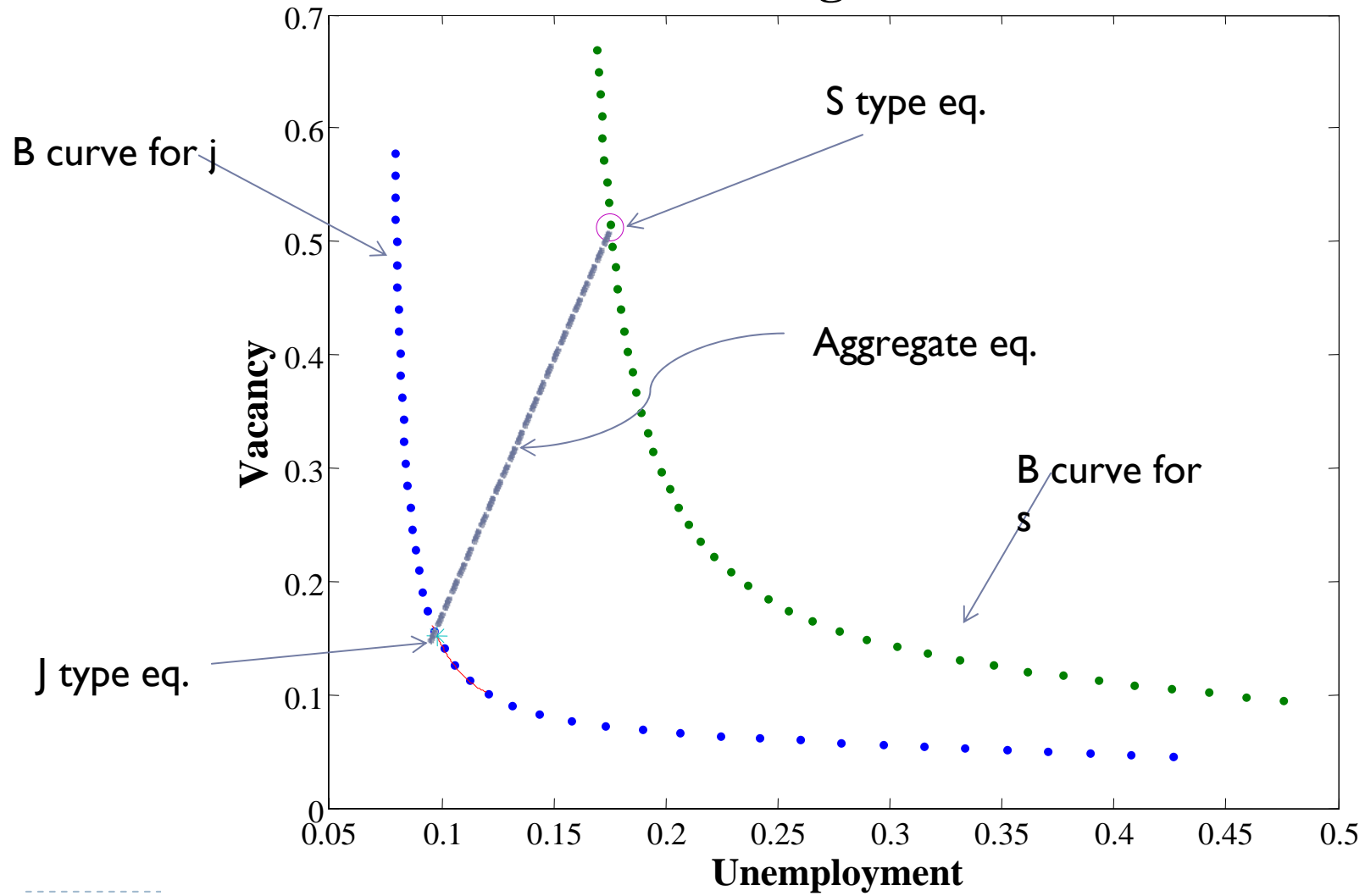
## Eq. with worker heterogeneity

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- ▶ Workers differ in training cost,  $c$
- ▶ Model is closed by imposing zero profit conditions on two types of jobs.
- ▶ At eq., workers with  $c$  below threshold apply to  $j$ -jobs, those above the threshold apply to  $s$  jobs.
- ▶ Type  $s$ -jobs act as ‘shock absorbers’
  - ▶ Optimal queue length determined by exogenous separation rate, rental cost of type  $s$  capital, and retirement rate
  - ▶ Changes in other parameters generates a shift in the share of two types of jobs. Type  $s$  jobs expand or shrinks to accommodate changes while wages, employment probability, and vacancy rate remain unchanged



# Beveridge Curve



## Introducing Capital and Labor immobility

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- ▶ Capital immobility results in dispersions in returns to capital. Suppose returns are distributed normally with mean  $E(s)$  and standard deviation  $\sigma$

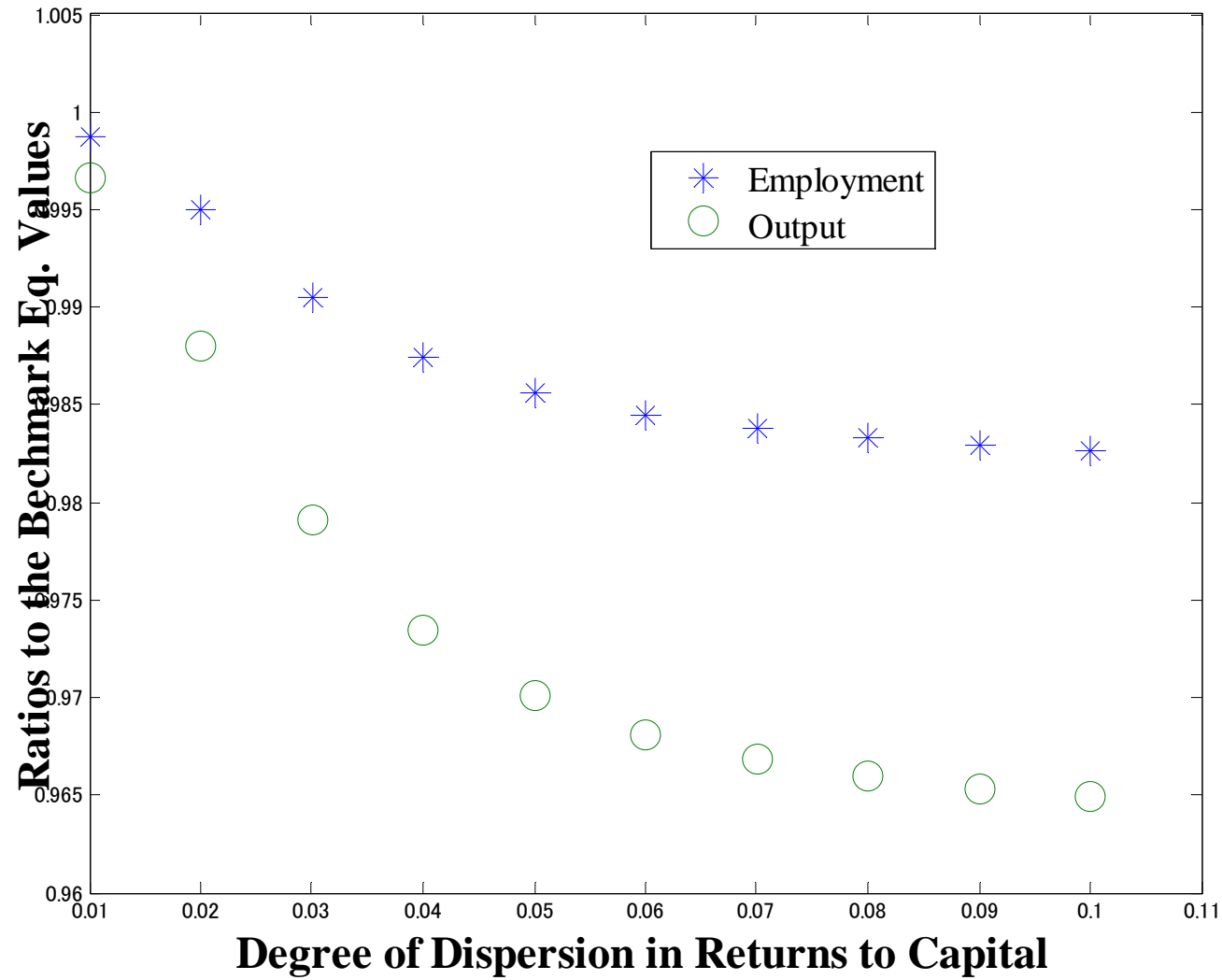
$$v = \int v(x) \phi \left( \frac{(x-E(s))}{\sigma} \right) dx$$

$$u = \int u(x) \phi \left( \frac{(x-E(s))}{\sigma} \right) dx$$

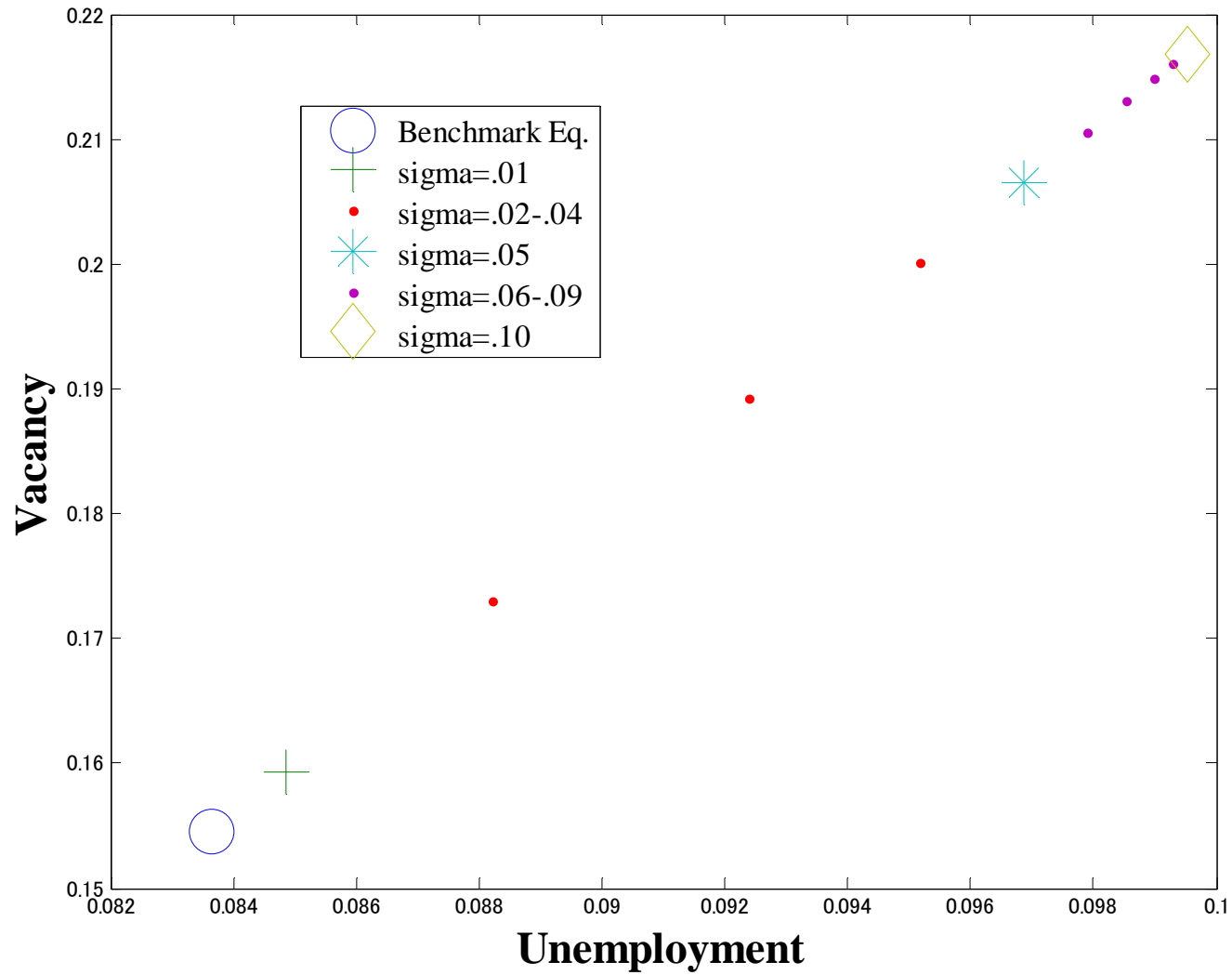
- ▶  $E(s)=0$ ,  $\sigma =.01-.10$ 
  - ▶ The aggregate eq. shifts up along the line connecting type s eq. and type j eq., as we increase the dispersion



# Impacts on Employment and Output



# Impacts on Unemployment and Vacancy



# Impacts of capital immobility

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	Benchmark	$\sigma = .05$
Total output	1.028	.997 (-3.0%)
Share of type j sector employment	.858	.745 (-13.2%)
Threshold value of c	.819	.765 (-6.6%)
Vacancy rate	.154	.207 (+33.7%)
Unemployment rate	.084	.097 (+15.8%)
Output per employment at j sector	.916	.903 (-1.5%)
Capital share of output	.261	.239 (-8.7%)



# Summary

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- ▶ **Competitive matching model with capital immobility can account for three major changes:**
  - ▶ decline in “good” jobs, outward shift of Beveridge Curve, and decline in over all efficiency and labor productivity.
  - ▶ “mismatches” occur because of immobility, not because of search friction per se



# Agendas (1)

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- ▶ **Dynamics**
  - ▶ Idiosyncratic shocks
  - ▶ order of impacts: stop hiring, lay off trainees, and lay off permanent employees
- ▶ **Modeling (limited) worker mobility**
  - ▶ Immigration allowed only when they finish schools
  - ▶ Specificity of training
- ▶ **Other candidate factors?**
  - ▶ Idiosyncratic shocks on productivity?
  - ▶ Permanent decline in productivity?
  - ▶ Supply sides (composition effects)
- ▶ **Policy Simulations**
  - ▶ Firing cost



# Agendas (2)

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- ▶ **Immobility across regions or industries?**
  - ▶ regional or industry level dispersion
  - ▶ Declining labor mobility across regions well documented, but not across industries.
  - ▶ Capital immobility across industries well documented and its impact known, but nothing on regional immobility
- ▶ **Calibration or estimation?**
  - ▶ Matching function (no compelling reason to use urn-ball model)
  - ▶ Immigration decision
  - ▶ Exogenous or endogenous separations
  - ▶ On the job search and quits (specificity of training)
  - ▶ Dynamic or comparative statics

