

# The Marginal Efficiency of Active Search

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# Marginal efficiency of active search

- ▶ Two ways of finding a job:
  1. Search for the job (**active search**)
  2. Let the job search for you (**passive search**)
- ▶ Growing literature documenting the importance of **passive search**
  - ▶ Davis, Macaluso, and Waddell (2021)
  - ▶ Faberman, Mueller, Sahin, and Topa (2022)
- ▶ How important is **active search** for finding a job?
  - ▶ Key parameter: **marginal efficiency of active search (MEoAS)**
  - ▶ Describes **elasticity of job-finding rate** w/r.t. **search effort**
- ▶ **This paper**: estimate & characterize the **MEoAS** of non-employed workers over a broad class of models

# Estimating the MEoAS: a first pass

- ▶ Study general model of random search:
  - ▶ Extensive and intensive margins of **active search**
  - ▶ All workers engaged in **passive search**
  - ▶ Constant **marginal efficiency of active search (MEoAS)**

Assumptions/ingredients are familiar to the literature.

- ▶ Develop restriction: **job-finding rate** of **active-searchers** (relative to **passive** searchers) should be **increasing** in average active search
- ▶ If restriction holds, can estimate **MEoAS** from time series
- ▶ But **(robustly) reject restriction**: all else equal, probability of finding a job from active search is declining in average active search effort!
- ▶ Reexamine assumptions: why should the **MEoAS** be constant?

# Estimating the MEoAS: a second pass

- ▶ Constant MEoAS  $\Leftrightarrow$  active and passive search are perfect substitutes (Assumption from Blanchard and Diamond (1990), now ubiquitous)
- ▶ Rules out *strategic substitutability* of active search
- ▶ Go back to model: leave elasticity of substitution between active and passive search unrestricted (i.e., allow elasticity  $< \infty$ )
- ▶ New model, new restriction: this time, cannot reject
- ▶ Estimated MEoAS is decreasing in aggregate quantity of active search
- ▶ Active search is “less important” during a recession
- ▶ Policy implication: optimal UI increases during recessions

A general model

# Setting

- ▶ Representative family à la Andolfatto (1995) and Merz (1996)
  - ▶ Unit measure of workers indexed by  $i$  within each family
  - ▶  $ne_t$  workers are non-employed,  $1 - ne_t$  are employed

Perfect consumption insurance within family

- ▶ Concave utility over consumption
- ▶ Workers must sacrifice leisure to work or search
- ▶ A matched worker and job generate  $y_{it}$  units of output
- ▶ Matches generated through CRS matching function  $m_t$
- ▶ Large measure of firms post  $v_t$  vacancies
- ▶ Search of non-employed is passive, possibly also active

# Active and passive search

- ▶ CRS matching function  $m_t$  over search efficiency and vacancies
- ▶ Search efficiency is composite of active and passive search
- ▶ Non-employed inelastically provide one unit of passive search
- ▶ Non-employed workers choose  $s_{A,i,t}$  units of active search, subject to fixed costs ( $\bar{c}_{i,t}$ ) and convex costs ( $c(s_{A,i,t})$ )
- ▶ Flexible to different notions of active search:
  - ▶ Intensive & extensive margin:  $s_{A,i,t} \in \mathbb{R}_+$  (FMST 2022)
  - ▶ Ext. margin:  $s_{A,i,t} \in \{0, 1\}$  (KMRS 2017, CFM 2022, AV 2023)
- ▶ Marginal efficiency of active search (MEoAS) denoted as  $\omega$

# Matching function and job-finding probabilities

- ▶ Job-finding rate,  $f_{i,t}$

$$f_{i,t} = s_{i,t} \cdot \left( \frac{m_t(s_t, v_t)}{s_t} \right) \quad (*)$$

- ▶ Search efficiency,  $s_{i,t}$

$$s_{i,t} = \omega \cdot s_{A,i,t} + (1 - \omega) \cdot 1 \quad (**)$$

- ▶ Aggregate active & passive search search,  $s_{A,t}$  &  $s_{P,t}$

$$s_{A,t} = \int_i s_{A,i,t} d\Gamma_t^{ne}(i) \quad \& \quad s_{P,t} = ne_t$$

- ▶ Aggregate search efficiency,  $s_t$

$$s_t = \omega \cdot s_{A,t} + (1 - \omega) \cdot ne_t$$

- ▶ Fraction of non-employed engaged in active search,  $\check{\gamma}_t^{ne}$

$$\check{\gamma}_t^{ne} \equiv \int \mathbb{I}\{s_{A,i,t} > 0\} d\Gamma_t^{ne}(i)$$



# Problem of the unemployed

$$U_{i,t} = \max_{S_{A,i,t}} \left\{ \frac{1}{\mu_t} \left( \psi - \varsigma_{i,t} \cdot \mathbb{I} \{ S_{A,i,t} > 0 \} - \chi \cdot \frac{S_{A,i,t}^{1+\varkappa}}{1+\varkappa} \right) \right. \\ \left. + \mathbb{E}_t \left\{ \Lambda_{t,t+1} \cdot \left[ f_{i,t} \cdot W_{i,t+1} + (1 - f_{i,t}) \cdot U_{i,t+1} \right] \right\} \right\}$$

with

$$f_{i,t} = (\omega \cdot S_{A,i,t} + (1 - \omega)) f_t$$

- ▶  $V_{i,t}(U_{i,t})$  is consumption-equivalent value of (non)employment
- ▶ Flow value of leisure  $\psi$  and search cost normalized by marginal utility of consumption  $\mu_t$ , with  $\Lambda_{t,t+1} \equiv \beta \cdot (\mu_{t+1}/\mu_t)$

# Solution

- ▶ Optimal active search,  $s_{A,i,t}$

$$s_{A,i,t} = \begin{cases} s_{A,i,t}^{int} & \text{if } U_{i,t} \Big|_{s_A=s_{A,i,t}^{int}} - U_{i,t} \Big|_{s_A=0} \geq 0 \\ 0 & \text{otherwise} \end{cases}$$

$$\text{where } \frac{\chi}{\mu_t} [s_{A,i,t}^{int}]^\zeta = \mathbb{E}_t \left\{ \Lambda_{t,t+1} \cdot \omega \cdot f_t \cdot [V_{i,t+1} - U_{i,t+1}] \right\}$$

- ▶ MC = MB when net value of active search is positive
- ▶ Active search ( $s_{A,i,t}$  &  $\mathbb{I}\{s_{A,i,t} > 0\}$ ) can be
  - ▶ Procyclical, from  $f_t$  (substitution effect)
  - ▶ Countercyclical, from  $\mu_t$  (income effect)
- ▶ Income effect dominates in data

# Restriction: active-passive ratio and average active search

- ▶ Restriction in active-passive ratio  $\bar{f}_{A,t}/\bar{f}_{P,t}$  from (\*) and (\*\*):

$$\frac{\bar{f}_{A,t}}{\bar{f}_{P,t}} - 1 = \frac{(\omega \cdot \bar{s}_{A,t}^* + (1 - \omega)) \left( \frac{m_t(s_t, v_t)}{s_t} \right)}{(1 - \omega) \left( \frac{m_t(s_t, v_t)}{s_t} \right)} - 1 = \left( \frac{\omega}{1 - \omega} \right) \cdot \bar{s}_{A,t}^*$$

- ▶ Unit elasticity in  $\bar{s}_{A,t}^*$  – all other quantities drop out!
  - ▶ Match efficiency differenced out
  - ▶ Unobserved heterogeneity of non-employed enters through  $\bar{s}_{A,t}^*$
  - ▶ Non-employed engaged in active search  $\check{\gamma}_t^{ne}$  never appears at all
- ▶ Similar restr'n appears in KMRS (2017, AER) & FMST (2022, ECTA) & ...

# Restriction: active-passive ratio and average active search

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$$\log \left( \frac{\bar{f}_{A,t}}{\bar{f}_{P,t}} - 1 \right) = \log \left( \frac{\omega}{1 - \omega} \right) + 1 \cdot \log \bar{s}_{A,t}^*$$

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Bringing the restriction to  
the data

# CPS, 1996-2019

- ▶ Starting in 1994, CPS records following for jobless respondents:
  - ▶ Whether the respondent would be **willing** to **accept a job**
  - ▶ Whether the worker is engaged in nine methods of **active search**
  - ▶ If **# search methods** = 0, **why no active search?**

Consistent monthly merges available 1996+

- ▶ Non-employed worker willing to accept a job is
  - ▶ **Active searcher** if **# search methods** > 0
  - ▶ **Passive searcher**: **# search methods** = 0 & want (+ able) to work
- ▶ **Time spent searching** near linear in **# of search methods** (Mukoyama, Patterson, and Sahin 2018) ⇒ **measure of search effort**

# The cyclicality of active search

	Active non-employed	Passive non-employed	$\frac{A-NE}{A-NE+P-NE}$	Avg. # of search methods
mean(x)	4.9	1.3	0.79	1.85
std(x)/std(Y)	11.0	5.7	1.50	2.65
corr(x, Y)	-0.89	-0.70	-0.75	-0.64

Note: Data from CPS, 1996-2019. *A-NE* and *P-NE* refer to active and passive non-employed *Y* indicates quarterly GDP. For second and third row, series are taken as (1) quarterly averages of seasonally adjusted monthly series, (2) logged, then (3) HP-filtered with smoothing parameter of 1600

- ▶ Both **frac. searching** & **# of search methods** is **countercyclical**
- ▶ See also Osberg (1993), Shimer (2004), Faberman and Kudlyak (2016), Elsby, Hobijn and Sahin (2015), Mukoyama, Patterson, and Sahin (2018)

# Job-finding rates of the active and passive non-employed

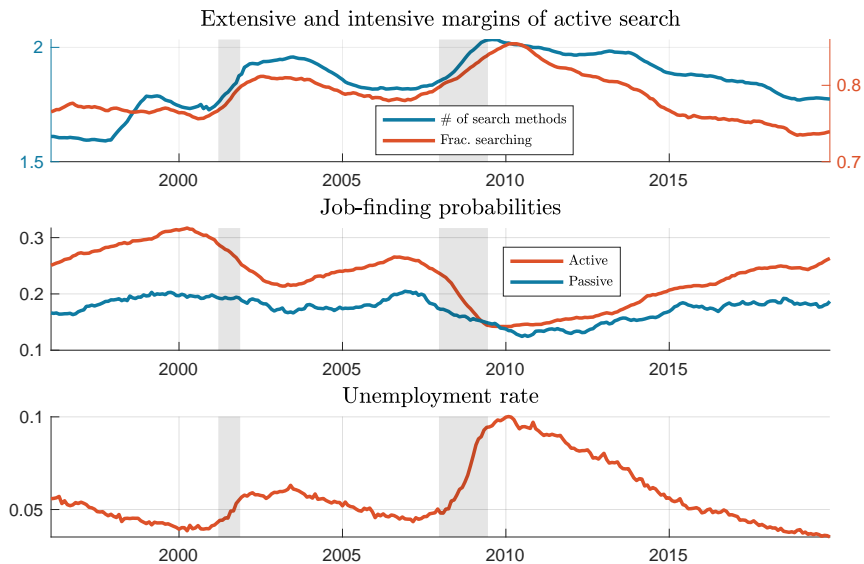
	$A-NE \rightarrow E$ probability	$P-NE \rightarrow E$ probability	$A-P$ ratio
mean( $x$ )	0.23	0.17	1/1.32
std( $x$ )/std( $Y$ )	8.67	8.87	9.53
corr( $x, Y$ )	0.85	0.32	0.48

Note: Data from CPS, 1996-2019.  $A-NE$  and  $P-NE$  refer to active and passive non-employed, " $A-P$  ratio" refers to active-passive ratio of job-finding probabilities,  $Y$  indicates quarterly GDP. For second and third row, series are taken as (1) quarterly averages of seasonally adjusted monthly series, (2) logged, then (3) HP-filtered with smoothing parameter of 1600

- ▶ Mildly procyclical job-finding probability of passive non-employed
- ▶ Highly procyclical job-finding probability of active non-employed
- ▶ Thus, procyclical active-passive ratio in job-finding probabilities



# Search and job-finding probabilities



# Testing the restriction

- ▶ Recall restriction:

$$\log \left( \frac{\bar{f}_{A,t}}{\bar{f}_{P,t}} - 1 \right) = \log \left( \frac{\omega}{1 - \omega} \right) + 1 \cdot \log \bar{s}_{A,t}^*$$

Theory predicts **unit** elasticity

- ▶ Estimated elasticity from data: **-7.61** (SE= 0.898)
- ▶ Robust to:

- ▶ Different measures of  $\bar{f}_{P,t}$  ▶ Alternative passive searcher measures
- ▶ Controls for cyclical composition ▶ Composition 1/2 ▶ Composition 2/2
- ▶ Controls for duration dependence among active searchers ▶ DD

# An unrestricted CES search aggregator

# CES aggregator for search effort

- ▶ Aggregate search effort  $\mathbf{s}_t$  given by CES aggregator over  $\mathbf{s}_{A,t}$  and  $\mathbf{s}_{P,t}$

$$\mathbf{s}_t = \left( \omega \mathbf{s}_{A,t}^\rho + (1 - \omega) \mathbf{s}_{P,t}^\rho \right)^{\frac{1}{\rho}}$$

- ▶ Aggregate active & passive search satisfy

$$\mathbf{s}_{A,t} = \int \mathbf{s}_{A,i,t} d\Gamma_t^{ne} = (\check{\Gamma}_t^{ne} \cdot ne_t) \cdot \bar{\mathbf{s}}_{A,t}^* \quad \& \quad \mathbf{s}_{P,t} = \int d\Gamma_t^{ne} = ne_t$$

- ▶  $ME_{A,t}$  and  $ME_{P,t}$  are marginal efficiencies of active and passive search

$$ME_{A,t} = \frac{\partial \mathbf{s}_t}{\partial \mathbf{s}_{A,t}} = \omega \cdot \left( \frac{\mathbf{s}_t}{\mathbf{s}_{A,t}} \right)^{1-\rho}, \quad ME_{P,t} = \frac{\partial \mathbf{s}_t}{\partial \mathbf{s}_{P,t}} = (1 - \omega) \cdot \left( \frac{\mathbf{s}_t}{\mathbf{s}_{P,t}} \right)^{1-\rho}$$

# Returns to search

- ▶ The job-finding probability  $f_{i,t}$  of a worker with search efficiency  $s_{i,t}$  is

$$f_{i,t} = s_{i,t} \cdot \left( \frac{m_t(\mathbf{s}_t, \mathbf{v}_t)}{\mathbf{s}_t} \right)$$

- ▶ The search efficiency  $s_{i,t}$  of a worker supplying  $s_{A,i,t}$

$$s_{i,t} = ME_{A,t} \cdot s_{A,i,t} + ME_{P,t} \cdot 1$$

by linear homogeneity of the CES search aggregator

- ▶ Nests prior case when  $\rho = 1$ :

$$s_{i,t} = \omega \cdot s_{A,i,t} + (1 - \omega) \cdot 1$$

# Restriction from theory, redux

- ▶ Relative job-finding probabilities, **active** vs. **passive** search

$$\begin{aligned}\frac{\bar{f}_{A,t}}{\bar{f}_{P,t}} - 1 &= \frac{(ME_{A,t} \cdot \bar{S}_{A,t}^* + ME_{P,t}) \left( \frac{m_t(s_t, v_t)}{s_t} \right)}{ME_{P,t} \left( \frac{m_t(s_t, v_t)}{s_t} \right)} - 1 \\ &= \left( \frac{\omega}{1 - \omega} \right) \left( \frac{1}{\Gamma_t^{ne}(\bar{s}_t) \bar{S}_{A,t}^*} \right)^{1-\rho} \cdot \bar{S}_{A,t}^*\end{aligned}$$

- ▶ Thus,

$$\log \left( \frac{\bar{f}_{A,t}}{\bar{f}_{P,t}} - 1 \right) = \log \left( \frac{\omega}{1 - \omega} \right) + (\rho - 1) \cdot \log \Gamma_t^{ne}(\bar{s}_t) + \rho \cdot \log \bar{S}_{A,t}^*$$

- ▶ Return to data: test restriction in  $\rho$ , estimate  $\omega$  and  $\rho$

# Regression estimates

	(1)	(2)	(3)	(4)	(5)	(6)
$\beta_{\text{Frac}}$	-6.029*** (1.9596)	-5.374*** (0.5413)	-10.468*** (1.2716)	-2.771*** (0.4071)	-2.460*** (0.1465)	-3.295*** (0.2374)
$\beta_{\#}$	-3.905*** (1.3223)	-4.374*** (0.5413)	—	-0.950* (0.5268)	-1.460*** (0.1465)	—
$\beta_0$	1.041 (0.9789)	1.393*** (0.2520)	-1.679*** (0.3452)	-0.436 (0.4291)	-0.040 (0.0933)	-1.147*** (0.1553)
Passive searchers:	Want job, discouraged			Want job, all		
Constrain $\beta_{\text{Frac}} + 1 = \beta_{\#}$ ?	No	Yes	—	No	Yes	—
F-test	$p(\beta_{\text{Frac}} + 1 = \beta_{\#})$ = 0.716	$p(\rho = 1)$ = 0.000	$p(\rho = 1)$ = 0.000	$p(\beta_{\text{Frac}} + 1 = \beta_{\#})$ = 0.358	$p(\rho = 1)$ = 0.000	$p(\rho = 1)$ = 0.000
$N$	279	279	279	288	288	288
Implied $\rho$	—	-4.374	-11.468	—	-1.460	-4.295
Implied $\omega$		0.801	0.157		0.490	0.241

Note: CPS, 1996-20019

# Regression estimates, Pt. 1

	(1)	(2)	(3)
$\beta_{\text{Frac}}$	-6.029*** (1.9596)	-5.374*** (0.5413)	-10.468*** (1.2716)
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F-test	$\rho(\beta_{\text{Frac}} + 1 = \beta_{\#})$ = 0.716	$\rho(\rho = 1)$ = 0.000	$\rho(\rho = 1)$ = 0.000
$N$	279	279	279
Implied $\rho$	—	-4.374	-11.468
Implied $\omega$		0.801	0.157

Note: CPS, 1996-20019



# Regression estimates, Pt. 2

	(4)	(5)	(6)
$\beta_{\text{Frac}}$	-2.771*** (0.4071)	-2.460*** (0.1465)	-3.295*** (0.2374)
$\beta_{\#}$	-0.950* (0.5268)	-1.460*** (0.1465)	—
$\beta_0$	-0.436 (0.4291)	-0.040 (0.0933)	-1.147*** (0.1553)
Passive searchers:	Want job, all		
Constrain $\beta_{\text{Frac}} + 1 = \beta_{\#}$ ?	No	Yes	—
F-test	$\rho(\beta_{\text{Frac}} + 1 = \beta_{\#})$ = 0.358	$\rho(\rho = 1)$ = 0.000	$\rho(\rho = 1)$ = 0.000
$N$	288	288	288
Implied $\rho$	—	-1.460	-4.295
Implied $\omega$		0.490	0.241

Note: CPS, 1996-20019

# Takeaway

$$\log \left( \frac{\bar{f}_t^A}{\bar{f}_t^P} - 1 \right) = \rho \cdot \log z_t + \log \left( \frac{\omega}{1 - \omega} \right) + (\rho - 1) \cdot \log \Gamma_t^{ne}(\check{z}_t) + \rho \cdot \log \bar{s}_t^{A,*}$$

- ▶ **Reject** restriction  $\rho = 1$  (i.e., **existing** framework)
- ▶ **Fail to reject** restriction  $\beta_{\text{Frac}} + 1 = \beta_{\#}$  (i.e., **unrestricted** framework)
- ▶ Elasticity of substitution  $\frac{1}{1-\rho}$  is **1/5** (int. + ext.) or **1/12** (ext. only)

## Application 1:

The marginal efficiency of active search over the business cycle

# What is a CES search aggregator?

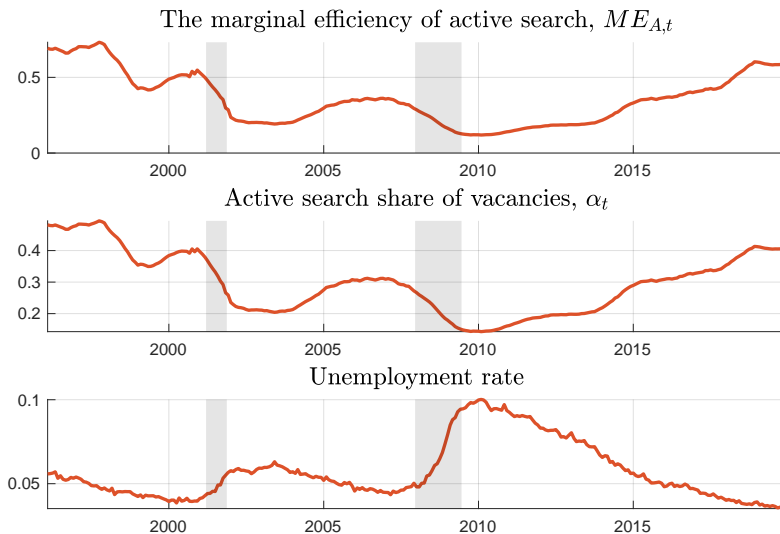
- ▶ **Equivalence**: separate submarkets for **active** and **passive** search

$$m_t(\mathbf{s}_t, v_t) = m_t(ME_{A,t} \cdot \mathbf{s}_{A,t}, \alpha_t \cdot v_t) + m_t(ME_{P,t} \cdot \mathbf{s}_{P,t}, (1 - \alpha_t) \cdot v_t)$$

$$\text{with } \alpha_t = \frac{ME_{A,t} \cdot \mathbf{s}_{A,t}}{\mathbf{s}_t} = \frac{\mathbf{s}_{A,t}^\rho}{\mathbf{s}_{A,t}^\rho + \mathbf{s}_{P,t}^\rho}, \quad \rho \leq 1$$

- ▶ (Obtains through constant returns)
- ▶ **Vacancy share** of **active search**  $\alpha_t$  analogous to **factor share**
  - ▶  $\rho < 0 \Rightarrow \alpha_t$  decreasing in  $(\mathbf{s}_{A,t}/\mathbf{s}_{P,t})$
  - ▶ Countercyclical  $(\mathbf{s}_{A,t}/\mathbf{s}_{P,t}) \Rightarrow$  Procyclical  $\alpha_t$
- ▶  $ME_{A,t}$  and  $\alpha_t$  both fall during recessions

# Backing out the marginal efficiency of active search



# Application 2: Baily-Chetty Formula

## Appl. 2) Baily-Chetty Formula

- ▶ Optimal UI described by Baily-Chetty formula:

$$\underbrace{\frac{d \log u}{d \log R}}_{\text{increasing in } R} = \underbrace{\left( \frac{U'(c^u)}{U'(c^e)} - 1 \right)}_{\text{decreasing in } R} \quad (\text{BC})$$

where  $u$  is unemployment and  $R$  is the replacement rate

- ▶ Landais et al. (2018): if wages are perfectly rigid (+ other conditions), (BC) describes optimal replacement rate  $R$
- ▶ Micro-elasticity  $\frac{d \log u}{d \log R}$  typically taken as constant  $\Rightarrow R$  constant
- ▶ But  $\frac{d \log u}{d \log R}$  is proportional to the marginal efficiency of active search...

## Appl. 2) Baily-Chetty Formula, cont'd

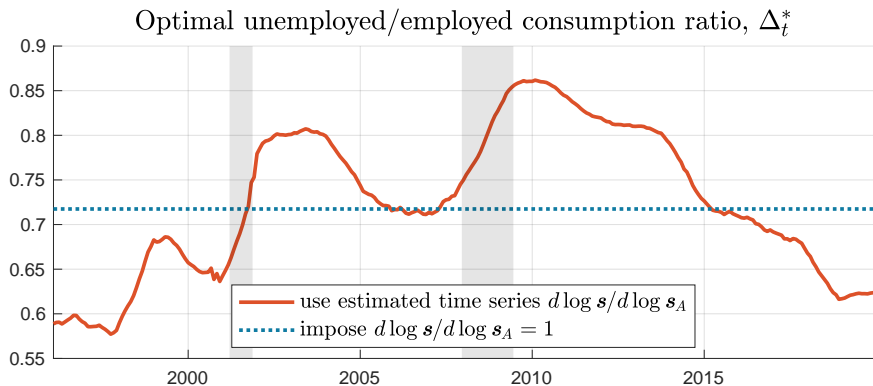
- Write micro-elasticity as

$$\begin{aligned}\frac{d \log u}{d \log R} &= \frac{d \log u}{d \log f} \cdot \frac{d \log f}{d \log R} \\ &\approx -(1 - \tilde{u}) \cdot \frac{d \log f}{d \log s} \cdot \frac{d \log s}{d \log s_A} \cdot \frac{d \log s_A}{d \log R} \\ &= -(1 - \tilde{u}) \cdot \sigma \cdot \left[ \omega \cdot \left( \frac{s_A}{s} \right)^\rho \right] \cdot \frac{d \log s_A}{d \log R}\end{aligned}$$

- Note,  $\rho < 0$ , so the elasticity is not constant!
- Next, (i) take avg.  $-\frac{d \log f}{d \log R}$  to be equal to 0.42 (Katz and Meyer, 1990), (ii) compute average  $\frac{d \log s}{d \log s_A}$ , and (iii) solve for  $\frac{d \log s_A}{d \log R}$
- Use to obtain time series for  $\frac{d \log u}{d \log R}$



## Appl. 2) Baily-Chetty Formula, cont'd



- ▶ Define *unemployed/employed consumption ratio*:  $\Delta_t = (c_t^u / c_t^e) - 1$
- ▶ Assume  $U(c) = \log c$ . Then, (BC)  $\Rightarrow \Delta_t^* = (1 + \frac{d \log U}{d \log R})^{-1}$
- ▶  $\Delta_t^*$  higher during recessions due to **marginal efficiency of active search**

Conclusion

# Conclusion

- ▶ Develop restriction from 3-state search model with constant **MEoAS**:  
**Active-passive ratio** in **job-finding prob's** has unit elasticity in **active search effort**
- ▶ Robustly **reject restriction**
- ▶ Relax **perfect substitutability** of active & passive search:
  - ▶ Develop new restriction, **fail to reject**
  - ▶ Estimate **MEoAS** that is **decreasing** in **active search**
- ▶ Implications:
  - ▶ Active search “**less important**” for finding a job during a recession
  - ▶ Scope for **more generous UI** during a recession

Extra slides

# Why not looking?

1. “Believes no work available in area of expertise”
2. “Couldn’t find any work”
3. “Lacks necessary schooling/training”
4. “Employers think too young or too old”
5. “Other types of discrimination”
6. “Can’t arrange childcare”
7. “Family responsibilities”
8. “In school or other training”
9. “Ill-health, physical disability”
10. “Transportation problems”
11. “Other - specify”

# Time spent searching (MPS 2018)

198

AMERICAN ECONOMIC JOURNAL: MACROECONOMICS

JANUARY 2018

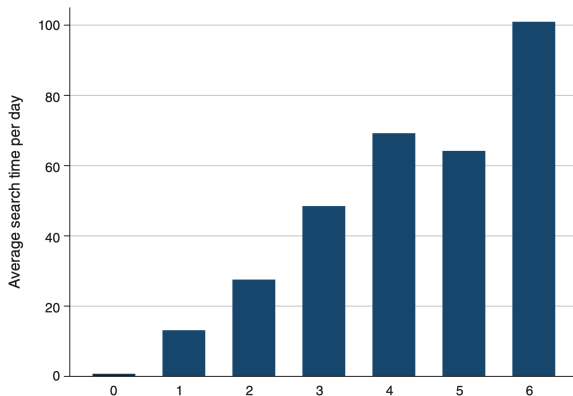


FIGURE 1. THE AVERAGE MINUTES (*per day*) SPENT ON JOB SEARCH ACTIVITIES BY THE NUMBER OF SEARCH METHODS

*Notes:* Each bin reflects the average search time in minutes per day by the number of search methods that the individual reports using in the previous month. Data is pooled from 2003–2014 and observations are weighted by the individual sample weight.

# Definitions of job search (MPS 2018)

TABLE 2—DEFINITIONS OF JOB SEARCH METHODS IN CPS AND ATUS

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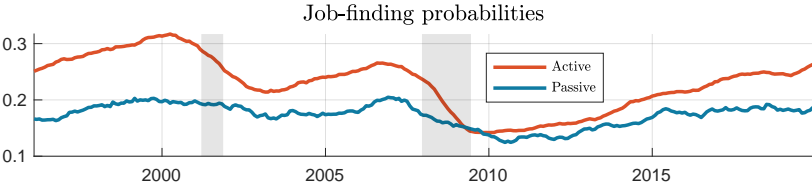
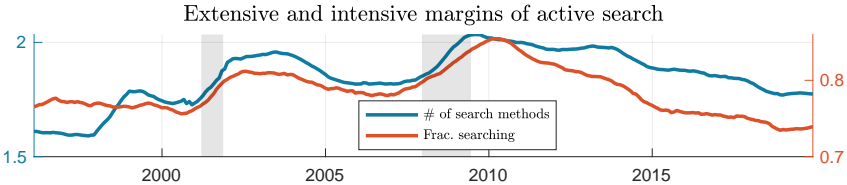
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Contacting an employer directly or having a job interview
Contacting a public employment agency
Contacting a private employment agency
Contacting friends or relatives
Contacting a school or university employment center
Checking union or professional registers
Sending out resumes or filling out applications
Placing or answering advertisements
Other means of active job search
Reading about job openings that are posted in newspapers or on the internet
Attending job training program or course
Other means of passive job search

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*Note:* The first nine are active, the last three are passive.

# Search and job-finding probabilities





## Elasticity of active-passive ratio in job-finding probabilities

Dependent variable: Log active-passive ratio in in job-finding probabilities (minus one)			
	(1)	(2)	(3)
Log # of search methods	-7.609*** (0.8975)	-4.857*** (0.3933)	-3.006*** (0.1487)
Time trend	-8.0e-4* (4.5e-4)	-4.3e-4** (2.0e-4)	-7.9e-5 (7.9e-5)
Constant	4.004*** (0.4755)	2.808*** (0.2180)	3.228*** (0.0947)
$p(\beta_{\#} = 1)$	0.000	0.000	0.000
$N$	279	288	288
Passive searchers:	Want job (discouraged)	Want job (all)	Nilf
CPS, 1996-2019			

## Elasticity of the active-passive ratio: adjustment for cyclical composition 1/2

Dependent variable: Log active-passive ratio in in job-finding probabilities (minus one)			
	(1)	(2)	(3)
Log # of search methods	-6.038*** (0.7340)	-2.973*** (0.3299)	-2.051*** (0.1943)
Time trend	-2.2e-3*** (4.1e-4)	-1.4e-3*** (1.9e-4)	-5.5e-4*** (1.1e-4)
Constant	3.853*** (0.5340)	2.203*** (0.2413)	2.328*** (0.1422)
$p(\beta_{\#} = 1)$	0.000	0.000	0.000
$N$	326	334	334
Passive searchers:	Want job (discouraged)	Want job (all)	Nilf

CPS, 1996-2019

- Population weights of 72 subgroups held constant in regression groups, where subgroups are defined by reason for unemployment (if unemployed), education level, age group, and gender

## Elasticity of the active-passive ratio: adjustment for cyclical composition 2/2

Dependent variable: Log active-passive ratio in in job-finding probabilities (minus one)			
	(1)	(2)	(3)
Log # of search methods	-3.464*** (0.8838)	-2.012*** (0.4994)	-2.759*** (0.5131)
Time trend	-1.6e-3*** (6.0e-4)	-1.9e-3*** (3.5e-4)	-1.5e-3*** (3.6e-4)
Constant	1.652*** (0.6256)	1.609*** (0.3669)	2.156*** (0.3746)
$\rho(\beta_{\#} = 1)$	0.000	0.000	0.000
$N$	296	328	324
Passive searchers:	Want job (discouraged)	Want job (all)	Nilf

CPS, 1996-2019

- Population weights of 360 subgroups held constant in regression groups, where subgroups are defined by reason for unemployment (if unemployed), education level, age group, gender, and labor market status a year ago (employed, temporary layoff, unemployed, passive searcher, other nonparticipant)

## Elasticity of the active-passive ratio: duration dependence

Dependent variable: Log active-passive ratio in in job-finding probabilities (minus one)			
	(1)	(2)	(3)
Log # of search methods	-1.717*** (0.3827)	-1.581*** (0.2195)	-1.748*** (0.1066)
Time trend	-1.6e-4 (2.6e-4)	4.5e-5 (1.5e-4)	2.0e-4*** (7.3e-5)
Constant	0.832*** (0.2234)	1.073*** (0.1281)	2.595*** (0.0623)
$p(\beta_{\#} = 1)$	0.000	0.000	0.000
$N$	288	288	288
Passive searchers:	Want job (discouraged)	Want job (all)	Nilf

CPS, 1996-2019