**Discouragement Traps**

Tristan L. Potter  
Drexel University

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**Abstract**

I introduce a simple measure of the extent of discouragement among potential job seekers—the discouragement rate—and show that this measure rose sharply during the Great Recession and has not recovered to its pre-crisis level. To explain this, I propose a theory in which fears of prolonged joblessness can become self-fulfilling, drawing the economy into a high-discouragement, low-participation state: a discouragement trap. Intuitively, when job losers fear it will be difficult to find work if they remain jobless for too long, they search aggressively, crowding out those at the back of the queue, inducing labor force withdrawal, and rationalizing fears of prolonged joblessness. This mechanism emerges naturally from a model of ranking in the spirit of Blanchard and Diamond (1994) when workers make participation decisions and submit multiple applications. The model gives rise to multiple Pareto-ranked steady states with significantly different rates of labor force participation but similar, and in some cases identical, unemployment rates. This mechanism emerges naturally from a model of ranking in the spirit of Blanchard and Diamond (1994) when workers make participation decisions and submit multiple applications. The model gives rise to multiple Pareto-ranked steady states with significantly different rates of labor force participation but similar, and in some cases identical, unemployment rates. The high-participation state is saddle-point stable, while the (Pareto-dominated) low-participation state is a sink—a discouragement trap. I study global dynamics, conditions under which an economy is susceptible to such traps, and implications for policy.

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**Introduction**

This paper introduces a measure of the extent of discouragement in the economy—the discouragement rate—and proposes a simple theory of multiple equilibria to help explain its dynamics.

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**The Discouragement Rate**

- **Question:** What share of potential job seekers has given up searching?
- **Idea:** Partition non-employed workers:
  1. Searched (u)
  2. Didn’t search + could have (s)
  3. Didn’t search + could not have (l)
- **Concept:** Discouragement Rate (d)

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**Theory**

I propose a simple theory in which fears of prolonged joblessness give rise to strategic complementarities in search and lead to multiple equilibria.

**Overview**

- Discrete-time variation on Blanchard and Diamond (1994)
- Ex-ante identical workers:
  - Employed (e)
  - Short-term jobless (s)
  - Long-term jobless (l)
- Search effort decision:
  - Extensive margin: Participation
  - Intensive margin: 8 of applications (a ∈ N)

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**Labor Market**

The labor market is central to the mechanism. Figure 2 depicts the labor market in a typical period.

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**Equilibrium**

I conjecture that there exists a ranking-sorting equilibrium in which (i) all short-term jobless choose to participate in the labor market, (ii) all long-term jobless choose not to participate in the labor market, and (iii) firms receiving applications from multiple workers choose to make an offer to the worker with the shortest duration.

**Value functions:**

- Employment: \( V^e_t = s_t + \delta V^e_{t+1} \)  
- Non-employment (ST): \( V^s_t = \max \{ b_t - \phi(l_t) + \delta \{ p_t(l_t)V^s_{t+1} + (1 - p_t(l_t))V^e_{t+1} \} \} \)  
- Non-employment (LT): \( V^l_t = \max \{ b_t - \phi(l_t) + \delta \{ p_t(l_t)V^l_{t+1} + (1 - p_t(l_t))V^e_{t+1} \} \} \)  
- Vacancy: \( V^v_t = -\lambda + \delta \{ p_t(l_t)V^v_{t+1} + (1 - p_t(l_t))V^e_{t+1} - \phi(l_t) \} \)  
- Filled job: \( V^j_t = y_t - \delta V^j_{t+1} \)  

**Equilibrium conditions:**

- Short-term LOM: \( s_{t+1} = 1 - \delta \)  
- Long-term LOM: \( s_{t+1} = 1 - \delta + \delta \{ p_t(l_t)V^s_{t+1} + (1 - p_t(l_t))V^e_{t+1} \} \)  
- Search FOC: \( \phi(l_{t+1}) + \delta \{ p_t(l_t)e_t + (1 - p_t(l_t))s_t \} = \phi(l_t) + \delta \{ p_t(l_t)e_t + (1 - p_t(l_t))s_t \} \)  
- Vacancies LOM: \( v_{t+1} = (1 - \delta)(1 - \phi(l_t))v_t + f(V^j_t) \)  
- Wages: \( w_t = \arg \max \{ V^v_t - V^j_t | V^v_t - V^j_t \} \)

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**Search Effort Reaction Function**

How do Discouragement Traps arise? For exposition, consider a steady-state partial equilibrium version of the preceding model with (i) \( s_t \rightarrow e_t \) (fixed proportion wage) and (ii) \( x_t = \frac{1}{10} \) (Blanchard-Diamond vacancies).

Then, recently unemployed worker’s effort, \( x_t \), can be expressed as an implicit function of average effort \( \lambda \):

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\lambda = \frac{1}{10} \left( \frac{V^v_t - V^j_t}{V^v_t - V^j_t} \right) \]

Aggregate search effort (1) affects individual effort (1) through the three channels, described above. The first and second are standard in search models. The third, which creates strategic complementarities in search effort and leads to multiplicity, arises because non-participants are residual claimants to vacancies.

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**Steady State(s) & Global Dynamics**

I calibrate the model to pre-2007 data, using standard values from the literature where applicable.

**Direct**

- Bargaining parameter: \( \chi = 0.7 \)
- Flow value of non-emp.: \( b = 0.7 \)
- Training cost (units of output): \( \theta = 0.5 \) (quarter)
- Job creation elasticity: \( \xi = 0.205 \) (Cohn et al.)

**Indirect**

- Discouragement Rate (d)
- Employment to search: \( \frac{d}{d\lambda} \)  
- Discouragement Trap (e)
- Job creation: \( \frac{d}{d\lambda} \)  
- Discouragement Rate (d)
- Discouragement Trap (e)

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**Welfare and Policy**

The model highlights the role for policies that affect search effort. For example, policies that make long-term joblessness less difficult (e.g. UI extensions; welfare) affect welfare by rotating the search effort locus (red).

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**Policy lessons:***

1. Policy can potentially eliminate Discouragement Traps by sufficiently discouraging search.
2. Optimal policy depends on the equilibrium:
   - (a) Low-discouragement eq: Interior optimum: \( \theta \approx 0.75 \)
   - (b) High-discouragement eq: For \( \theta \approx 0.2 \), \( \frac{d}{d\lambda} \approx 0 \). Note that \( \frac{d}{d\lambda} < 0 \) at \( \lambda = 0 \).

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**Summary**

- New concept: Discouragement rate. Sunk during Great Recession, hasn’t recovered.
- Theory of multiple equilibria in participation generated by self-fulfilling fears of prolonged joblessness.