Discussion of

Workplace Flexibility and Entrepreneurship

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Overview of the paper: empirical setting

- Home-based entrepreneurship scheme in Singapore
    - Allowed business registration under residential address for a subset of industries starting from November 2001
    - A setting suitable for a difference-in-difference research design

- Main equation

$$Y_{jt} = \alpha_0 + \alpha_1 \cdot T_j \cdot I(\text{Post})_{jt} + \alpha_2 X_{jt} + \alpha_3 \cdot T_j \cdot \text{Macro}_t + \delta_t + \theta_j + \epsilon_{jt}$$

- j: industry, t: month,
    - Y_j: log number of newly created firms
    - T_j: dummy for the treatment group
    - $I(\text{Post})_{jt}$: dummy for the month after November 2001

Overview of the paper: main findings

Compared to the control group, the treatment group experienced:

F1. Increase in firm creation by 23% point more, pronounced among

    a. low-income individuals

    b. small-scale businesses

    c. novice entrepreneurs

    d. high productivity, low risk industries

    e. (Not pronounced among married entrepreneurs)

F2. Conditional on failure, higher probability of starting a second business

F3. Higher survival rate

F4. Higher probability of starting a second business with more employees and similar survival rate

F5. A sizable and positive impact on local house prices

Overview of the paper: interpretation

1. A financial constraint is a barrier for firm creation

    - Firm creation is more pronounce among low-income group

2. A shame of business failure is another barrier for firm creation

    - Conditional on failure, higher probability of starting a business

3. Workplace flexibility may not enhance the non-pecuniary benefit

    - Not pronounced effect among married entrepreneurs

4. The home office scheme does not lower the average quality of the pool

    - Higher survival rate
    - Better 2nd business creation
    - More prononced among high productivity, low risk industries

Overview of the paper

- ▶ Very interesting paper!

- ▶ Clear and convincing empirical strategy

- ▶ Interesting and important empirical findings

- ▶ Comments on (1) a mechanism and (2) interpretation

A model of the home office scheme

- ▶ Based on Evans and Jovanovic [1989]

- ▶ An agent chooses to become either a worker or an entrepreneur

- ▶ Worker payoff: w

- ▶ Entrepreneur payoff:

$$y = \max_{k \in [0, \lambda A]} \mathbb{E}[\{\theta k^\alpha - rk\}\epsilon] - \tau, \quad \alpha \in (0,1)$$

  - k: capital, A: wealth, ϵ: income shock after investment ($\mathbb{E}[\epsilon] = 1$)
  - θ: quality of business idea, λ: collateral constraint
  - τ: payment before the home office scheme

- ▶ Assumption: having a separate office does not increase the output (e.g., real-estate agencies)

  - The validity of this assumption may vary across industries

A model of the home office scheme

- Financially constrained if

$$\left(\frac{\alpha\theta}{r}\right)^{\frac{1}{1-\alpha}} + \tau = k^* + \tau > \lambda A$$

  - More people were constrained before the scheme

A model of the home office scheme

- ► Unconstrained payoff

$$\theta k^{*\alpha} - rk^* - \tau = y_u - \tau$$

- ► Constrained payoff

$$\theta(\lambda A - \tau)^\alpha - r(\lambda A - \tau) - \tau = y_c(\tau) - \tau$$

  - Removing τ affects *all* individuals, whereas increasing λ only affects financially constrained individuals
  - Implementing the home office scheme and reducing financial constraints is not equivalent
  - Financially constrained individuals have additional benefit from removing τ: they can increase the capital investment
  - Another prediction: other things being equal (e.g, the extent to which the separate office affects a firm's output), the average business earnings increases relatively more for industries with severe financial constraints (e.g., industries with a high starting capital (Hurst and Lusardi [2004]))

A model of the home office scheme

- ▶ Starting a business if

$$y_u \cdot I + y_c(\tau) \cdot (1 - I) - \tau > w$$

  - - Removing τ will attract both (1) marginal entrepreneurs, and (2) financially constrained entrepreneurs
  - - Evidence for (1): firm creation is more pronounced among low-income individuals, small-scale businesses, novice entrepreneurs
  - - Evidence for (2): firm creation is more pronounced among low-income individuals, better 2nd business

A model of the home office scheme

- Conditional on starting a business, stop operating if

$$\{y_u \cdot I + y_c(\tau) \cdot (1 - I)\}\epsilon - \tau \leq w$$

  - Consider an industry without financial friction. The average quality of business after the scheme decreases, but the exit rate may also decrease
  - Increasing survival rate does not necessarily mean an increase in the quality of business

Relevant frictions

What is the relevant friction? Is it financial friction, entry regulation, or both?

- ▶ Financial friction
    - A huge literature is built on λ
    - λ captures a friction in the financial market (e.g., limited commitment between a borrower and a lender)
    - A shock to collateral is often used to identify the impact of λ (e.g., Adelino et al. [2015], Kerr et al. [2015], Schmalz et al. [2017])

Relevant frictions

- ▶ Entry regulation

    - Previous studies used a cross-country variation: measurement and identification problem
    - Some exceptions: Bertrand and Kramarz [2002] (India), Aghion et al. [2008] (France), Mullainathan and Schnabl [2010] (Peru), Bruhn [2011], Kaplan et al. [2011] (Mexico), Branstetter et al. [2014] (Portugal)

Relevant frictions

- The amount of "money" saved by deregulation seems to be much larger for the home office scheme compared to the previous examples

- The home office scheme may demonstrate entry regulation can interact with financial friction

  - The negative impact of entry regulation can be more severe in the presence of financial friction

Other comments

- Regarding the facts about serial entrepreneurship, the control and the treatment group may be different not only in terms of the average entrepreneurial ability, but also in terms of the entry cost they face

  Fact Conditional on failure, higher probability of starting the second business is observed among those who started the first business after the reform

  - If the business owners who started a business before the reform failed before the reform, they faced a higher entry cost

  Fact Higher probability of starting the second business is observed among those who started the first business after the reform

  - Consider those who started the first business before the reform and considered to open the second business. Until the reform starts, they had faced a higher entry cost

  Fact Conditional on starting the second business, the number of employees is larger among those who started the first business after the reform

  - If the second business started before the reform, they faced a higher entry cost

Other comments

- Are the self-employed people included in the sample?
    - 25th percentile of the number of employees is 1. In US, the number of business without paid employees is larger than the number of business with paid-employees

Conclusion

- A well-written, very interesting paper

- Findings in this paper will help us understand how entry regulation affects business activity

Manuel Adelino, Antoinette Schoar, and Felipe Severino. House prices, collateral, and self-employment. *Journal of Financial Economics*, 117(2): 288–306, 2015.

Philippe Aghion, Robin Burgess, Stephen J Redding, and Fabrizio Zilibotti. The unequal effects of liberalization: Evidence from dismantling the license raj in india. *American Economic Review*, 98(4):1397–1412, 2008.

Marianne Bertrand and Francis Kramarz. Does entry regulation hinder job creation? evidence from the french retail industry. *the quarterly journal of economics*, 117(4):1369–1413, 2002.

Lee Branstetter, Francisco Lima, Lowell J Taylor, and Ana Venâncio. Do entry regulations deter entrepreneurship and job creation? evidence from recent reforms in portugal. *The Economic Journal*, 124(577):805–832, 2014.

Miriam Bruhn. License to sell: the effect of business registration reform on entrepreneurial activity in mexico. *The Review of Economics and Statistics*, 93(1):382–386, 2011.

David S. Evans and Boyan Jovanovic. An estimated model of entrepreneurial choice under liquidity constraints. *Journal of Political Economy*, 97:808–827, 1989.

Erik Hurst and Annamaria Lusardi. Liquidity constraints, household wealth, and entrepreneurship. *Journal of political Economy*, 112(2):319–347, 2004.

David S Kaplan, Eduardo Piedra, and Enrique Seira. Entry regulation and business start-ups: Evidence from mexico. *Journal of Public Economics*, 95 (11-12):1501–1515, 2011.

Sari Kerr, William R Kerr, and Ramana Nanda. House money and entrepreneurship. Technical report, National Bureau of Economic Research, 2015.

Sendhil Mullainathan and Philipp Schnabl. Does less market entry regulation generate more entrepreneurs? evidence from a regulatory reform in peru. In *International differences in entrepreneurship*, pages 159–177. University of Chicago Press, 2010.

Martin C Schmalz, David A Sraer, and David Thesmar. Housing collateral and entrepreneurship. *The Journal of Finance*, 72(1):99–132, 2017.