COVID19 enhanced global entrepreneurial ecosystem in overall

However, new business formation by unemployed individuals after the social-distancing order in the U.S. are worrisome since a large portion of them are necessity entrepreneurs

South Korean entrepreneurial ecosystem has been enhances after COVID19

Particularly, positive perception on entrepreneurial ecosystem has been significantly enhanced in South Korea

Private partnership in government funding has been play important role in the enhancement

Policy for failed entrepreneurs can be an effective tool for enhancing entrepreneurial ecosystem
## Changes of Entrepreneurship Ecosystem after COVID19

<table>
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<tr>
<th>Changes</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Growth of Venture Investment**     | • Size of venture investment  
• US $1,480B (the first half of ’20) => US $2,880 (the first half of ’21) (95%↑)                                               |
| **Number of Unicorn Increased**      | • Number of Unicorn company increased by 43% (over 800 Unicorns, ’21.8.)  
• Number of City with more than 1 Unicorn: 140(’19) => 155(’155) => 170(’21)                                                       |
| **Diversified Investment out of North America** | • The portion of investment in the U.S. decreased : 84% (’04) => 51% (’20)  
• Investment in Asia, Latin America, Africa increased                                           |
| **Rapid Growth of Deep Tech Companies** | • COVID19 accelerated digital transformation  
• Investment in Deep Tech increased                                                                                                       |
| **Strengthened Government Funding**  | • Relaxation of startup regulation  
• Increased allocation of national budget for startups                                                                                   |

* Sources: Global Startup Ecosystem Report 2021(Startup Genome ’21.9), KDB Institute for Future Strategy, Crunchbase, DB Insight, Dealroom
One widespread action to reduce the spread of the virus is a social-distancing restriction, a way to keep person to person distance. While it saves lives, it has contributed to unprecedented decline in economic activities (Alexander & Karger, 2020; Allcott et al., 2021).

Particularly, a small business activity, a critical component of economic growth, has been severely affected by the order. At its peak in April, 100,000 small businesses have permanently shut down and 65,000 businesses have temporarily halted operations (Sraiders & Lambert, 2020).

On the other hand, there has been reports that showed entrepreneurship rates actually increased since the order (Kauffman foundation, 2020; Romei, 2020).
Changes of Entrepreneurship after COVID19 in the U.S.

US Unemployment Rate

Trends in the entrepreneurship rate

Source: Bureau of Labor Statistics (2020b)

Source: Kauffman Entrepreneurship Indicators Microdata
Mixed Prediction

- The social-distancing order led to decrease of predicted value from entering entrepreneurship, in turn, new business formation rates
  - Due to downward shift of both supply and demand
  - On the other hand, unemployed individuals might perceive lower predicted value from the labor market
  - In turn, unemployed individuals will weigh more on becoming entrepreneurs than being employed

Data

- Entrepreneurship Indicators from Current Population Survey (CPS)
### Probit Model

<table>
<thead>
<tr>
<th></th>
<th>(1) Baseline marginal effects</th>
<th>(2) Employed marginal effects</th>
<th>(3) Unemployed marginal effects</th>
<th>(4) Employed marginal effects</th>
<th>(5) Unemployed marginal effects</th>
<th>(6) Unemployed marginal effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covid19 (Social Distancing Rist.)</td>
<td>-0.0711*</td>
<td>-0.0004*</td>
<td>-0.2246**</td>
<td>-0.0004**</td>
<td>0.1519*</td>
<td>0.0039*</td>
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<tr>
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<td>[0.048]</td>
<td>[0.000]</td>
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<td>[0.025]</td>
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<td>[0.104]</td>
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<td></td>
<td>[0.007]</td>
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<td>Yes</td>
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<td>Age</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Age squared</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<tr>
<td>Race</td>
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<td>Education</td>
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<td>Marriage</td>
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<td>Unemployed</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Not in Labor Force</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Constant</td>
<td>-4.3745**</td>
<td>-4.9133**</td>
<td>-4.3517**</td>
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<td>[0.000]</td>
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<tr>
<td>Observations</td>
<td>143,128</td>
<td>143,128</td>
<td>98,666</td>
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<td>16,184</td>
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<tr>
<td>R-squared</td>
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<td>0.0787</td>
<td>0.0787</td>
<td>0.0749</td>
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</tr>
</tbody>
</table>
Results

- The rate of new firm formation were lower after the social-distancing order by 0.05 percent point.
- The rate of new firm formation by unemployed individuals increased by 0.39 percent point after the social-distancing order.
- The rate of new firm formation in manufacturing industry were particularly hit by 0.04 percent point decrease after the social-distancing order.
Results

The increased rate of new business formation by unemployed individuals after the social-distancing order are particularly worrisome

New entrepreneurship by unemployed individuals is classified as "necessity entrepreneurship" (Acs, 2006)

- Limited growth potential and replicated BM (Dencker et al., 2009)
- Debt financing rather than venture capital (Fazio et al., 2021)
- These individuals lack the resources and experience to weather more challenges (i.e. prolonged pandemic)
Changes of Korean Entrepreneurship Ecosystem after COVID19

Size of New Investment by VC

* Dashboard for the Korean Entrepreneurship Ecosystem (STEPI, '21)
Changes of Korean Entrepreneurship Ecosystem after COVID19

- Amount of Government Funding on Startups
- Number of Employees in new Born Startups

*Dashboard for the Korean Entrepreneurship Ecosystem (STEPI, ’21)
Changes of Korean Entrepreneurship Ecosystem after COVID19

- Perception on Entrepreneurial Ecosystem (EE)
  - Ratings on Ent. Ecosystem (EE)
  - Positive Perception on EE after 1 year

- Tech-based Startups
  - Numb. of Tech-based Startups
  - % of Tech-based Startups

* Dashboard for the Korean Entrepreneurship Ecosystem (STEPI, '21)
### Changes of Korean Entrepreneurship Ecosystem after COVID19

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| **Growth of Venture Investment**     | • Size of venture investment  
• US $3,425M ('18) => US $5,259M ('21) (53% ↑)                                                                                     |
| **Number of Unicorn Increased**      | • Number of Unicorn company increased : 6('18) => 10('19) => 13('20) => 15('21)                                                         |
| **Similar level in Deep Tech Companies** | • Slight increase in the number of tech-based startups after COVID19                                                             |
| **Strengthened Government Funding**  | • Relaxation of startup regulation  
• Increased allocation of national budget for startups                                                                                 |
| **Increased Positive Perception on Entrepreneurship Ecosystem** | • Rapid increase of positive perception on entrepreneurship ecosystem after COVID19  
• Positive culture on entrepreneurship continues                                                                                     |

* Sources: Global Startup Ecosystem Report 2021(Startup Genome ‘21.9), KDB Institute for Future Strategy, Crunchbase, DB Insight, Dealroom
Background

Obama clean energy loans leave taxpayers in $2.2 billion hole

Solyndra solar company fails after getting federal loan guarantees

By Joe Stephens and Carol D. Leonnig
August 31, 2011

A company that served as a showcase for the Obama administration’s effort to create jobs in clean technology shut down Wednesday, leaving 1,100 people out of work and taxpayers obligated for $535 million in federal loans.

Solyndra, a California solar panel maker, had long been an administration favorite. Over the past two years, President Obama and Energy Secretary Steven Chu each had made congratulatory visits to the company’s Silicon Valley headquarters.
**Questions**

- Does **private partnership** for the government funding affect startups’ innovation and subsequent financing?

**Tech Incubator Program for Startups (TIPS)**

- Traditional system for government funding
- The Structure of Tech Incubator Program for Startups (TIPS)
Questions

- Does **private partnership** for the government funding affect startups’ innovation and subsequent financing?

**Tech Incubator Program for Startups (TIPS)**

1) **TIPS partners (Accelerator) recommend** tech-startups invested by themselves (No selection by the government)

2) **Competition among the recommended startups.** The recommended startups are examined by an independent third-party (technology and business experts)

3) **Government supports about 500,000 USD** to the accepted startups

The Structure of Tech Incubator Program for Startups (TIPS)
Questions

Does private partnership for the government funding affect startups’ innovation and subsequent financing?

Tech Incubator Program for Startups (TIPS)

Data

- The program applications and evaluation data (2013-2017)
- Startups’ patent and investment information, and other demographic variables

Research Design

- Comparing the outcomes of the accepted to rejected firms using regression discontinuity
- Tech Incubator Program for Startups (TIPS)
  - Plots for the evaluation score
EFFECT OF PRIVATE PARTNERSHIP IN ENTREPRENEURSHIP POLICY

- **Tech Incubator Program for Startups (TIPS)**
  - Subsequent investment and number of patents have been significantly increased for government funded startups
EFFECT OF PRIVATE PARTNERSHIP IN ENTREPRENEURSHIP POLICY

- Tech Incubator Program for Startups (TIPS)
  - Subsequent investment and number of patents have been significantly increased for government funded startups

1 : Define a market wider than a narrow view based on a business model
7 : Define specific business models and opportunities

1 : Artificial intelligence is not currently being considered
7 : Seeking a business strategy to introduce artificial intelligence into a business model or product
EFFECT OF PRIVATE PARTNERSHIP IN ENTREPRENEURSHIP POLICY

Questions
- Does private partnership for the government funding affect startups’ innovation and subsequent financing?

Conclusion
- Private partnership (the recipient selection system) can effectively increase startups’ innovation performance and their survival
- Private partnership in entrepreneurship policy can be an effective tools for the enhancement of entrepreneurship ecosystem
POLICY FOR THE FAILED ENTREPRENEURS

- Failure in Entrepreneurship
POLICY FOR THE FAILED ENTREPRENEURS

Questions
- Does entrepreneurial failure affect a new startup’s performance?

Limited Understanding
- Prior research offers little insight into how does changes in an entrepreneur's behavior after an entrepreneurship failure affect subsequent start-up performance (Ucbasaran et al., 2013)
- Serial entrepreneur’s behavior is one of factors that explain performance heterogeneity in start-ups (Eggers & Song, 2015)
  - Industry changes between prior and current start-ups would decrease the performance of subsequent start-ups.
- Does entrepreneur’s behavior change after prior start-up failure affect the subsequent startup’s performance?
  - Technology and Business Model changes between previous and current start-up.
Results

- Failure and business model (BM) change in the subsequent new startup shows 8.3 percentage points more likely to receive private investment than failure and no BM change.

- Failure and technology change in the subsequent startup shows 10 percentage points more likely to receive private investment than failure and no technology change.
Conclusion

- Changes in internal business aspects (business model or technology) after a previous startup failure are related to subsequent startup performance
- Behavior change of failed entrepreneur is important antecedents to explain heterogeneity of subsequent startup performance
- Failed entrepreneurs can be an important segment for entrepreneurship policy to enhance entrepreneurial ecosystem
EFFECT OF PRIVATE PARTNERSHIP IN ENTREPRENEURSHIP POLICY

- **Data**
  - A national survey of 23,000 entrepreneurs who applied for support from a Korean government start-up program from 2014 to 2018
  - 1,313 business founders give us completed and usable surveys
    - Demographic information of entrepreneurs (age, sex, education, major), Information on prior startups, reasons for failure, differences between failed and current startups
    - Investment amount, co-founders, etc.
  - Company information from Korea Enterprise Data (KED)
    - Financial Information: firm founding year, firm Assets, firm sales, and the number of employees

- **Methods of Analysis**
  - Probit Model
  - Coarsened Exact Matching
COVID19 enhanced global entrepreneurial ecosystem in overall

However, new business formation by unemployed individuals after the social-distancing order in the U.S. are worrisome since a large portion of them are necessity entrepreneurs

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Thank you