

Driving Korean Innovation for the the Next Production Revolution

Dr. Robert D. Atkinson
President, ITIF

May 24, 2018

 @RobAtkinsonITIF

About ITIF

- The top ranked science and tech policy think tank in the world
- Formulates and promotes policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress
- Focuses on issues at the intersection of technology innovation and public policy:
 - Innovation processes, policy, and metrics
 - Science policy related to economic growth
 - E-commerce, e-government, e-voting, e-health
 - IT and economic productivity
 - Innovation and trade policy

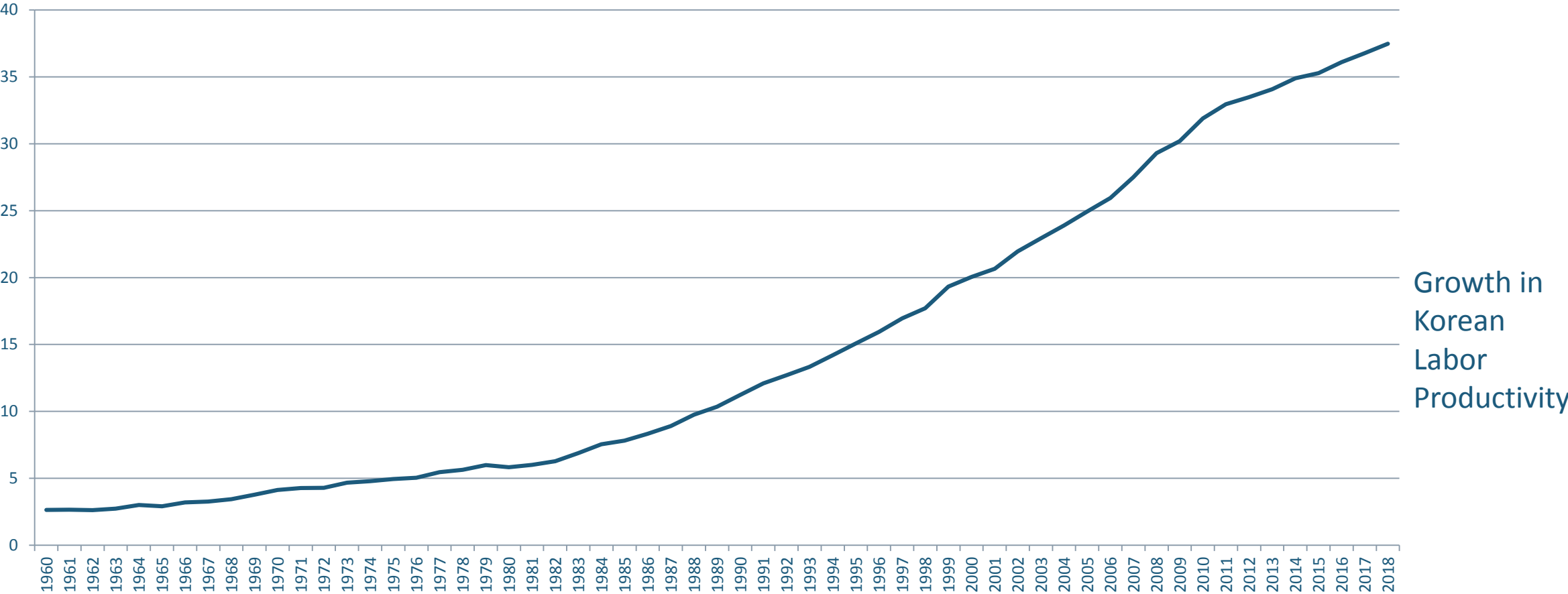
ITIF Publication Highlights



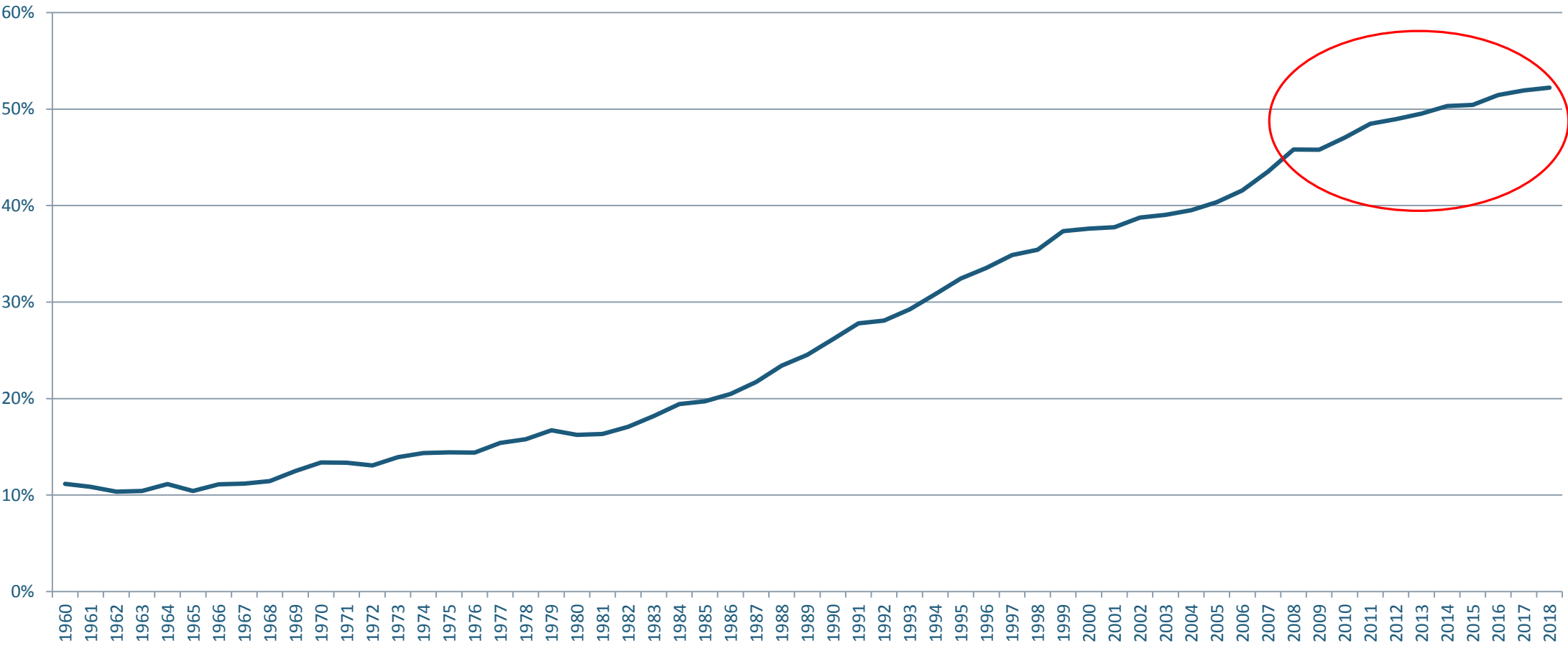
Today's Presentation: Korea's Challenges and Opportunities

- 1 Slow Productivity Growth**
- 2 Being a Fast Follower**
- 3 Too Many Small Firms**

Boosting Productivity Growth Is Still Important



Korean Productivity Gap With U.S. Is Closing More Slowly



Boosting Productivity Requires All Sectors to Improve

- Services productivity levels fell from 76% of manufacturing in 1997 to 60% in 2005.
- Service sector productivity is just 45% of manufacturing levels, compared with an OECD average of 86%.



And All Sectors to Use ICT

- In 2011, ICT investments in Korea were 10% of business investments compared to over 30% in U.S.
- From 2005 to 2010, IT capital contributed to just 8% of Korean growth compared to 30% in U.S.



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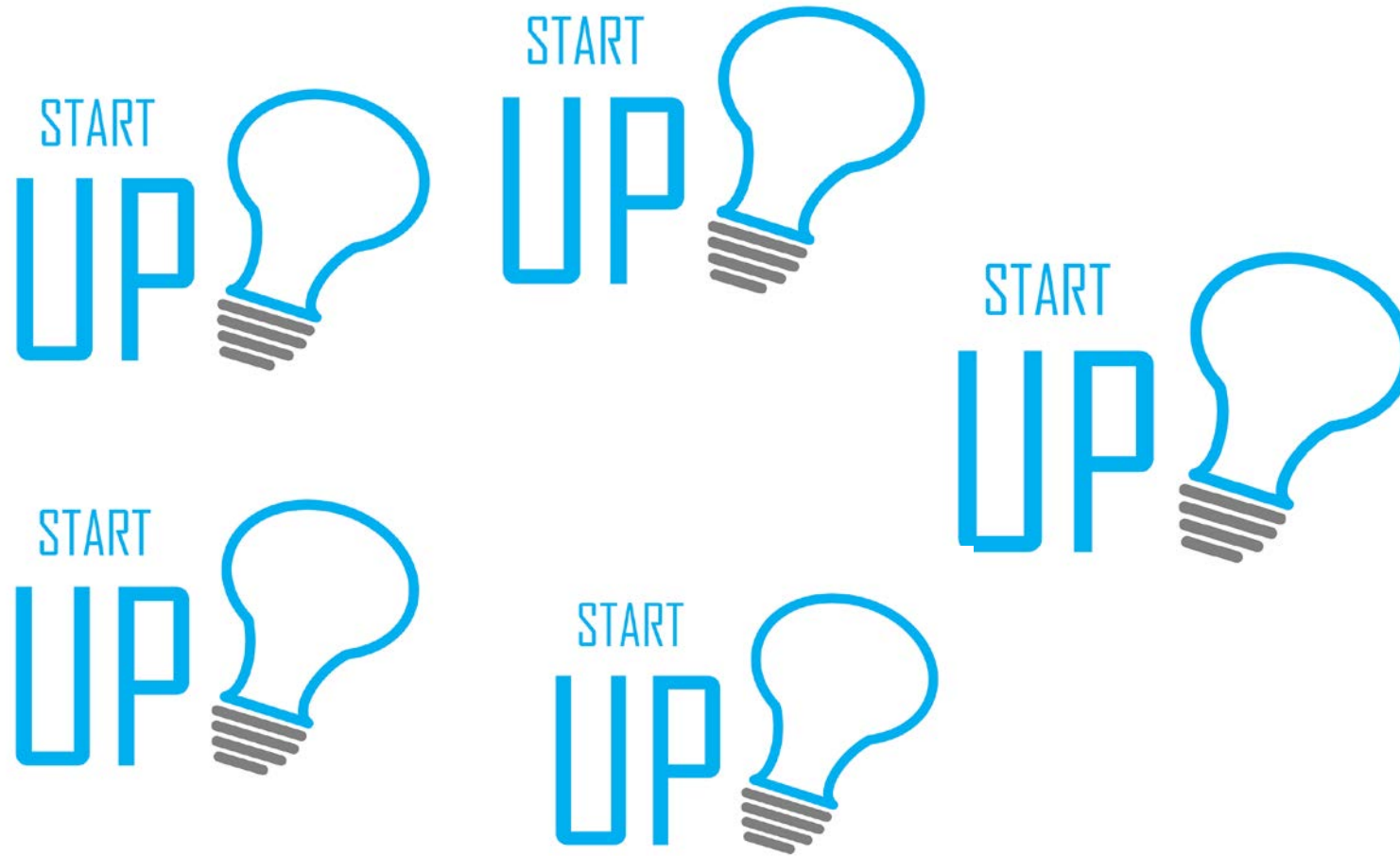
Need to Lead Innovation

- Being a fast follower is no longer enough.
- Fast follower status has helped Korea.
- But Korea risks being stuck in the middle between:
 - China and India as the new fast followers
 - The U.S. (and some Northern European nations) as innovation leaders



Annual % change in processor speed

That Means Building a System for High-Growth Start-ups



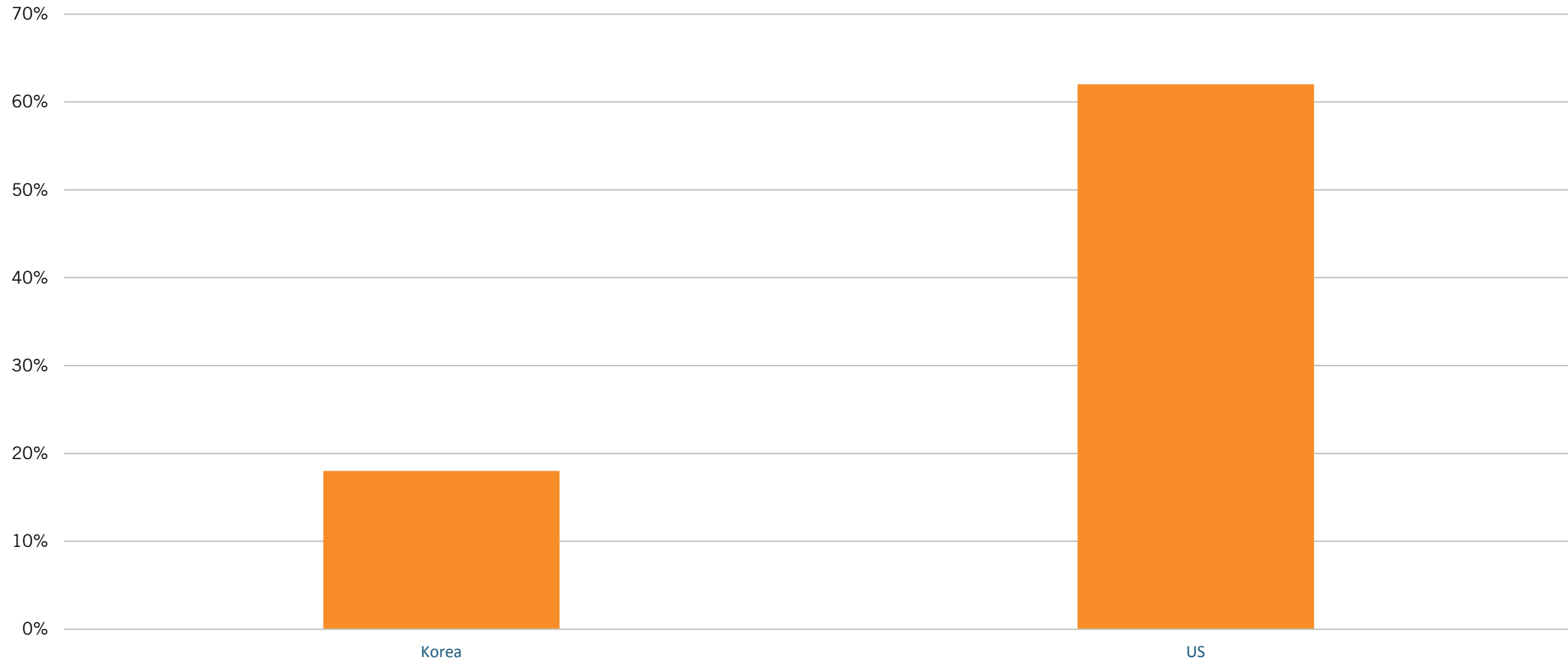
Where is Seoul?

	Ranking		Performance	Funding	Market Reach	Talent	Startup Exp.	Growth Index
Silicon Valley	1	◀	1	1	4	1	1	2.1
New York City	2	▲ 3	2	2	1	9	4	1.8
Los Angeles	3	◀	4	4	2	10	5	1.8
Boston	4	▲ 2	3	3	7	12	7	2.7
Tel Aviv	5	▼ 3	6	5	13	3	6	2.9
London	6	▲ 1	5	10	3	7	13	3.3
Chicago	7	▲ 3	8	12	5	11	14	2.8
Seattle	8	▼ 4	12	11	12	4	3	2.1
Berlin	9	▲ 6	7	8	19	8	8	10
Singapore	10	▲ 7	11	9	9	20	9	1.9
Paris	11	◀	13	13	6	16	15	1.3
Sao Paulo	12	▲ 1	9	7	11	19	19	3.5
Moscow	13	▲ 1	17	15	8	2	20	1.0
Austin	14	NEW	16	14	18	5	2	1.9
Bangalore	15	▲ 4	10	6	20	17	12	4.9
Sydney	16	▼ 4	20	16	17	6	10	1.1
Toronto	17	▼ 9	14	18	14	15	18	1.3
Vancouver	18	▼ 9	18	19	15	14	11	1.2
Amsterdam	19	NEW	15	20	10	18	16	3.0
Montreal	20	NEW	19	17	16	13	17	1.5

Source: 2015 Global Startup Monitor Ecosystem Ranking

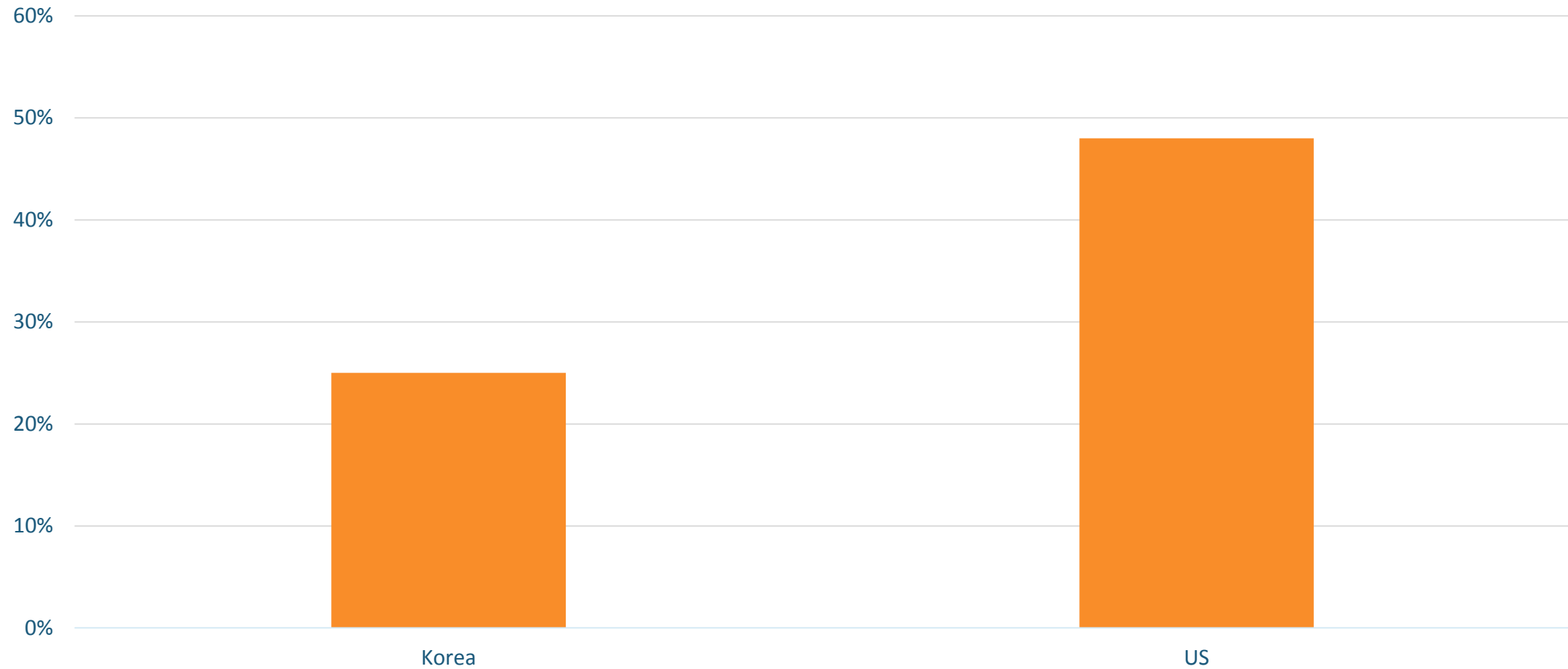
Korean Attitudes Toward Entrepreneurship Lag the U.S.:

% of Those Who Started a Business Out of Opportunity vs. Necessity



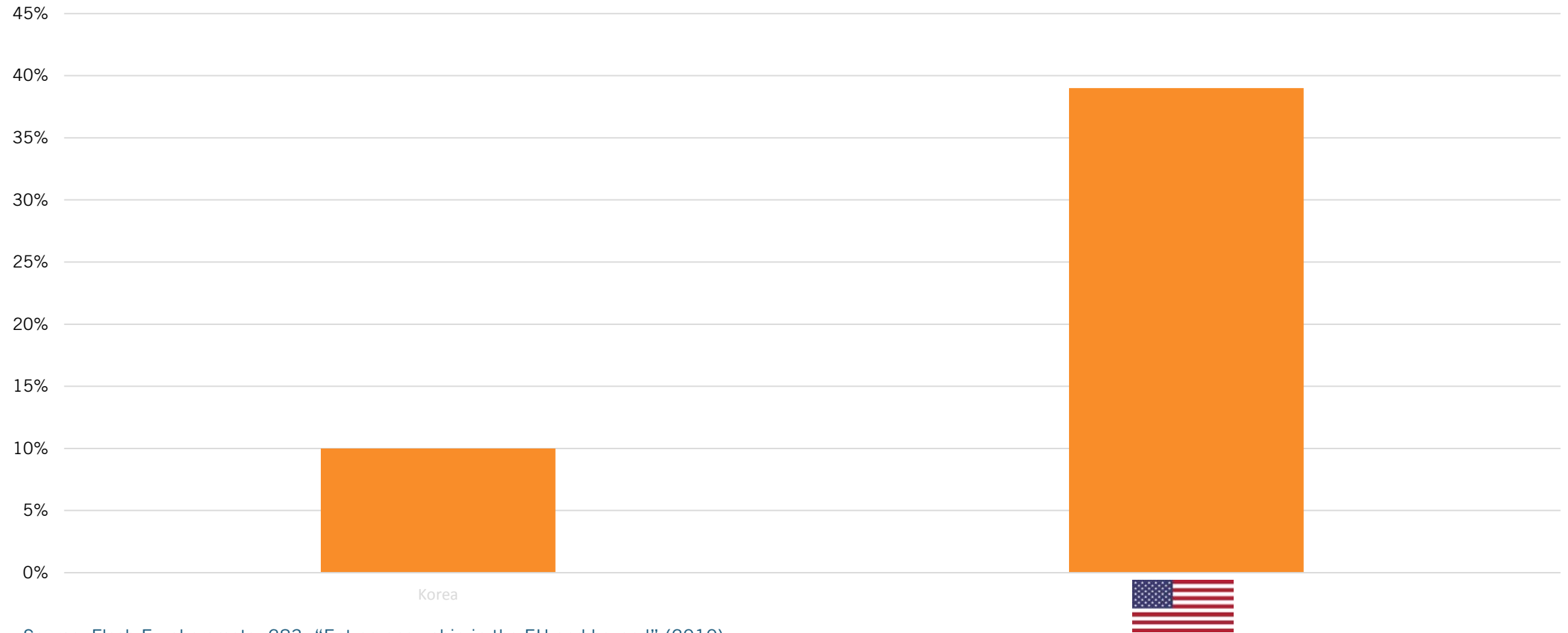
Source: Flash Eurobarometer 283: "Entrepreneurship in the EU and beyond" (2010)

“People Who Have Started Their Own Business and Have Failed Should Be Given a Second Chance.”



Source: Flash Eurobarometer 283: “Entrepreneurship in the EU and beyond” (2010)

“In General, I Am Willing to Take Risks.”



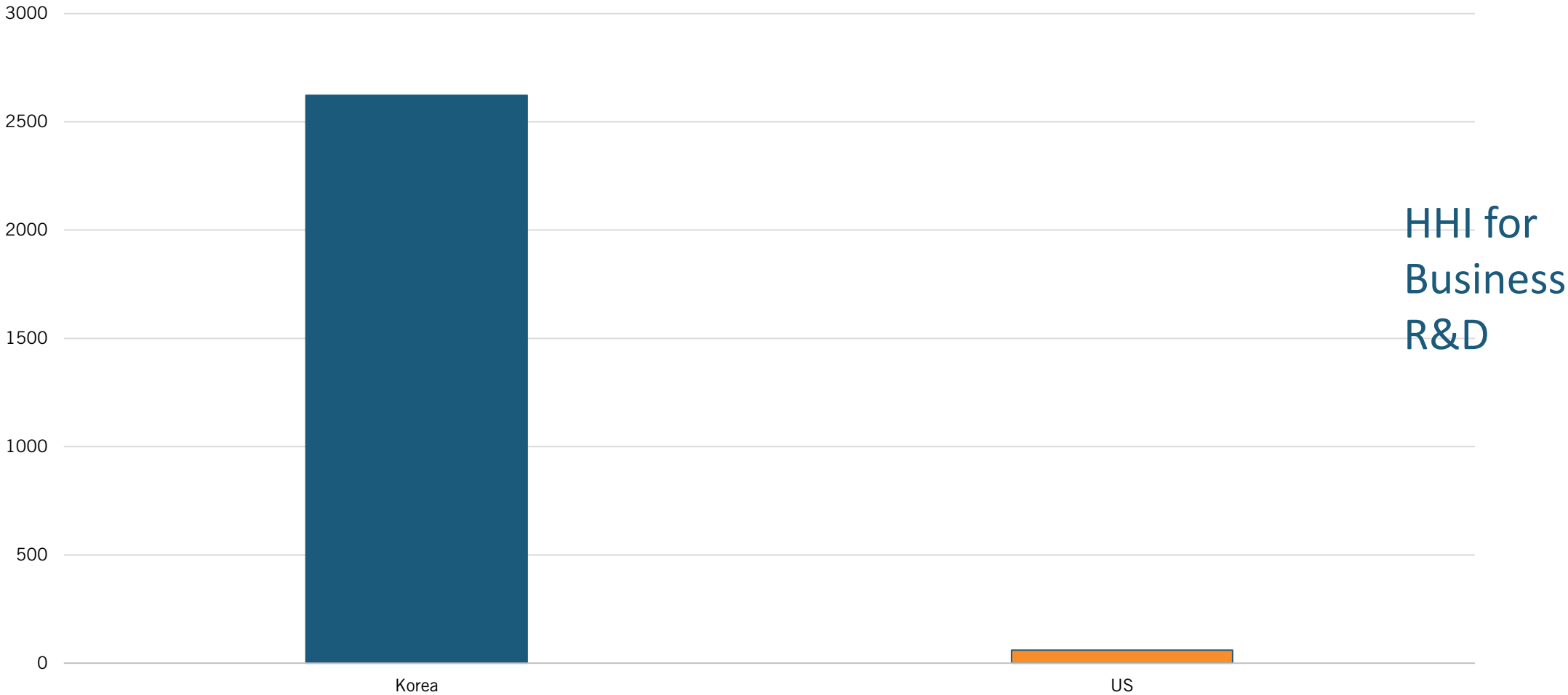
Source: Flash Eurobarometer 283: “Entrepreneurship in the EU and beyond” (2010)

Building a System for High-Growth Start-ups

- Support a culture of risk-taking that celebrates entrepreneurs.
- Teach creativity and entrepreneurship.
- Develop a support system for “gazelle” entrepreneurs. (e.g., UC Connect)



Diversify R&D By Growing Mid-Size R&D Companies



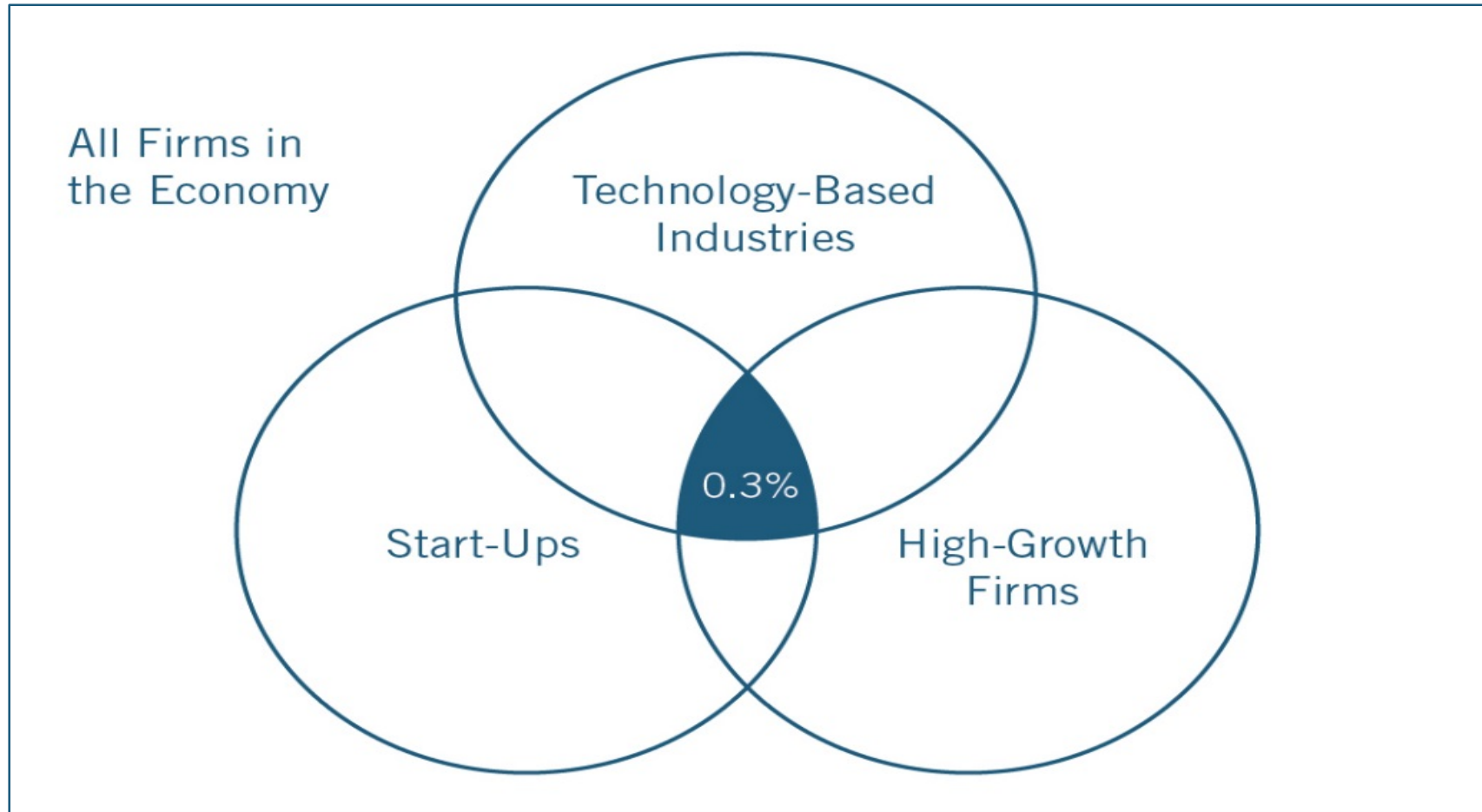
Reform University-Related Policies to Spur Commercialization

- Allocate R&D funding to universities, in part, based on performance and ability to attract industry investment.
- Increase *permeability*: Take faculty members' commercial experiences into account in tenure decisions; allow faculty to suspend tenure to pursue commercialization opportunities.
- Give students rights to the intellectual property they invent.
- Support the development of university incubators/accelerators.
- Develop university entrepreneurship rankings.

Spur Collaboration

- Just 6.8% of Korean firms cooperate with government or universities on R&D; compared to 16% in Germany and 24% in UK. (OECD)
- Just 0.5% engage in international R&D collaboration (compared to 26% in Finland and 36% in UK).
- Establish more joint industry-university research centers; establish collaborative R&D tax credit.

Shift Support from SMEs to High-Growth Startups



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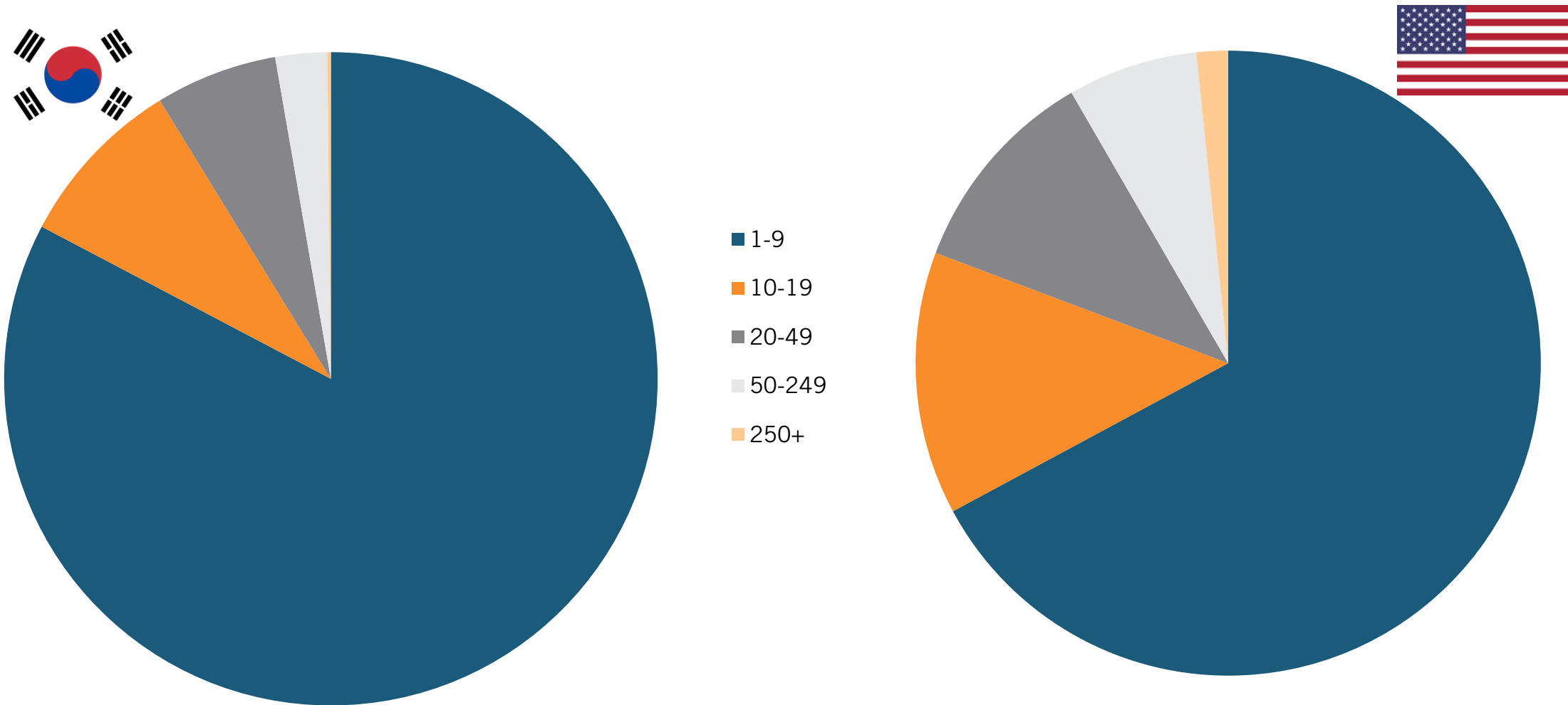
Too Many Small Firms

Korea Has Too Many Small, Unproductive Firms

- 99.9% of Korean firms are small.
- The share of output from large firms fell from 72% in the early 1970s to 50% in 2006.
- The share of employment in SMEs increased from 80% in 2000 to 87% by 2010 (compared to 44% in the U.S.).
- In services, 91% of jobs in SMEs, compared to 44% in the U.S.



Most Korean Manufacturing Firms Are Very Small



This Slows Growth

- Small Korean firms (5 to 49 workers) are 22% as productive as firms with over 200 workers.

— (Rana Hasan And Karl Robert L. Jandoc, "The Distribution of Firm Size in India: What Can Survey Data Tell Us? ADB Economics Working Paper Series, No. 213, August 2010, <https://www.adb.org/sites/default/files/publication/28418/economics-wp213.pdf>)

- Workers at small firms make 50% of workers at large firms.

And Limits Innovation

- 49% of Korean SME's are innovative, compared to 73% of large firms. (OECD Innovation Indicators, 2017)
- Yet over 50% of Korean SMEs receive support for innovation, the highest of any OECD nation.

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- Yet over 50% of Korean SMEs receive support for innovation, the highest of any OECD nation.
- Time for “size neutrality” in all policies.

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Thank You

Robert D. Atkinson

ratkinson@itif.org | @RobAtkinsonITIF