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# The Path for Korea's Innovation-Led Growth in the Age of AI and Robotics

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# The theory of Creative Destruction

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Innovations are motivated by the prospect of monopoly profits

Obsolescence: Innovations create losses as well as gains

The conflict between winners and losers lies at the heart of economic growth

The fundamental dilemma of creative destruction: disruptive upstarts become powerful incumbents

# Key challenges facing Korea

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1. Artificial intelligence
2. Rising protectionism
3. Demographic change
4. The middle-income trap

# Artificial Intelligence (1)

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General purpose technology

History of failed predictions

Will AI enhance or replace labor – or create superstars?

New professions will arise, but maybe too late

Manufacturing employment already falling everywhere

Will affect the technology for innovating

# Artificial Intelligence – Policy

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## Education and Training

- Entry level jobs at risk
- Need tripartite cooperation and diversification

## Flexicurity

- Everyone wins in the long run, but present generation deserves help

## National Investment Strategy

- Need to find Korea's niche in global AI, with tripartite cooperation

## Energy demands

- Need to keep up the progress to keep up with AI

## Move beyond manufacturing

# Rising Protectionism

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## US tariffs come on top of Covid

- Will need to deal with uncertainty even after Trump

## Trade is crucial for creative destruction

- The scale effect
- Learning and catchup to global technology frontier
- Strengthens competition

## Optimal risk management

- Homegrown supply chains
- Diversified trading alliances
- Korea needs more consumption for stability

# Demographic change

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A problem faced by most of humanity in the 21<sup>st</sup> Century

Problem is mostly fiscal, not growth

- Ha and Howitt, *J Money, Credit and Banking*, June 2007
- Jones, Reedy and Weinberg, *NBER working paper*, 2014

Immigration could kill two birds with one stone

- Akcigit, Grigsby and Nicholas, *Amer Econ Rev* 2017

Teaching creativity is also important

- One of many problems facing education in the AI age

# The middle-income trap

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Gerschenkron's "advantage of backwardness"

Frontier innovation requires:

- Small, nimble companies, not big
- Tighter anti-trust policy
- Tighter IP policy
- Venture capital, not big banks
- Creativity vs discipline

Same as the fundamental dilemma of creative destruction?