

# Research and Innovation, Sweden - Japan

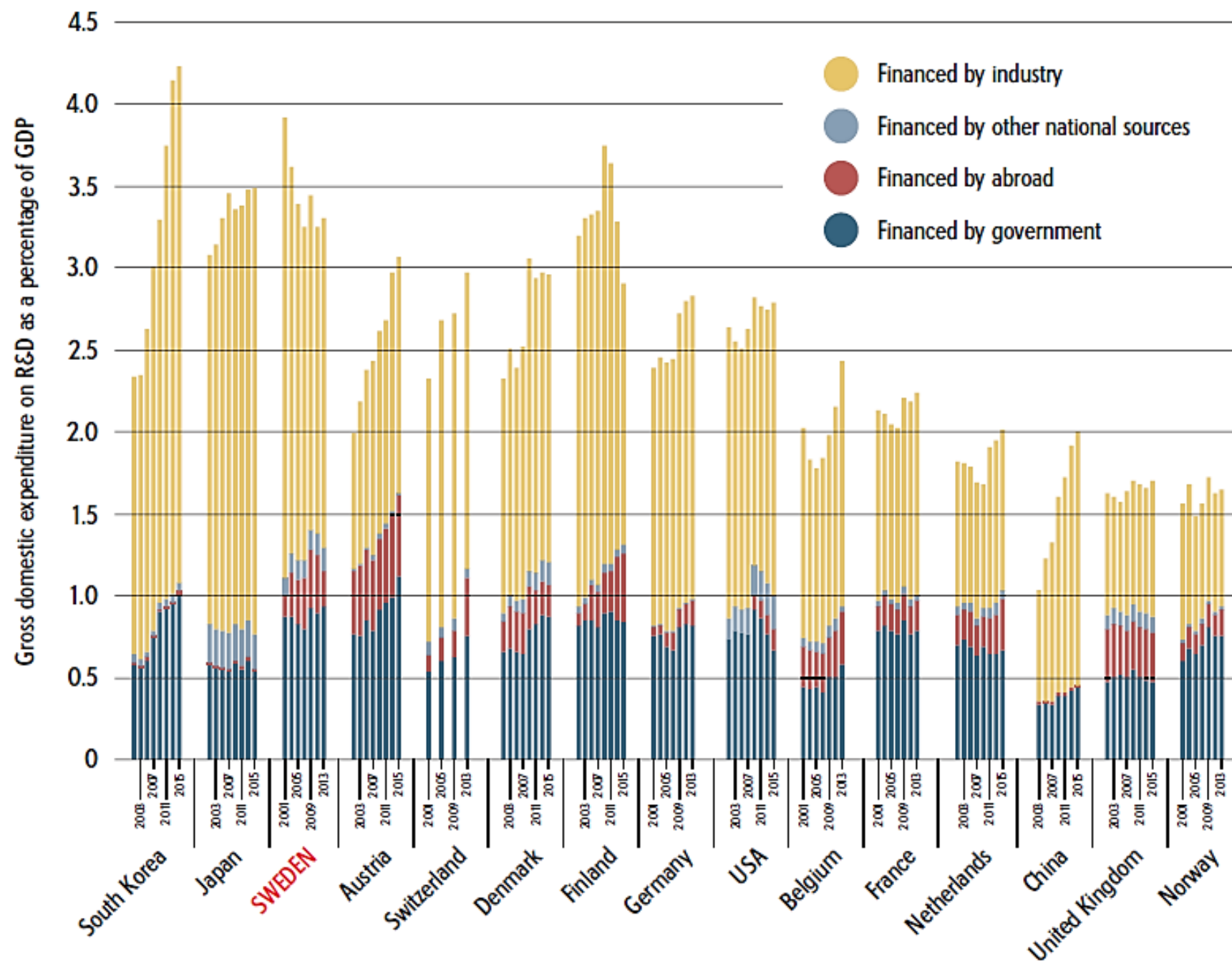
## some reflections

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Office of Science and Innovation  
Embassy of Sweden in Tokyo

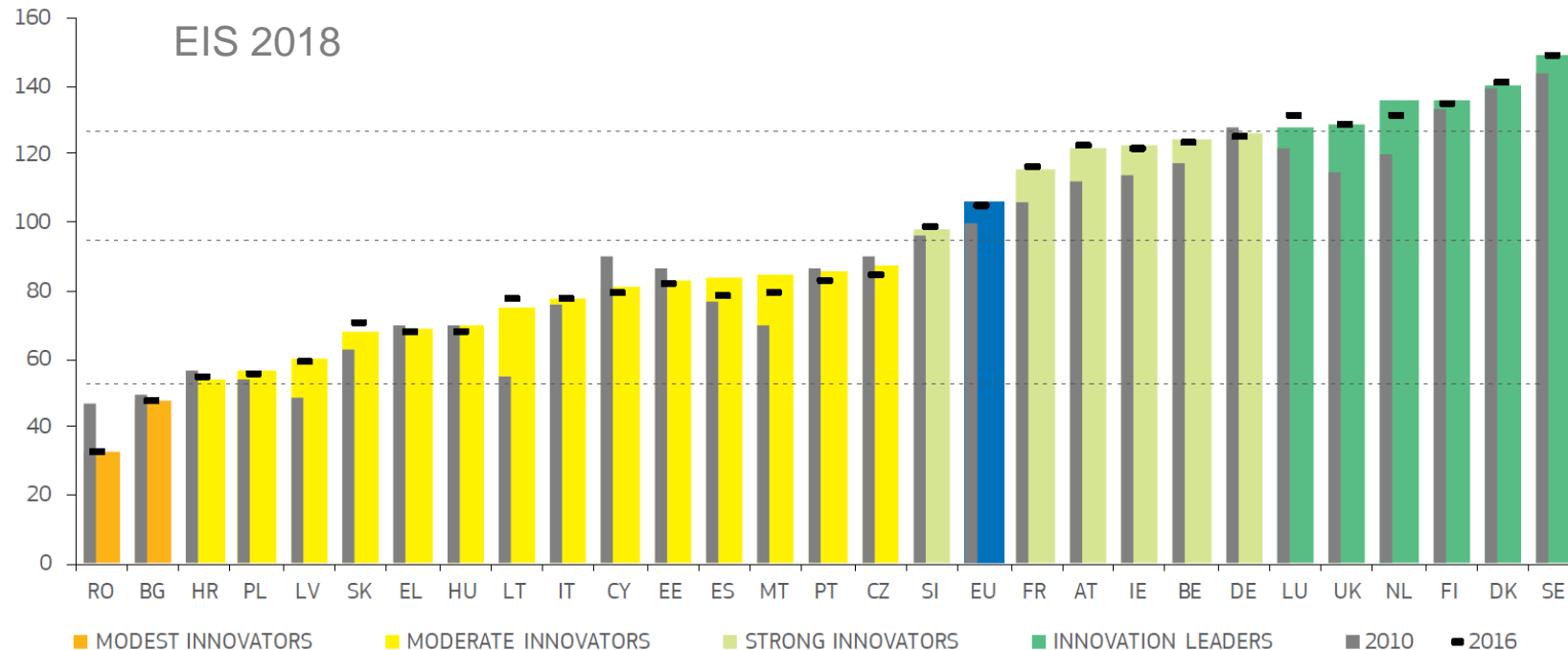
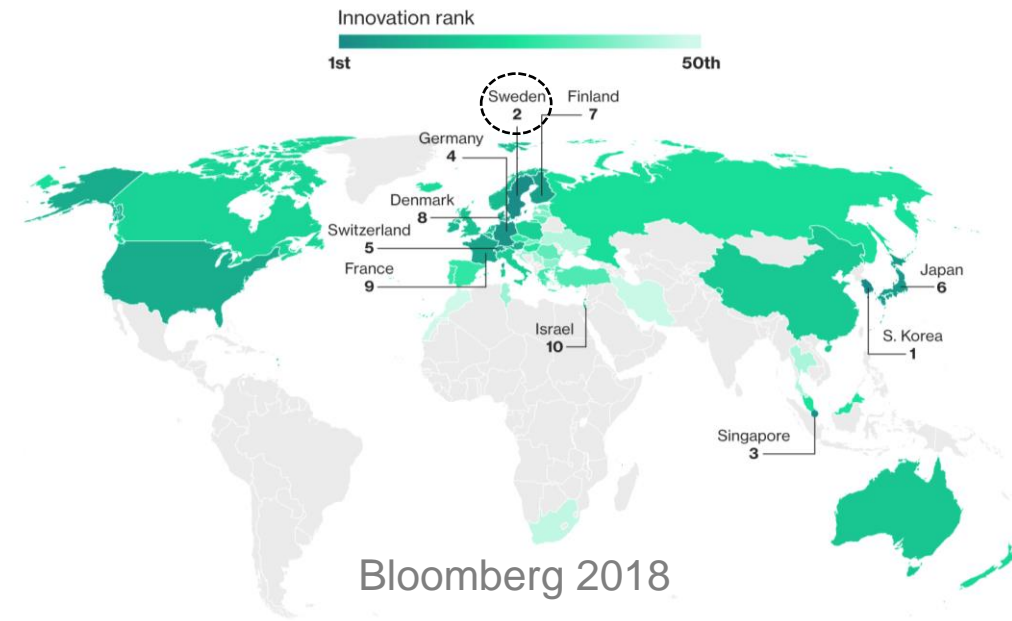


# Investment in R&D



# Innovation performance

- European Innovation Scoreboard SE #1; JP strong
- Global Innovation Index SE #2; JP #14
- Bloomberg Innovation Ranking SE #2; JP #6



## Global Innovation Index 2017 rankings

Country/Economy	Score (0–100)	Rank
Switzerland	67.69	1
Sweden	63.82	2
Netherlands	63.36	3
United States of America	61.40	4
United Kingdom	60.89	5
Denmark	58.70	6
Singapore	58.69	7
Finland	58.49	8
Germany	58.39	9
Ireland	58.13	10
Korea, Rep.	57.70	11
Luxembourg	56.40	12
Iceland	55.76	13
Japan	54.72	14
France	54.18	15

# Sweden: Competitive in many aspects

## 4 OPEN ECONOMY

- €199B exports with positive trade balance
- Committed EU & WTO member
- 3,6% GDP growth avg. past 3 years
- No discrimination of foreign ownership

## 5 SUSTAINABILITY

- 97% of electricity CO<sub>2</sub> free
- 69% GDP Growth and 25% CO<sub>2</sub> cut since 1990
- Top 8 sustainable economies globally
- Strong sector symbiosis

## 6 BUSINESS INFRASTRUCTURE

- Top 3 in logistics infrastructure globally
- 99.98% power system reliability
- AAA credit rating by all major institutes
- Government debt below EU average

## 1 COMPETENCE

- High availability of skilled labour
- 45% of workforce with higher education
- Very high English proficiency: #3 globally
- Training models to meet industry needs

## 2 PRODUCTIVITY & COST COMPETITIVENESS

- Top 3 lowest electricity price in Europe
- Europe's #2 largest installation of robots
- #6 in OECD competitiveness
- #4 in Europe in manufacturing productivity

## 3 INNOVATION

- #1 European Innovation Scoreboard
- #2 Global Innovation Index
- Invests 3,3% of GDP in R&D
- Hotspot for new ideas with open ecosystem



# Small population, big brands, fast startups



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# Nobel experiences

## Japan: 26 Nobel Laureates

*Predominantly: Physics (9), Chemistry (7),  
**Physiology or Medicine** (4)*



Discoveries of  
autophagy mechanisms



Therapy against  
roundworm infection



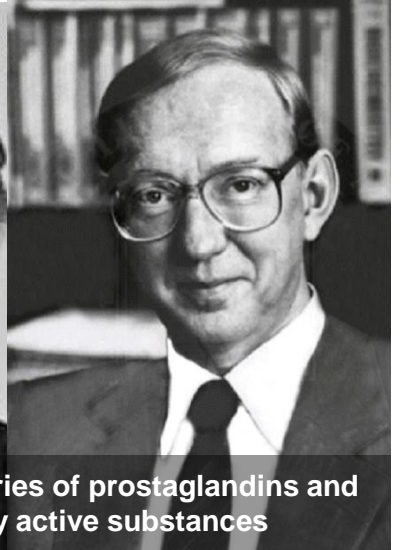
iPS stem cells and  
pluripotency



Dopamine effects on  
Parkinson's disease



(Shared prize) – Discoveries of prostaglandins and  
related biologically active substances



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# Top-ranked universities



## Shanghai Ranking: Academic Ranking of World Universities (2017)

### Sweden top 100

- Karolinska Institute: 44
- Uppsala University: 63
- Stockholm University: 74

**11 Universities: top 500**

### Japan top 100

- University of Tokyo: 24
- Kyoto University: 35
- Nagoya University: 84

**17 Universities: top 500**



## Times Higher Education: World University Rankings (2017)

### Sweden top 100

- Karolinska Institute: 38
- Uppsala University: 86
- Lund University: 93

**11 Universities: top 500**

### Japan top 100

- University of Tokyo: 46
- Kyoto University: 74

**10 Universities: top 500**



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# Strategic innovation areas

## SWEDEN

### Life sciences:

Biotech, pharmaceuticals, medical tech, nanomedicine, digital healthcare

### Energy

Batteries, renewable power, smart grid, renewable transport fuel

### Circular, bio-based

Biofuel, new materials, wooden buildings, recycling

### ICT & materials

Connected industry, smart factories, digital security, materials & recycling, 3D printing, microelectronics, additive manufacturing

### Travel & transport

Automated vehicles, mobilities as a service (MaaS), EVs, logistics, mapping travel behavior

## JAPAN

### Energy

Clean coal, combustion tech, power electronics, energy carriers, renewables, batteries, ocean exploration

### Electronics & ICT

IoT, memory, computing, optoelectronics, printed electronics, automated driving, blockchain

### Manufacturing

3D printing, lasers, additive manufacturing

### Robotics

Industry robots, service robots, disaster response, artificial intelligence (AI)

### Materials & nanotech

Smart cells, inedible biomass, structural materials (aviation)





# Testbed Sweden Initiative

## Co-creation: Sweden as a test site



**”Sweden ranks high in international comparisons of competitiveness and innovation. Join us in developing the technologies of the future.”**

**Mikael Damberg**

Minister for Enterprise and Innovation



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# International innovation partnerships



Government Offices of Sweden

# Research and Innovation, Sweden - Japan

## - some reflections

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