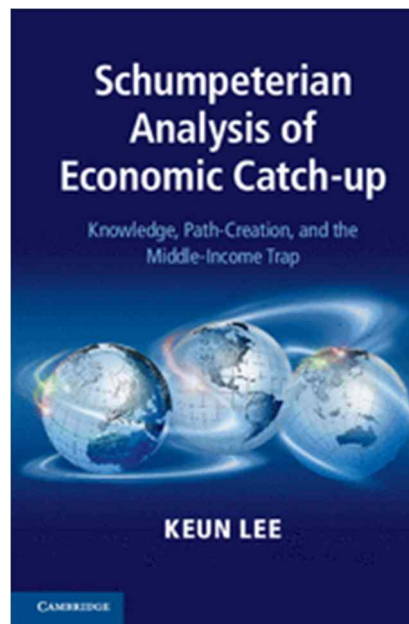
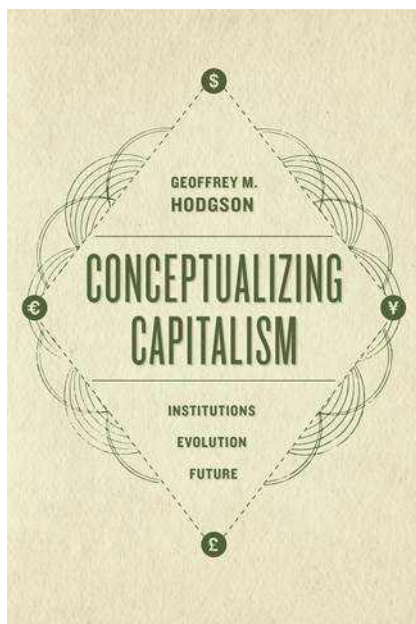


Lecture by the co-winners of 2014 Schumpeter Prize on  
**"Institutions, Innovation and Capitalism"**

October 16, 2015  
Seoul National University  
(#312, Bldg. 16)



Co-organized by  
Institute of Economic Research at SNU  
Korea Institution and Economics Association



## **-Time Plan-**

**2:30 -2:40 PM Introduction**

**Chair: Professor Lee, Seong Seop (승실대 이성섭교수: representing Korea Institution and Economics Association)**

**2:40 -3:20 PM Presentation by professor Hodgson**

**3:20 -4:00 PM Presentation by professor Lee**

**4:00 -4:30 PM Discussion and Q&A**

**Lead discussion by:**

**Professor Keehyun Hong, Department of Economics, Seoul National University**

**Professor Jina Kang, Technology Management, Economics and Policy Program, SNU**



## - Profile -

### Professor Geoffrey Hodgson



- Professor of Business Studies in the University of Hertfordshire
- broad research from evolutionary economics and history of economic thought to Marxism and theoretical biology
- Co-founded the World Interdisciplinary Network for Institutional Research (WINIR) in 2013
- Co-founded the Other Canon, a center and network for heterodox economics research in 2000
- The trilogy of more recent books: *Economics and Utopia* (1999), *How Economics Forgot History* (2001) and *The Evolution of Institutional Economics* (2004)

### Professor Keun Lee



- Professor of Economics, Seoul National University
- Director, Institute of Economic Research, SNU
- Director, Center for Economic Catch-up, Inc
- President-Elect, International Schumpeter Society
- An Editor, Research Policy
- Former President: Asia-Pacific Innovation Network
- Member, Committee for Development Policy, UN
- Member of Scientific Board, Globelics ([www. Globelics.org](http://www.Globelics.org))
- Associate Editor-in-Chief, Asian Journal of Technology Innovation



**- Content -**

**Section 1 What is Capitalism?**

**By Professor Geoffrey Hodgson (Univ. of Hertfordshire, UK)**

**Section 2 Innovation and Catch-up in Global Capitalism**

**By Professor Keun Lee (Seoul Nat'l Univ. Economics)**





# **What is Capitalism?**

**By Professor Geoffrey Hodgson (Univ. of Hertfordshire, UK)**



# What is Capitalism?

Geoff Hodgson

[www.geoffrey-hodgson.info](http://www.geoffrey-hodgson.info)

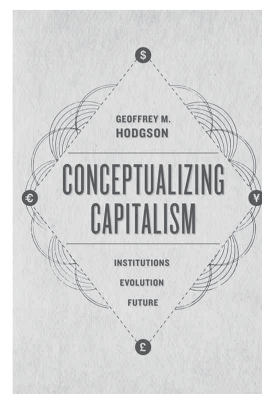
[g.m.hodgson@herts.ac.uk](mailto:g.m.hodgson@herts.ac.uk)

## 1. Introduction

## 2. What is a definition?

## 3. Defining capitalism

## 4. Conclusions & questions



Based on material from  
*Conceptualizing  
Capitalism* (2015)

1 / 22

## What is Capitalism?

### 1. Introduction

#### **Economics today:**

Mathematics lauded because it offers “precision”.

But **conceptual precision** is neglected.

Economists cannot agree on definitions of:

Firm

Market

Property

Capitalism ....

2 / 22

**1. Introduction**

Are there such things as:

“Political markets” (**Douglass North**)?

“Markets for ideas” (**Ronald Coase**)?

**1. Introduction**

“If names are not right, words are misused. When words are misused, affairs go wrong. When affairs go wrong, courtesy and music droop, law and justice fail. And when law and justice fail them, a people can move neither hand nor foot.”

Confucius, *Analects*, c. 400 BC

## What is Capitalism?

### 1. Introduction

#### Some definitions of capitalism:

*The Compact Oxford English Dictionary* defines capitalism as: “an economic and political system in which a country’s trade and industry are controlled by private owners for profit, rather than by the state.”

*The New Encyclopaedia Britannica* (1998):  
“Capitalism [is an] economic system ... in which most of the means of production are privately owned and production is guided and income distributed largely through the operation of markets.”

5 / 22

## What is Capitalism?

### 1. Introduction

#### Deirdre McCloskey

(2010): “Market participants are capitalists” ...

and the “market economy has existed since the caves”



6 / 22

### 1. Introduction

Since 1990 we have a large literature on **varieties of capitalism**

⇒ There are many types of capitalism

Does this mean that definitions of “capitalism” are impossible?

### 2. What is a Definition?

**Definitions** focus on the minimum number of common and essential features of a meaningful class of entities.

**Definition** is not the same as analysis.

**Definition** is not the same as **description** because definitions point to the essence rather than the appearance.

**Definitions** do not imply identity within the class:

e.g. defining organisations as a type of institution;  
defining capitalism.

## What is Capitalism?

### 2. What is a Definition?

**Definitions** are ill-based on behavioural outcomes. If the behaviour is interrupted, then such definitions suggest that the entity no longer exists:

**Abstraction** and **definition** are often different analytical procedures:

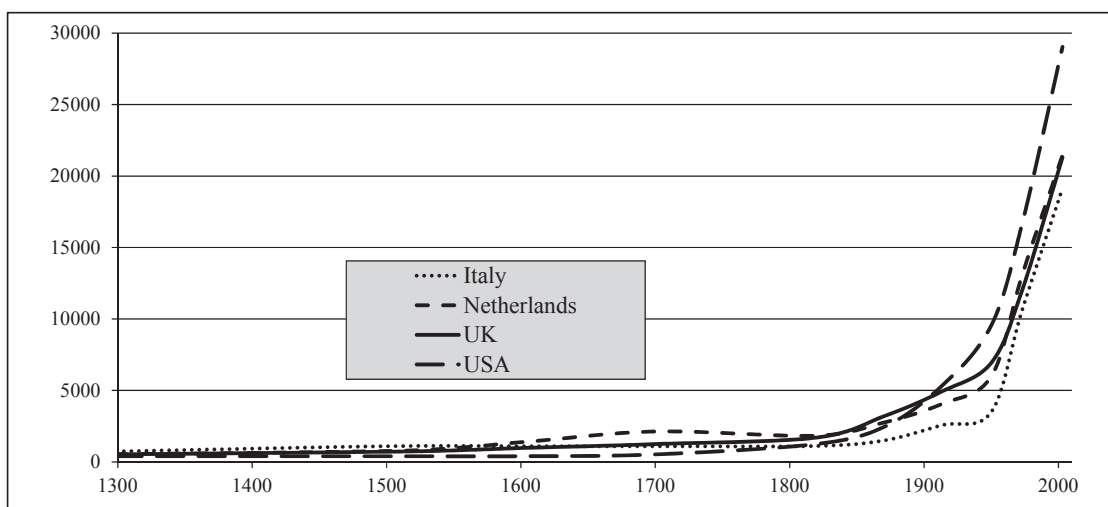
e.g. when **Douglass North** (1994) abstracts from matters of internal organizational conflict and treats organizations as 'players' he does not *define* organizations as players.

9 / 22

## What is Capitalism?

### 2. What is a Definition?

"Carving reality at the joints" - Plato



### GDP per Capita in Pioneering Capitalist Countries

From Maddison (2007, p. 382). GDP (PPP) per capita in 1990 international dollars.

10 / 22

### **3. Defining Capitalism**

**Joseph A. Schumpeter:**

“Owing to the importance of the financial complement of capitalist production and trade, the development of the law and the practice of negotiable paper and of ‘created’ deposits afford perhaps the best indication we have for dating the rise of capitalism.”



11 / 22

### **3. Defining Capitalism**

**Key institutional developments in the eighteenth century.**

The “Financial revolution” of the early 1700s ...

... involving key legal rules for the buying and selling of debt

... and private banks buttressed by the Bank of England.

“If we were asked – Who made the discovery which has most deeply affected the fortunes of the human race? We think, after full consideration, we might safely answer – The man who first discovered that a Debt is a Saleable Commodity.”  
**(Henry Dunning MacLeod 1872)**

12 / 22

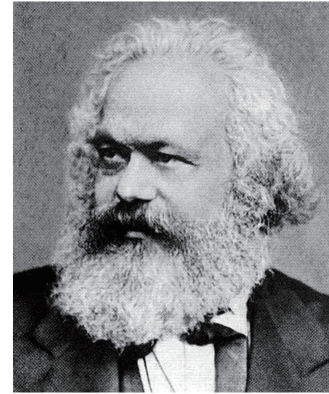


### 3. Defining Capitalism

**Karl Marx (1867):**

“The starting point of the development that gave rise to the wage-labourer and to the capitalist, was the enslavement of the worker. The advance consisted in a change in the form of this servitude, in the transformation of feudal exploitation into capitalist exploitation. ...

... To understand the course taken by this change, we need not go back very far at all. Although we come across the first sporadic traces of capitalist production as early as the fourteenth or fifteenth centuries in certain towns of the Mediterranean, the capitalist era dates from the sixteenth century.”



13 / 22

### 3. Defining Capitalism

**Dating the creation of a working class and wage-labour:**

In 1688 about 57 percent of heads of families were “laboring people and ... servants, “cottagers and paupers,” or “vagrants”.

In 1803, industrial laborers (excluding agriculture, services and the armed forces) made up about 21 percent of heads of households

In 1817 the number of industrial laborers (excluding agriculture, services and the armed forces) was 41 percent of males aged over twenty.

In 1817, the figure for male agricultural employment was 40 percent

14 / 22

## **What is Capitalism?**

### **3. Defining Capitalism**

#### **What about the creation of large corporations?**

As late as 1885 limited companies were few in confined to larger firms in the shipping, iron and steel, and cotton industries. Family businesses still dominated British industry.

But between 1893 and 1897 the annual registrations of new limited companies more than doubled from 2515 to 5149.

In 1905, of the forty-five largest manufacturing, extractive and agricultural processing companies with capital over £2,000,000, only four of them were registered before 1880, and thirty-two were registered in 1890 or after.

15 / 22

## **What is Capitalism?**

### **3. Defining Capitalism**

1. A legal system supporting widespread individual rights and liberties, including to own, buy and sell private property.
2. Widespread commodity exchange and markets, involving money.
3. Widespread private ownership of the means of production, by firms producing goods or services for sale in the pursuit of profit.
4. Much of production organized separately and apart from the home and family.
5. [no condition specified]
6. A developed financial system with banking institutions, the widespread use of property as collateral, and selling of debt.

16 / 22

## What is Capitalism?

### 3. Defining Capitalism

#### Historic “book-ends”

1. A legal system supporting widespread individual rights and liberties, including to own, buy and sell private property.
2. Widespread commodity exchange and markets, involving money.
3. Widespread private ownership of the means of production, by firms producing goods or services for sale in the pursuit of profit.
4. Much of production organized separately and apart from the home and family.



- 5. Widespread wage labor and employment contracts.**
- 6. A developed financial system with banking institutions, the widespread use of property as collateral, and selling of debt.**

17 / 22

## What is Capitalism?

### 4. Conclusions & questions

Definitions are not descriptions, and definitions should not be judged by their descriptive (in)adequacy.

Defining something in terms of its behaviour is often a bad move.

Definition and abstraction are different analytical moves.

Definition does not imply identity within the type.

Definitions are often fuzzy.

There is no fixed tool-kit for making definitions.

18 / 22

**4. Conclusions & questions**

**Capitalism can be defined as a historically specific system, emerging around 1700.**

**4. Conclusions & questions**

**When asking key questions about capitalism – its definition is vital**

**4. Conclusions & questions**

Global capitalist growth from 1700 to 1950 saw a widening gap between rich and poor nations (**Branko Milanovic** 2011)

What are the drivers of enhanced inequality under capitalism?

Markets? – But they have existed for thousands of years.

**4. Conclusions & questions**

Can (and should) capitalism be superseded?

... it partly depends on the definition of capitalism.



# **Innovation and Catch-up in Global Capitalism**

**By Professor Keun Lee (Seoul Nat'l Univ. Economics)**





Lecture by  
Co-Winner of the 2014 Schumpeter Prize

## **Innovation and Catch-up in Global Capitalism**

이근 Keun Lee  
Seoul National University

### **Schumpeterian Analysis of Economic Catch-up**

Knowledge, Path-Creation, and the  
Middle-Income Trap?



**KEUN LEE**

CAMBRIDGE

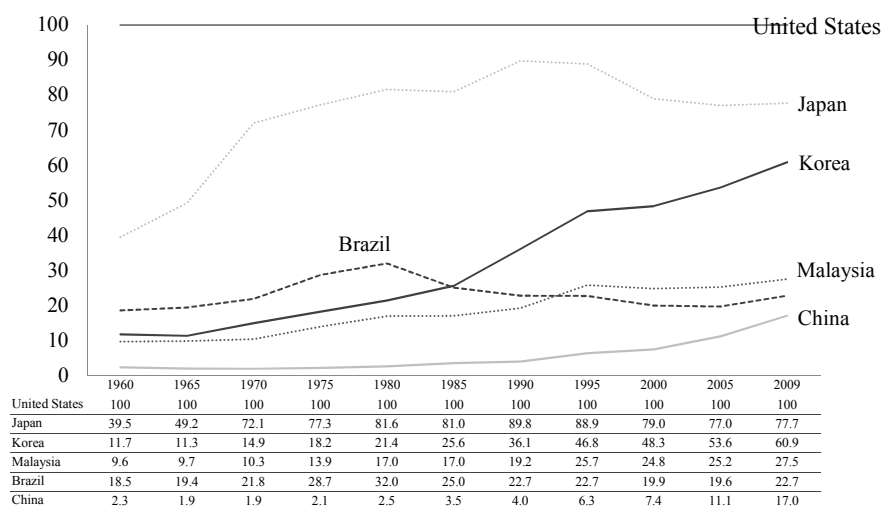
⇒ **Winner of  
2014 Schumpeter Prize**

## What is catch-up? cf) catch up, forging ahead, and falling behind (Abramovitz 1986)

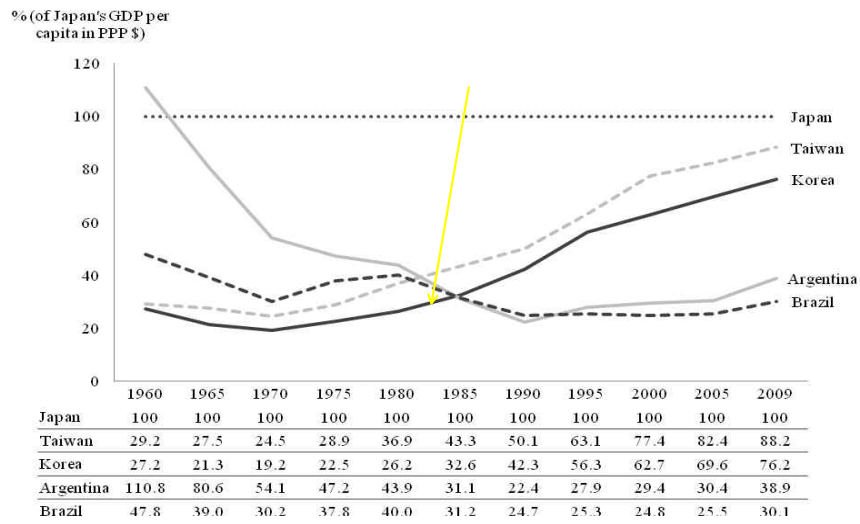
- 1) national level:  
per capita income , market share in world
  - 2) firm-level:  
productivity, market share, sales growth
- => rise and decline of nations and firms**

3

**Record of Catching-up / Falling behind:**  
As % of the US per capita Income ( in 2005 Constant PPP)



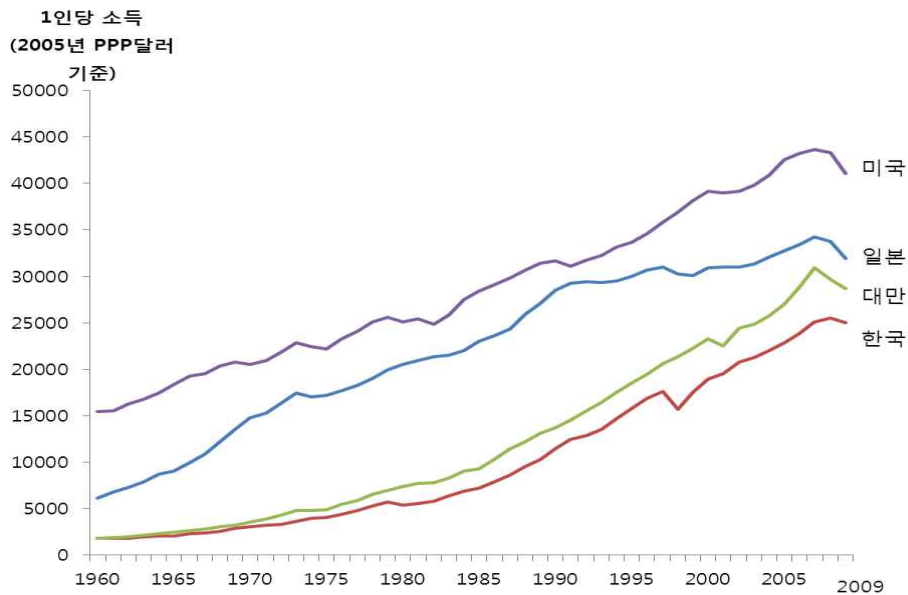
### Trend of the Income Levels as Percentage of that of Japan:



=> Korea, Taiwan: No catching up in 60s, 70s:-> only from 1980s

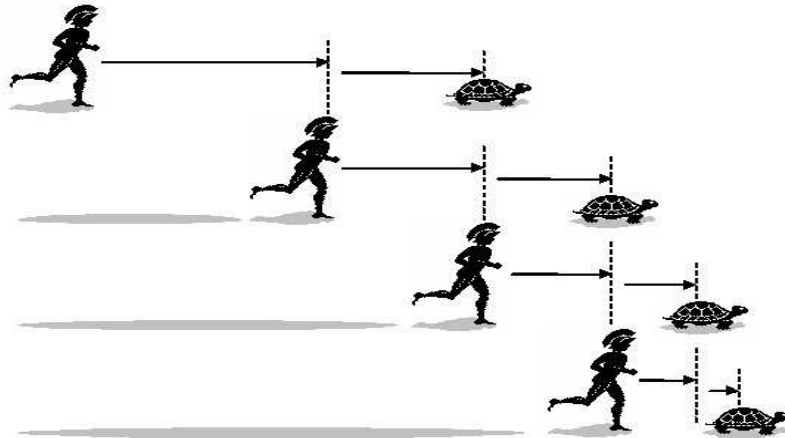
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### Per capita Income (PPP, 2005) Trend: USA, Japan, Korea, Taiwan; Catching-up as Chasing a moving target!

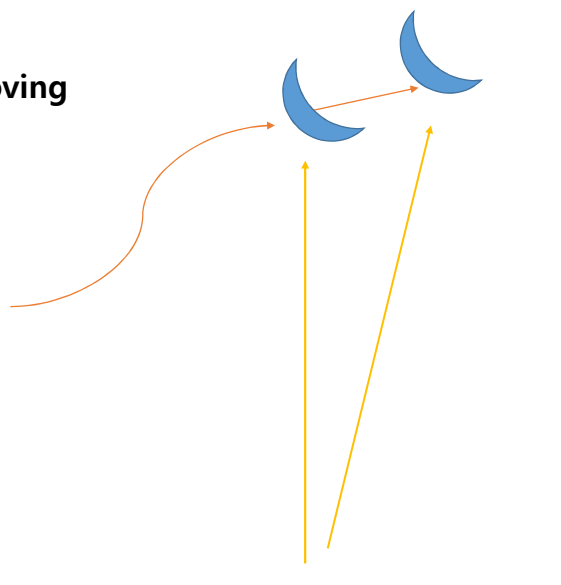


## Zenon's paradox 제논의 역설:

Archilles will be not able to catch up with a turtle



How to shoot a moving target (moon)



## **The Paradox of Catch-up**

**“You will never catch up  
if you just keep catching-up”**

**-> You need to create a new path  
or to leapfrog  
(, and that requires innovation)**

9

**So, you need innovation!**

**then, what is innovation?**

**혁신이란 무엇인가**

**problem-solving: *demand side*  
eg) *Bill Gates***

**new combinations : *supply side*  
eg) *Flash of Genius***

**=> that is why innovation is predictable**

10

## 할리우드 영화 "*Flash of Genius*"

a case of Ford stealing the invention of a genius

**Robert Kearns: Intermittent Windshield Wiper**

(blinking like a human eye, rather than continuously moving)

**1994: US Federal Circuit ruled against Ford (Mustang)**

**When his invention un-assembled, just a collection of parts, transistors, bolts and nuts. -> what is new? Ford**

Charles Dickens: Tale of Two Cities. a collection of alphabet->all are in a dictionary; what is new??

→ "Innovation is a new combination" Schumpeter

→ 혁신은 '새로운 결합'!

11

## Who is Schumpeter and Neo-Schumpeterian?

**Adam Smith:** *birth of new world*

**Karl Marx:** *law of motion of capitalism*

**John Keynes:** *demand side*

**Joseph Schumpeter:** *supply side*

*Tech. change as key engine of economic change*

**Neo-Schumpeterian**

*Tech. change can be endogenous, predictable;*

*Law of motion in innovation*

**Keun Lee's research:** 추격도 혁신 중심으로 설명 가능

*Innovation also key engine of catching-up;*

*catching-up can be explained and predictable*

12

How Innovation and catch-up  
is predictable?

Answer)

By looking at innovation systems ,  
(technological regimes)

So, system failure  
cf) market failure (Neo-classical)

**Lundvall (1992): NIS (national Innovation system) =**

**elements and relationships**

- 1) which interact in the production, diffusion and use of knowledge**
- 2) rooted inside the borders of a nation state.**

**About** diverse factors and their interactions beyond firm-level:

Sectoral IS (or SIS) consider:

- 1) technological regimes,
- 2) demand conditions (market regimes),
- 3) actors (firms, gov't) and their networks,
- 4) surrounding institutions (finance, IPRs, laws, culture, etc.)

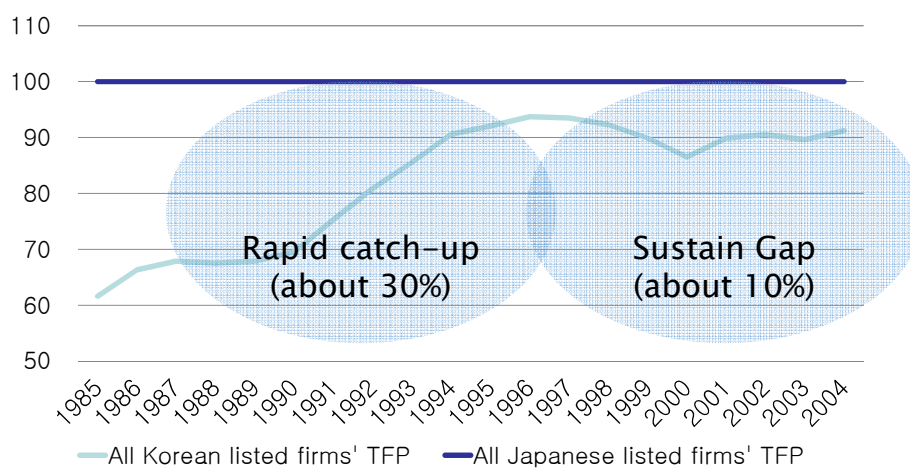
**-> Differences in NIS determines competitiveness of  
nations, sectors and firms.**

How can you predict innovation and catch-up across sectors?

By looking at sectoral innovation systems (technological regimes);

Eg) tacitness, cycle time, access to foreign knowledge, degree of embodied technical change; modularity

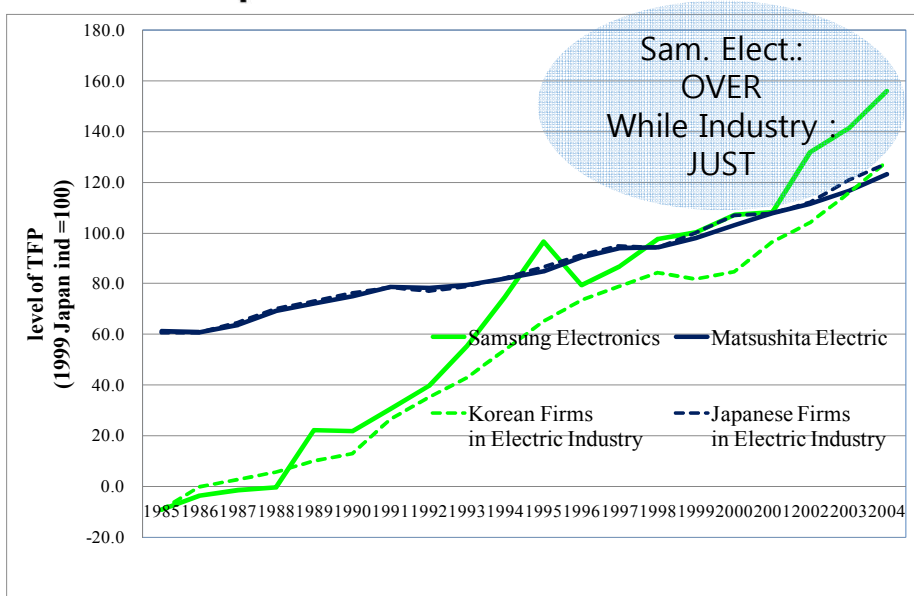
### TFP Catch-up in firms : Korea vs Japan



Source: Jung and Lee (2010: Industrial & corp. change)

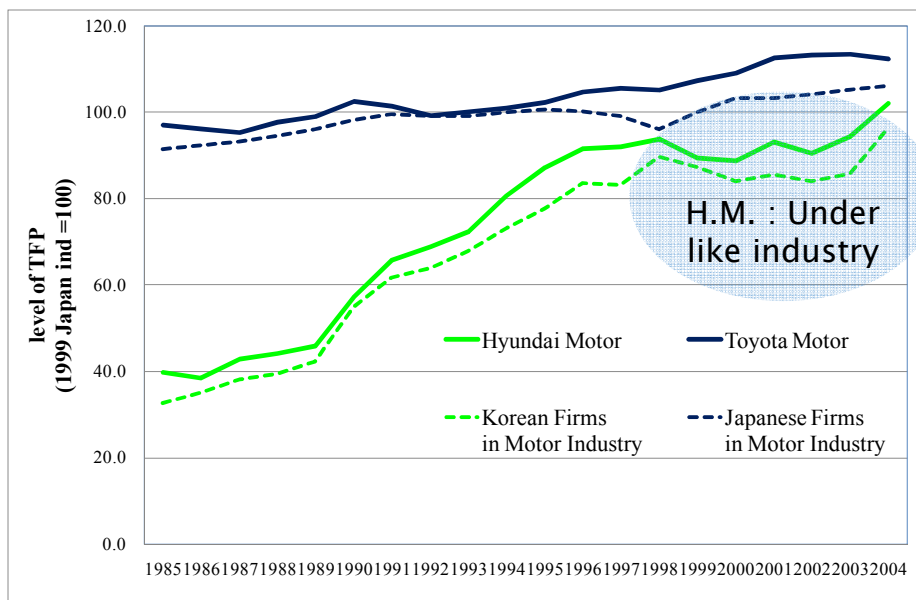


## Convergence of Productivity in IT: Korea vs Japan



17

## "Still Gap in Autor: Hyundai vs. Toyota



18

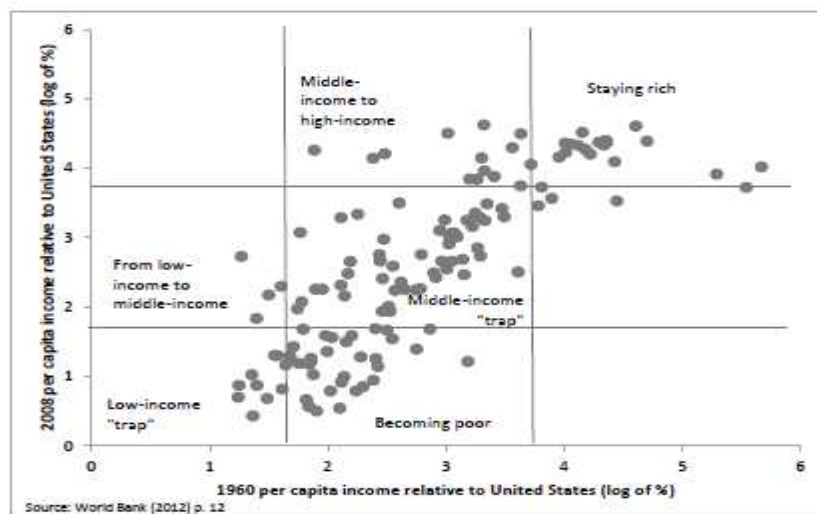
Q1: Why quick catch-up in IT and slow catch-up in Auto?

- 1) IT = shorter cycle than auto
- 2) IT less tacit knowledge than autos
- 3) IT higher modularity than autos

Q2: Why Korea moved beyond MIT  
cf) Latin American stuck in the MIT

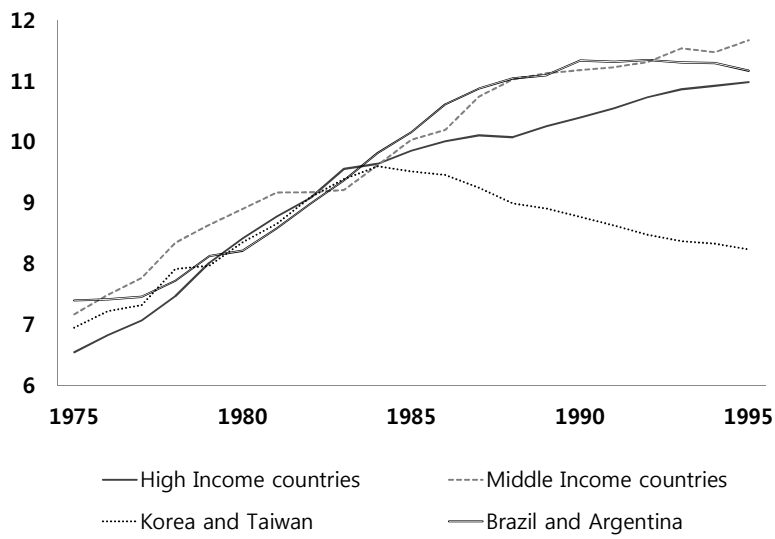
Ans: Because Korea specialized in short cycle sectors;  
cf) LA specialized in long cycle sectors

## Middle income Traps (MIT) in so many countries



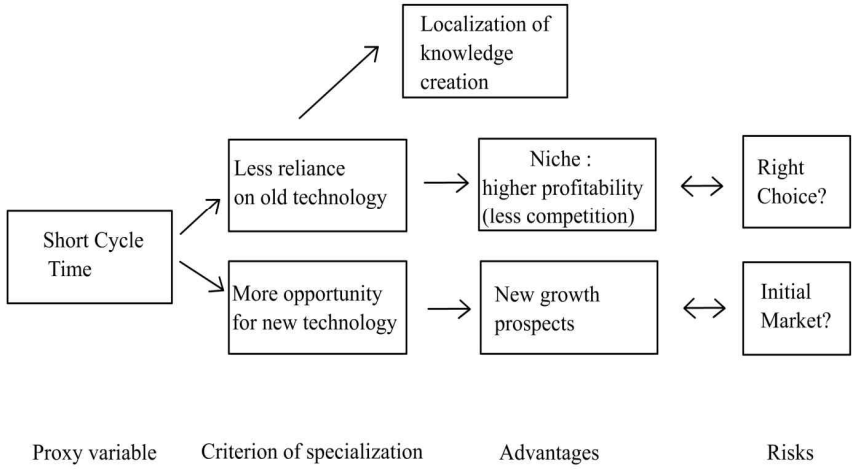
Source: World Bank (2012) p. 12

### Cycle Time of Technologies



### Overall: Short cycle technology matter

Figure 6-2 : Criterion of Technological Specialization - Why the Sectors of Short Cycle Matter



## Innovations vs. Institutions

Acemoglu and Robinson,  
Why Nations Fail

-> b/c extractive vs inclusive institution

### Bill Gates' book review

"Never explain how to move to more "inclusive" institutions"

### Inclusive vs. extractive :

-> relevant more in low income or pre-modern economy  
b/c less difference among middle income countries

=> Why Nations Fail at Middle Income Stage:  
due to not-Innovative systems

23

Quality of Institutions	( constraints on executives)		
	1965	1980	2000
Korea	3	1	6
Taiwan	2	3	6
Philippines	5	1	6
Thailand	1	3	7
Malaysia	7	5	4
China	2	3	3
India	7	7	7
Brazil	1	1	6
Argentina	3	1	6
Chile	5	1	7
Mexico	3	3	6

Source: Polity IV Dataset; from Lee and Kim 2009 table 1

24

Q: How the latecomer catch-up or overtake the incumbents?

- Leapfrogging and Window of Opportunity  
(Perez and Soet 1988)

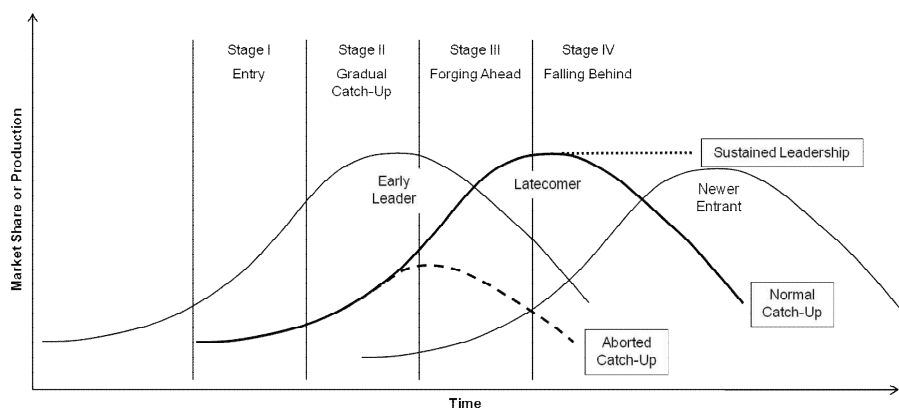
"Techno-economic paradigm change can be a window of opportunity for late-comers

-> bypass the old paradigm to jump into the new paradigm and thereby leapfrog"

whereas the incumbent tend to be locked into existing technologies or into the incumbent trap

## Our Theory: Industry Catch-Up Cycle

Eg: Cell phones: Motorola -> Nokia -> Samsung



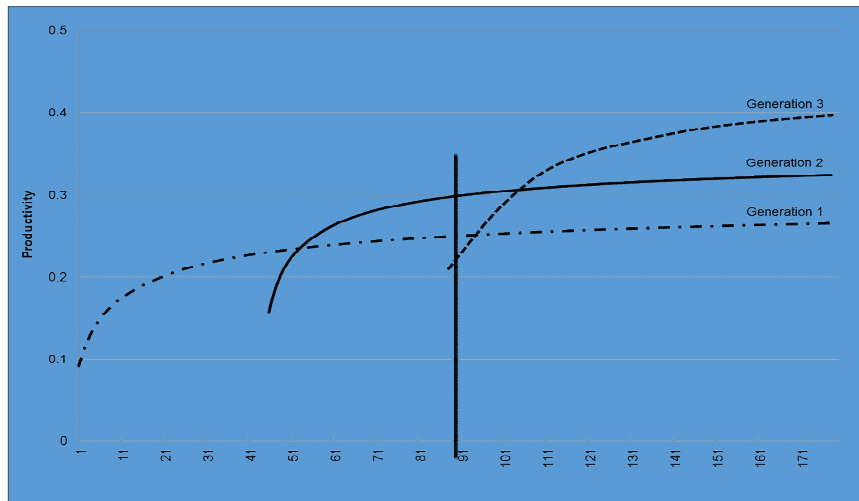
Each cycle is that of a leading firm or a collection of firms in a nation;  
-> a new cycle replacing an old cycle

비약(leapfrogging; First mover) strategy: 디지털 vs 아날로그

경로추종형 추격 Path-following = entry by 1<sup>st</sup> generation tech. 1세대 기술에서 시작

단계생략형 추격 Stage-skipping = entry by 2<sup>nd</sup> generation (생산성이 높고 안정적)

경로창출 Path-creating = leapfrogging by 3<sup>rd</sup> generation (새롭게 출현한 기술)



Secrets of Catch-up Cycles

=

windows of opportunity

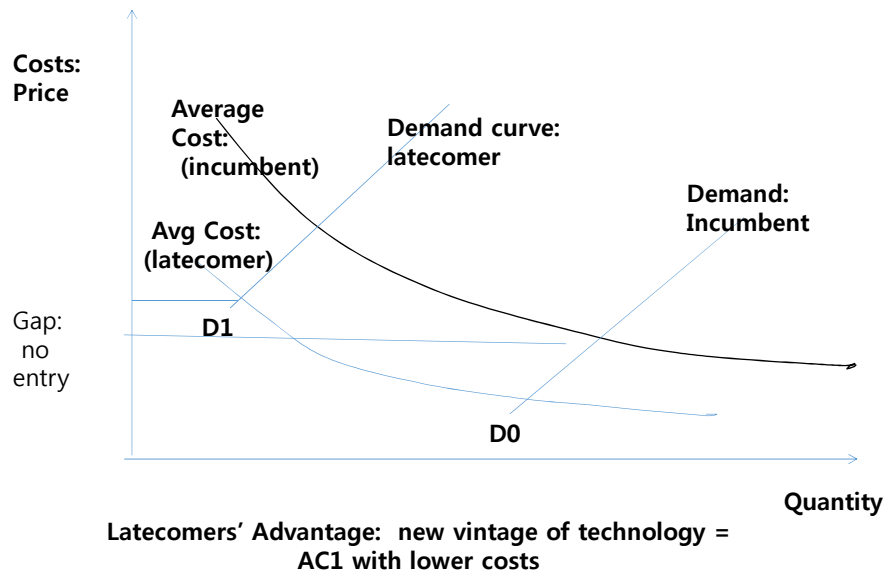
+

Incumbents Responses  
(incumbents' trap)

and

Latecomer's Advantages and  
Disadvantages

## Latecomers' disadvantages and Industrial Policy

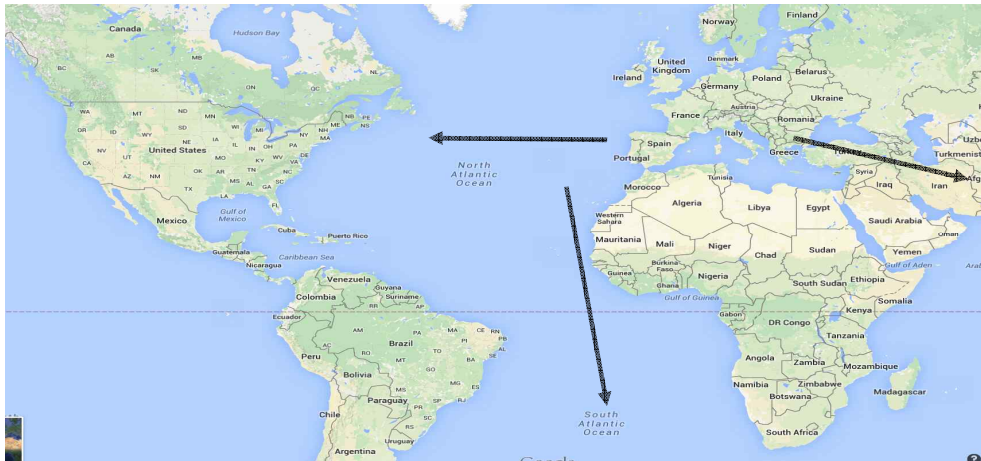


## Four Windows of Opportunity for Latecomers

- 1) New Techno-Economic Paradigm (Perez & Soete 1988)  
Analogue → Digital: Korean Digital TV (Lee, Lim & Song, 2005)  
mini paradigm or new generations of tech. new trajectories, disruptive innovations
- 2a) Business Cycle: Downturns  
- TFT-LCD Industry (Mathews, 2005)
- 2b) Changes in Demand Conditions
- 3) Industrial Policy & Government regulation
  - Indian pharmaceutical industry (Guennif & Ramani, 2012)
  - Telecom in Korea & China (vs, India, Brazil: Lee, et al 2012)

## Columbus' Leapfrogging in 1492

-> 2 or 3 path to India and path-creation by Columbus



## Cape Town : a new path to go to India

Latitude South 남위 34o; longitude East 동경 18o:

*Obrigado!* => *ありがとう*

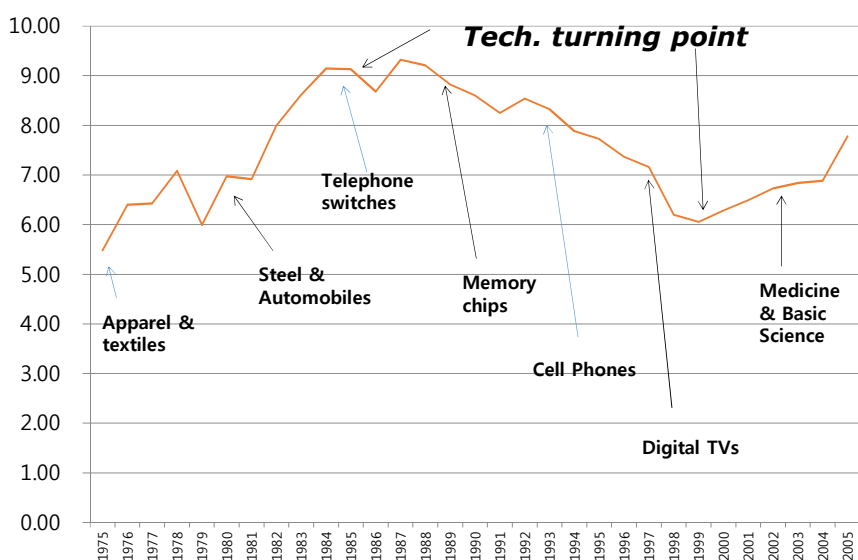




### 3 Paradox of Catch-up 세가지 추격의 역설

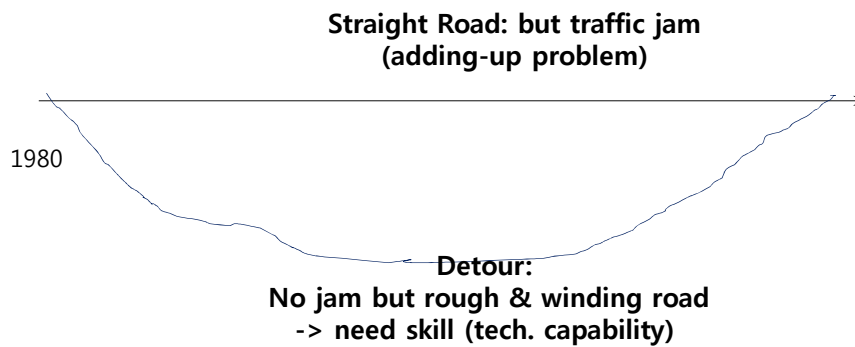
- 1). To be similar, be different:  
'같아지기 위해서는 달라져야 한다';  
--- 스티브 잡스
- 2) A straight road may be late, whereas a detour can be faster:  
'빨리 가려고 하는 자가 늦게 된다'
- 3) You can fly through a window (of opportunity)  
or fall through the window:  
기회의 창으로 비약할수도 있고 추락할 수도 있다

### 2 Tech. Turning Points and the Korean Detour (path-creation)



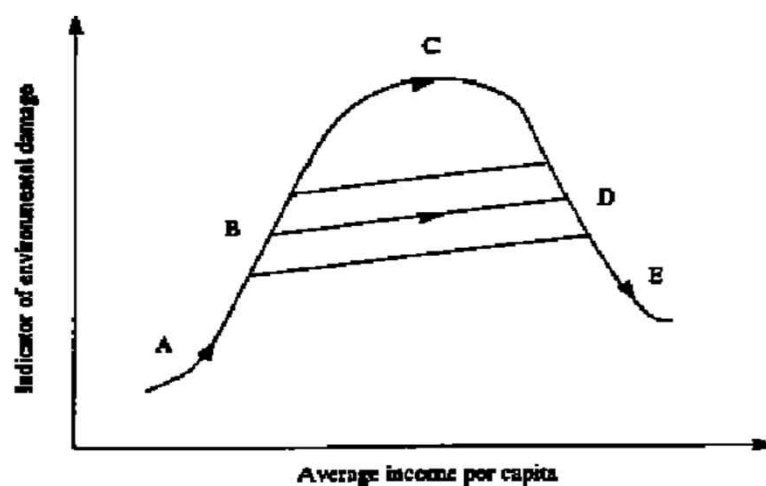
34

**2<sup>nd</sup> paradox = detour can be a short cut**  
**Can take a Detour if you have a high driving skill**  
**, when the straight road is jammed**



35

### Stage-skipping and Leapfrogging in the Environmental Kuznets Curve



Source: adapted from Assefa (2011)

## To From Middle to High Income Countries

From Trade Specialization to Technology Specialization		
<b>Stages</b>	Low or low middle income	Upper middle income To high income
<b>Type of specialization</b>	Trade specialization	Technology specialization
<b>Source of specialization</b>	Comparative advantages from resource endowment	Absorption/design capability from learning/R&D effort
<b>Type of sector</b>	Labor intensive/resource industries	Short cycle/emerging technologies
<b>End goal</b>	competitive export industries	Indigenous knowledge creation & diffusion
<b>Background theory</b>	Product life cycle (inheriting)	Catch-up cycle (leapfrogging)

37

### 3 Failures

	<b>Market failure (Neo-classical)</b>	<b>System failure (Schumpeterian)</b>	<b>Capability failure (catch-up )</b>
Focus	Market institutions	Interaction among actors	<b>Actors (firms)</b>
Source	Knowledge as public good	Cognition failure from tacitness of knowledge	<b>historically given; No learning opportunity</b>
Example problem	Sub-optimal R&D	R&D impact: low	<b>No R&amp;D</b>
Solutions	R&D subsidies	Reducing cognitive distance	<b>Access to knowledge and help in learning</b>
School Analogy	Tuition support	Making more friends	<b>Targeting student learning</b>
Relevance	Developing and advanced countries	Developing and advanced countries	<b>More unique to developing countries</b>

From Keun Lee, a chapter in Stiglitz & Lin eds, 2013

감사합니다!!

*Obrigado!* = ありがとう

[www.keunlee.com](http://www.keunlee.com)

*Gracias!* !

*Obrigado!*

*Thank you!*

*amesege'nalo'*

謝謝大家

감사합니다

Danke shon!

ありがとう

40

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41

