

“Knowledge and wealth : an overall framework”.

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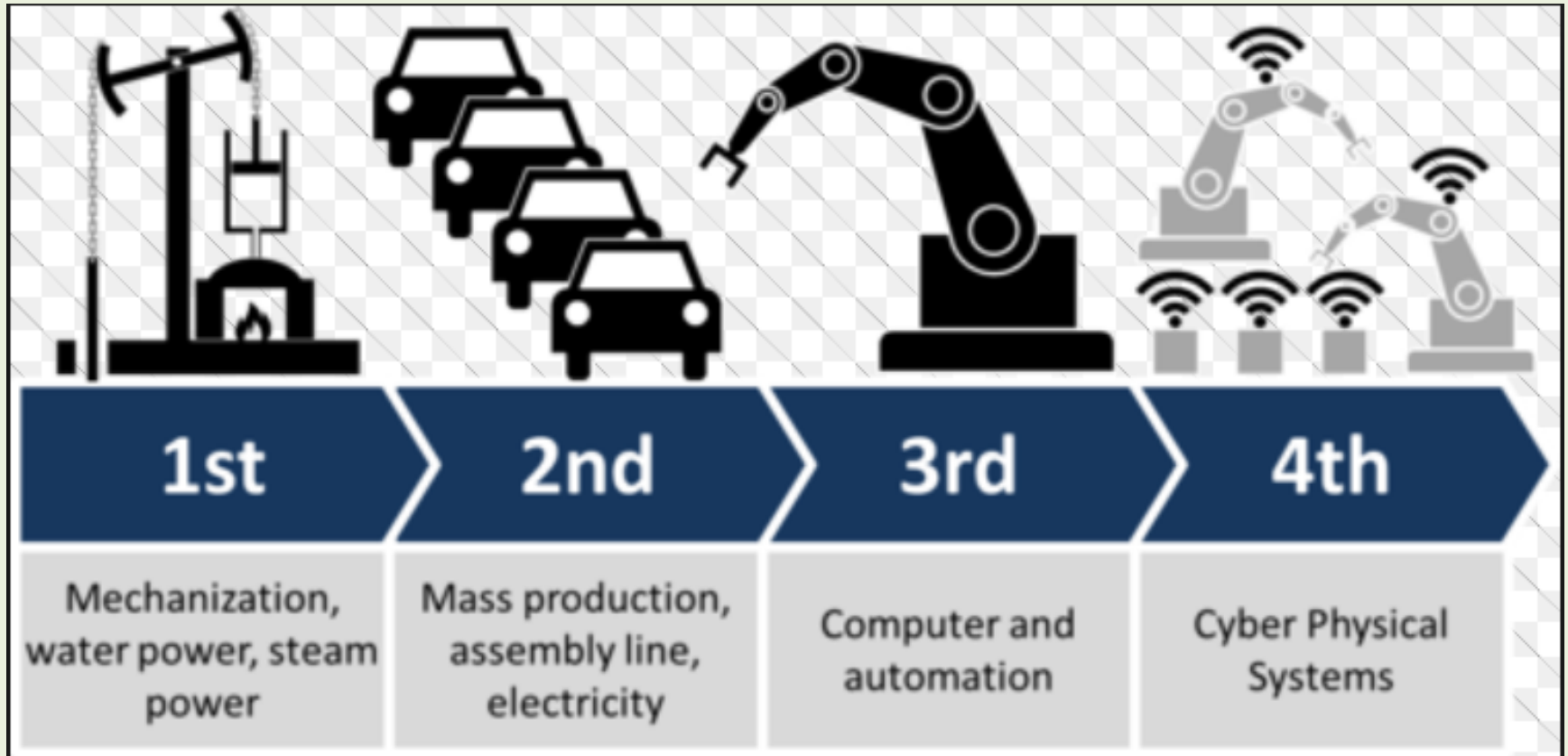


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3. Wealth Creation in the Knowledge Economy: Theoretical foundations
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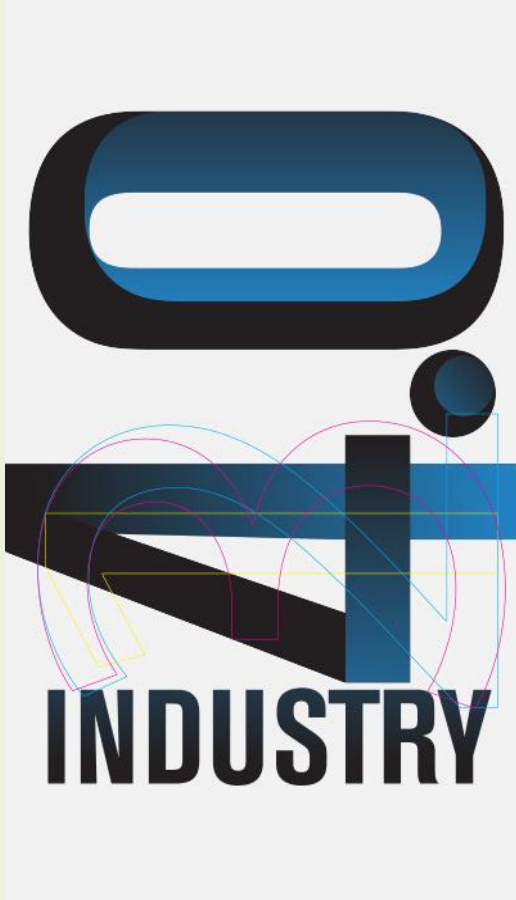
1. The Fourth Industrial Revolution and the Knowledge Economy context

The fourth industrial revolution

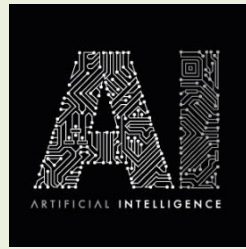


There are three reasons why today's transformations announce the arrival of a Fourth and distinct industrial revolution: **velocity**, **scope**, and **systems impact**.

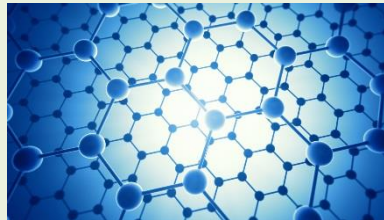
Source: Wikipedia



Industry 4.0: Enablers



Artificial Intelligence



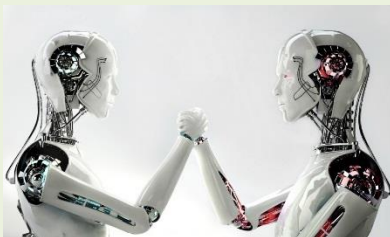
Nanotechnology



3-D printing



Autonomous Vehicles



Robotics



Internet of Things

Four pillars of the KE :

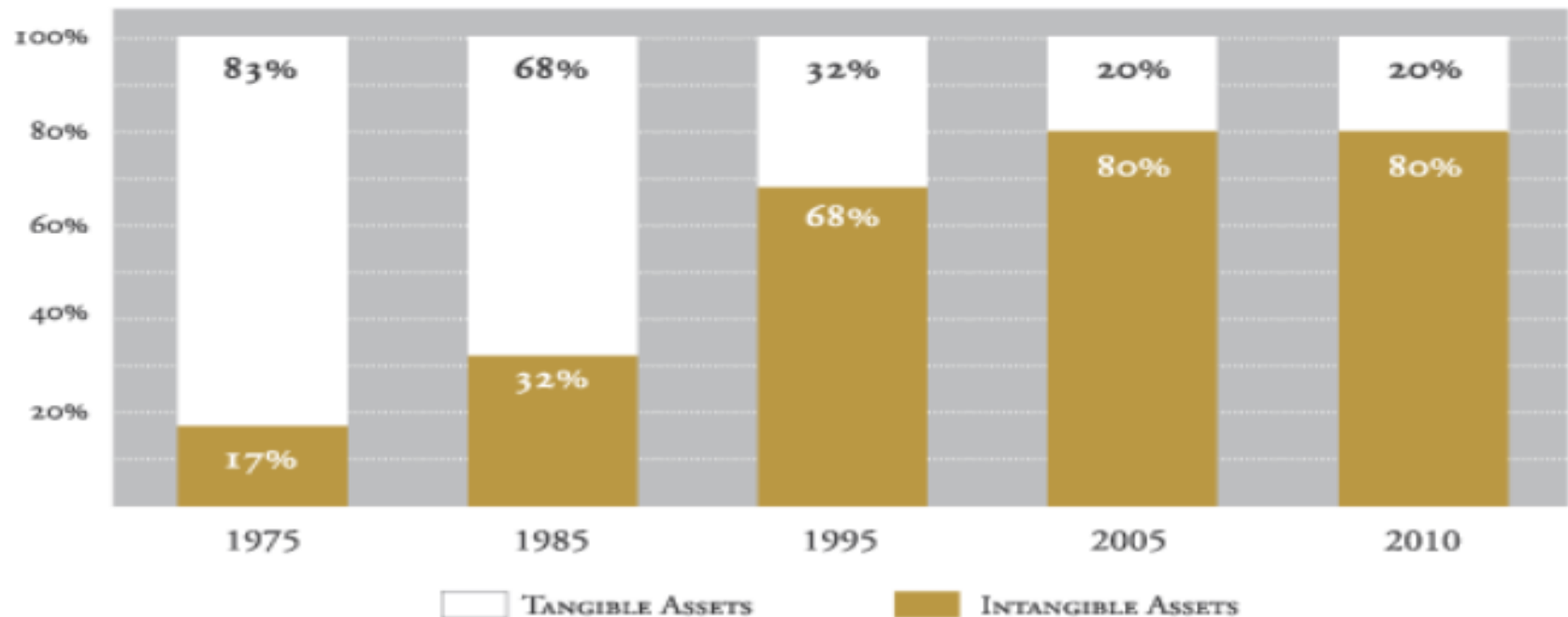
1. An Economic incentive and institutional regime that provides good economic policies and institutions, which promote efficient allocation of resources and stimulate creativity and incentives for the efficient creation, dissemination, and use of existing knowledge.
2. An educated and skilled labor force that continuously upgrades and adapts skills to efficiently create and use knowledge.
3. An effective innovation system of firms, research centers, universities, consultants, and other organizations that keeps up with the knowledge revolution, taps into the growing stock of global knowledge, and assimilates and adapts new knowledge to local needs.
4. A modern and adequate information infrastructure that facilitates the effective communication, dissemination, and processing of information and knowledge.

2. Intangibles as fundamental factors of wealth creation.

INTANGIBLE ASSET MARKET VALUE

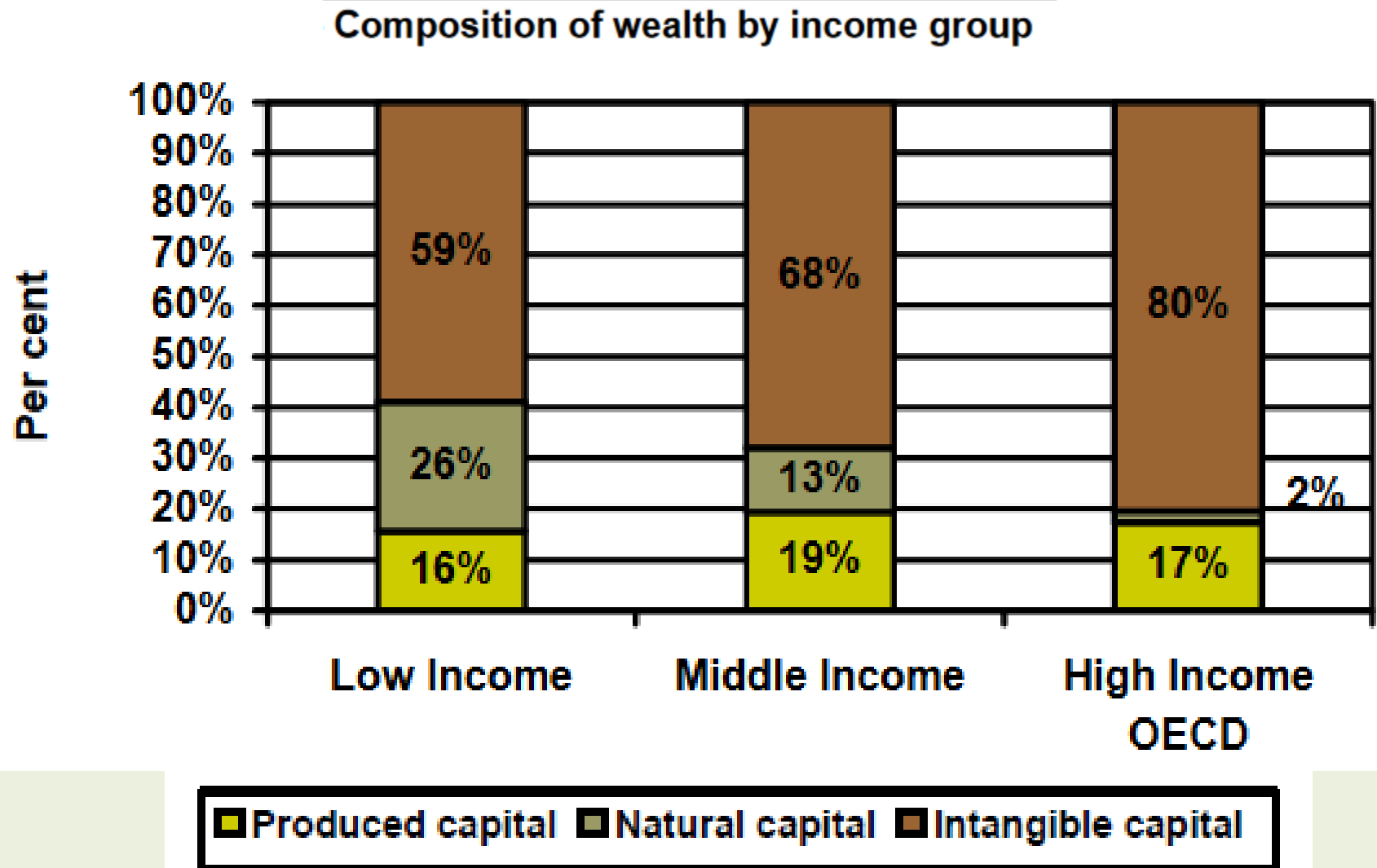
Within the last quarter century, the market value of the S&P 500 companies has deviated greatly from their book value. This "value gap" indicates that physical and financial accountable assets reflected on a company's balance sheet comprises less than 20% of the true value of the average firm. Our further research shows that a significant portion of this intangible value is represented by patented technology.

COMPONENTS OF S&P 500 MARKET VALUE



Source: Ocean Tomo

Where Is the Wealth of Nations?



Note: oil countries excluded

Source: Where is the Wealth of Nations?; Measuring Capital for the 21st Century, ©2006 The international Bank for Reconstruction and Development/The World Bank

3. Wealth Creation in the Knowledge Economy. Theoretical foundations.

Basic definitions

Wealth Definition

- A measure of the value of all of the **assets of worth owned by a person, community, company or country.**
- Wealth is found by taking the total market value of all the physical and intangible assets of the entity and then subtracting all liabilities.
- For national wealth as measured in the national accounts the net liabilities are those owed to the rest of the world.
- **Wealth is the present value of the expected stream of future utility that an entity could hope to extract from tangible and intangible resources available, assuming these resources are and will be managed in an effective and efficient way.**

Good and bad wealth

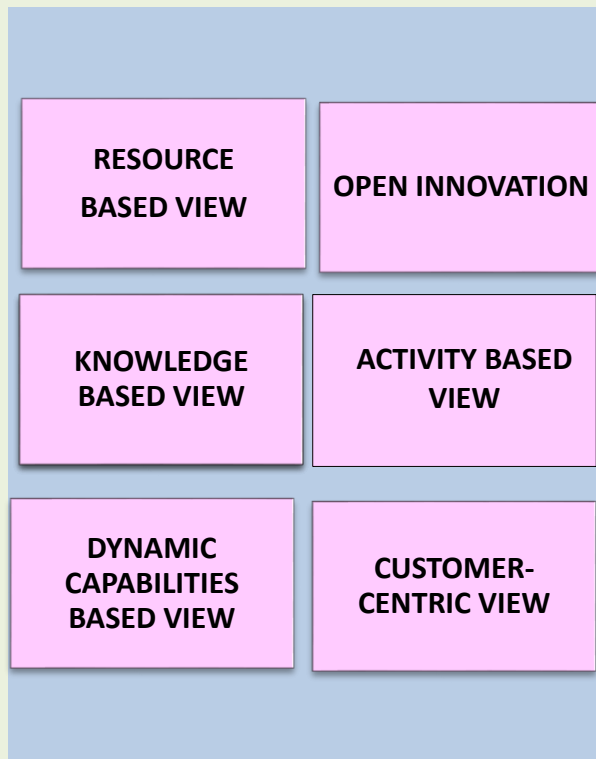
Good wealth consists of assets that are created, distributed and used in a manner that respects human dignity and promotes the common good, thus leads to increases in well-being.

Bad wealth consists in assets that are accumulated in an unjust manner (using force or fraud), is distributed in a manner that benefits only elites and excludes the poor and marginalized, and is used to create invidious distinctions and not for the common good.

Wealth creation in the Knowledge Economy:

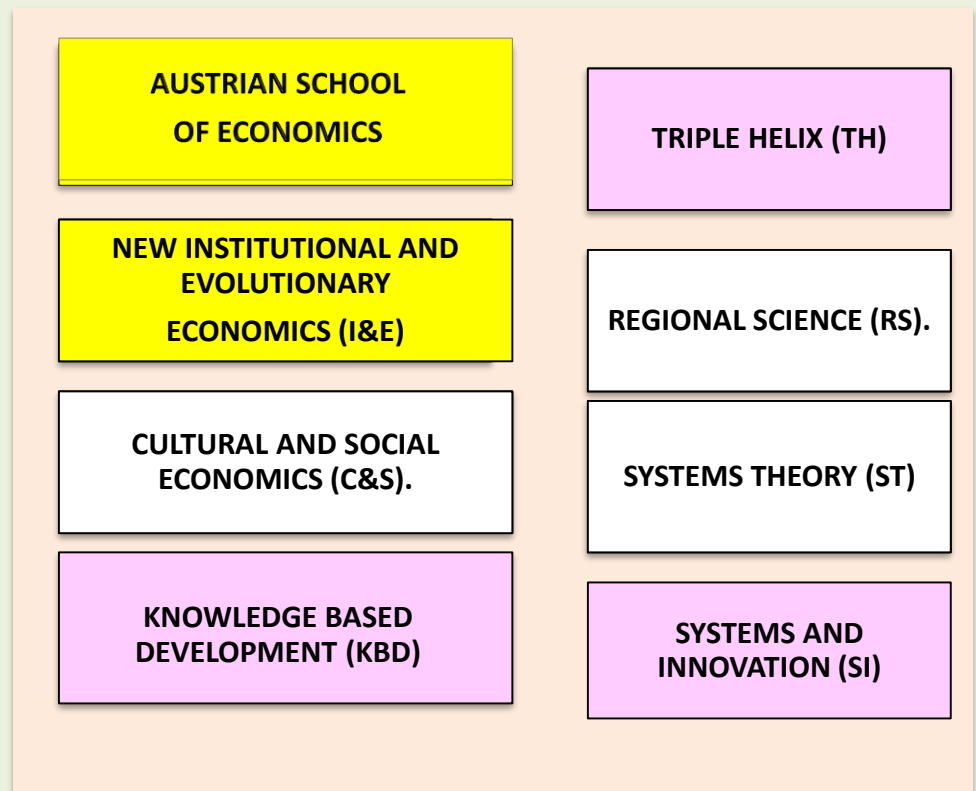
Theoretical Foundations

Micro Level (Enterprises)

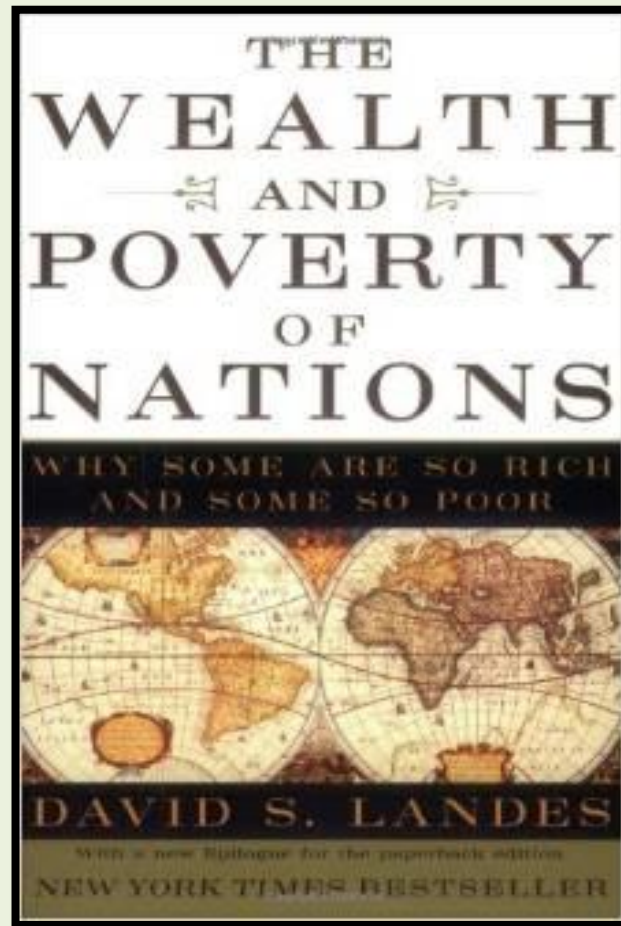


INCAS, ICBS (OICBS, IICBS), SCBS.

Macro Level (Cities, Regions, Nations)



CADIC, CICBS, RICBS, NICBS



The Wealth and Poverty of Nations:
Why Some Are So Rich and Some So
Poor Paperback - May 17, 1999
by [David S. Landes](#) (Author)

“Growth without technological advance is not good; it represents short-run advantage that will be paid for in long-run retardation”.

David S. Landes

Source: Neef, Dale (1998) The Knowledge Economy. No. 5 Landes, D. *“Homo Faber, Homo Sapiens: knowledge, technology, Growth, and Development”* pp 53-73 Butterworth-Heinemann, [USA](#).

Society theoretically best suited to pursue material progress and general enrichment

1. Knew how to operate, manage and build the instruments of production and to create, adapt, and master new techniques on the technological frontier.
2. Was able to impart this knowledge and know-how to the young, whether by formal education or apprenticeship training.
3. Chose people for jobs by competence and relative merit; promoted and demoted on the basis of performance.
4. Afforded opportunity to individual or collective enterprise; encourage initiative, competition, and emulation.
5. Allowed people to enjoy and employ the fruits of their labor and enterprise.

These standards imply corollaries: gender equality (thereby doubling the pool of talent); no discrimination on the basis of irrelevant criteria (race, sex, religion, etc.); also a preference for scientific (means-end) rationality over magic and superstition (irrationality).

Political and social institutions that favor the achievement of these larger goals

1. **Secure rights of private property** the better to encourage saving and investment.
2. **Secure rights of personal liberty**- secure them against both the abuses of tyranny and private disorder (crime and corruption).
3. **Enforce rights of contract**, explicit and implicit.
4. **Provide stable government, not necessarily democratic**, but itself governed by publicly known rules (a government of laws rather than men). If democratic, that is, based on periodic elections, the majority wins but does not violate the rights of the losers; while the losers accept their loss and look forward to another turn at the polls.
5. **Provide responsive government**, one that will hear complaint and make redress.
6. **Provide honest government**, such that economic actors are not moved to seek advantage and privilege inside or outside the marketplace. In economic jargon, there should be no rents to favor and position.
7. **Provide moderate, efficient, ungreedy government**. The effect should be to hold taxes down, reduce the government's claim on the social surplus, and avoid privilege.

Political and social institutions that favor the achievement of these larger goals

This ideal society would also be honest. Such honesty would be enforced by law, but ideally, the law would not be needed. People would believe that honesty is right(also that it pays) and would live and act accordingly.

More corollaries : this society would be marked by geographical and social mobility. People would move about as they sought opportunity, and would rise and fall as they made something or nothing of themselves. This society would value new as against old, youth as against experience, change and risk as against safety. It would not be a society of equal shares, because talents are not equal; but it would tend to a more even distribution of income than is found with privilege and favor. It would have a relatively large middle class. This greater equality would show in more homogeneous dress and easier manners across class lines.



Austrian School of Economics

Main economic factors in the Austrian School of Economics

Individual choice

Individuals and their choices active participants in the economic process.
Markets and value of things are determined by these choices.

Entrepreneurship

Economic process too much uncertain and could not be predicted by one so “out of the loop”.
Entrepreneur is the only one with the proper knowledge to predict outcomes and minimize risk.
Entrepreneur, perhaps the most important role in any economy.

Free and competitive markets

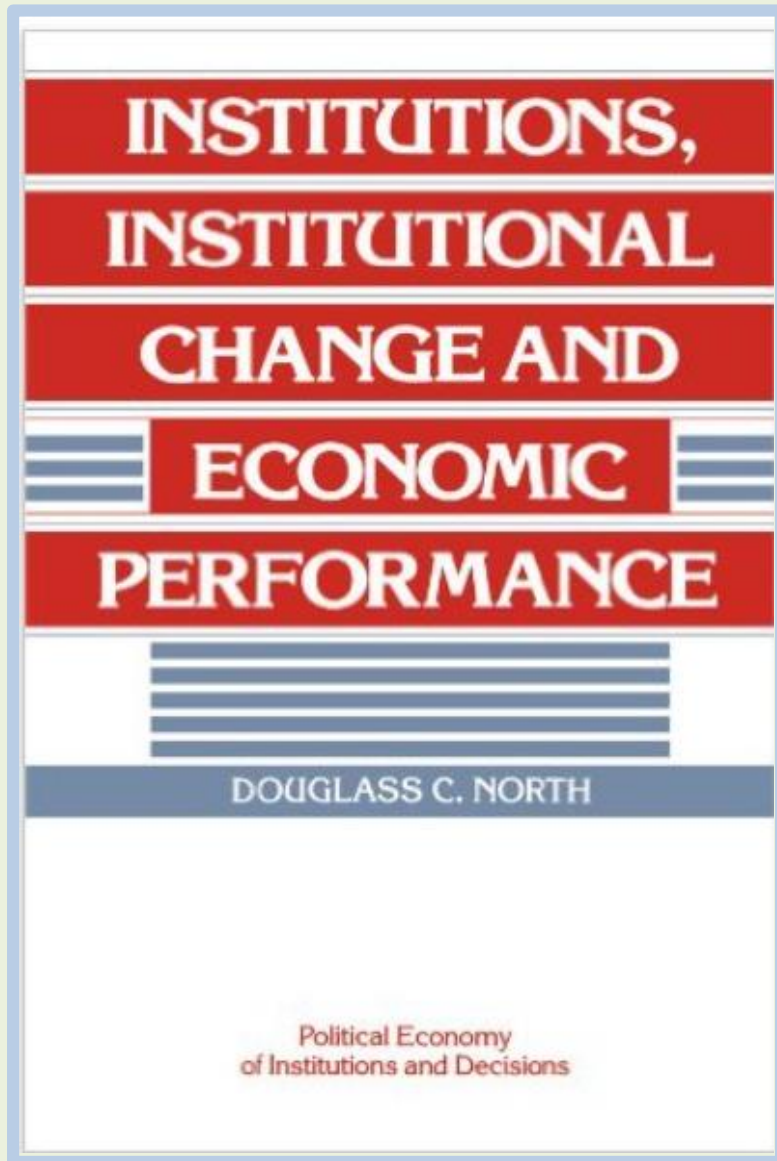
Belief in a “free and competitive markets” approach to macroeconomics.
Strong belief in a minimal role for government in our everyday lives.

Private property

Individual property ownership is the bedrock of a healthy economy,
Without it, there is no basis for capital, for trade, for value... and free market.

A price system

A realistic price system emerges when free markets are allowed to do their work.



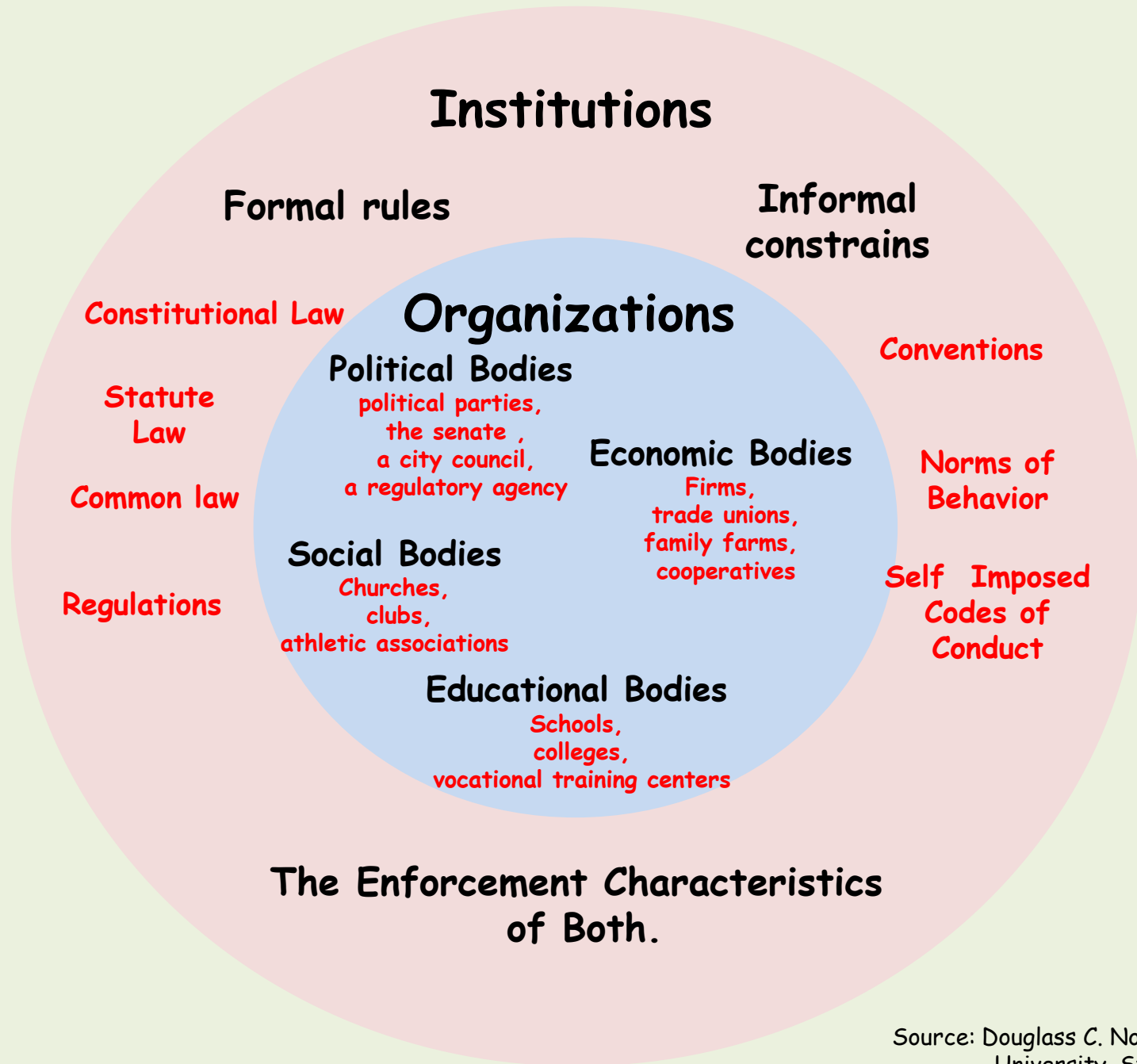
Institutions create the incentive structure in an economy, and organizations will be created to take advantage of the opportunities provided within a given institutional framework.

THE NEW INSTITUTIONAL ECONOMICS

Institutions are the rules of the game of a society or more formally are the humanly-devised constraints that structure human interaction.

Organizations are the players, groups of individuals bound by a common purpose to achieve objectives

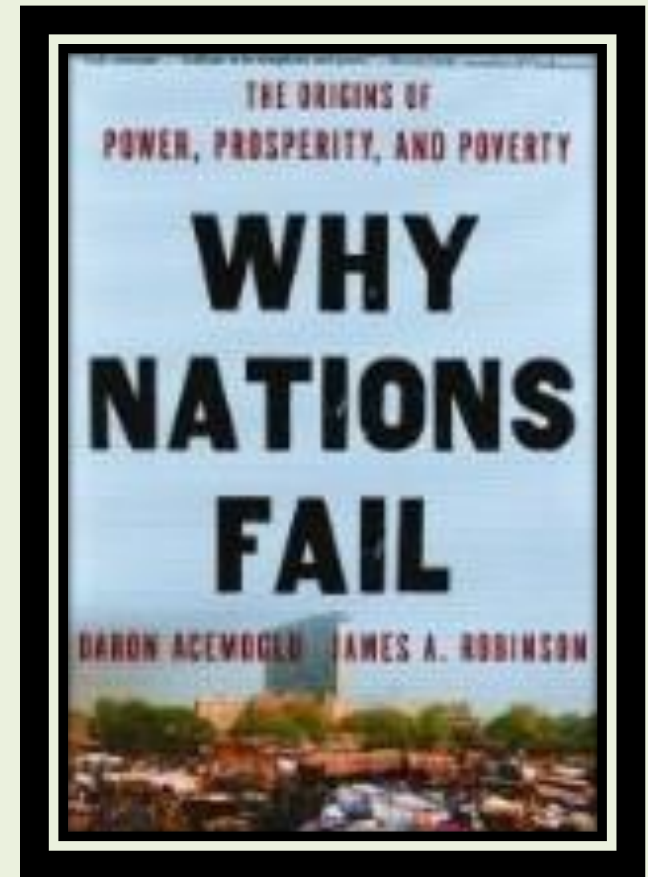
THE NEW INSTITUTIONAL ECONOMICS



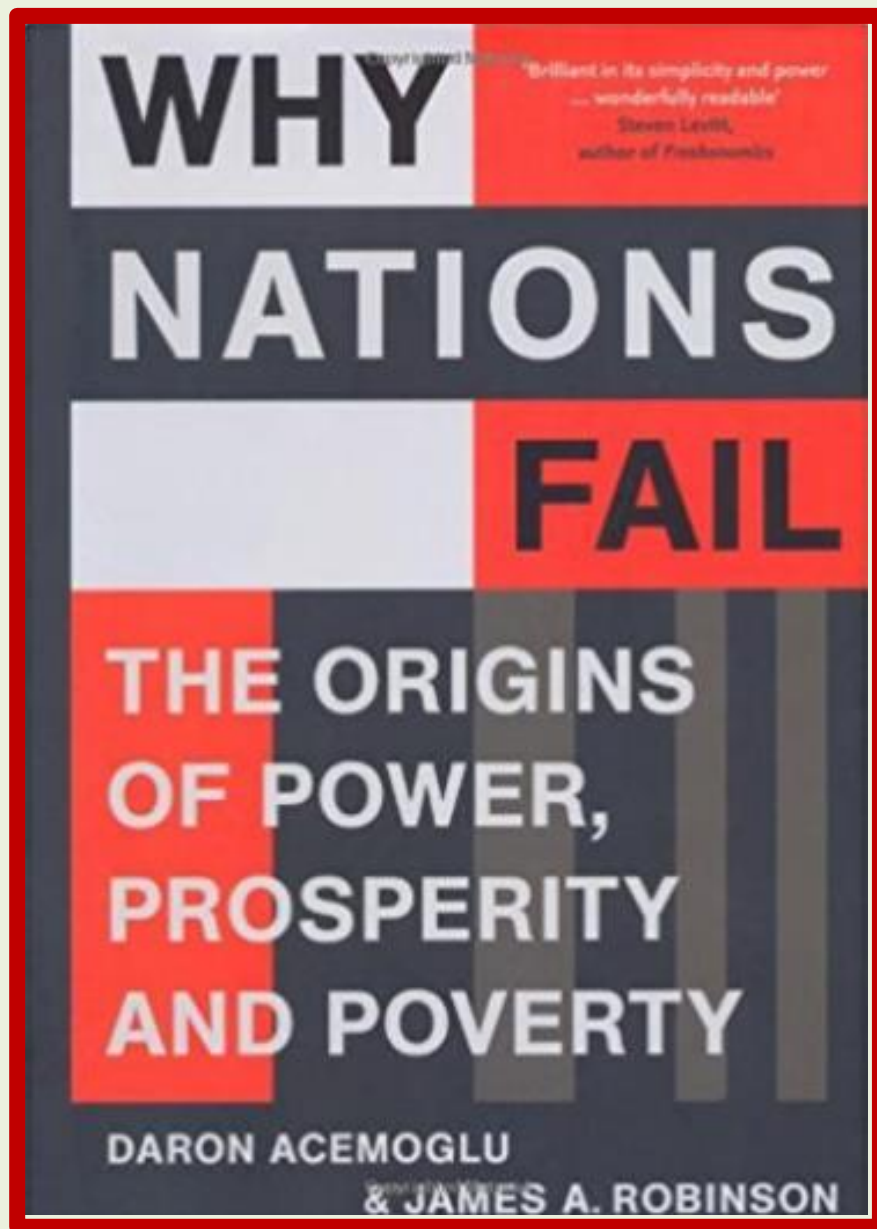
Source: Douglass C. North, Washington University, St. Louis

Why Nations Fail

Argues that the key differentiator between countries is “institutions”. Nations thrive when they develop “inclusive” political and economic institutions, and they fail when those institutions become “extractive” and concentrate power and opportunity in the hands of only a few.



Source: Why Nations Fail. The origins of power prosperity and Poverty. Darom Acemoglu & James A. Robisonn . Profile Books Ltd. (2013)



New theory reveals that to prosper citizens need **“inclusive institutions”** which create **virtuous circle of innovation economic expansion and more widely-held wealth**

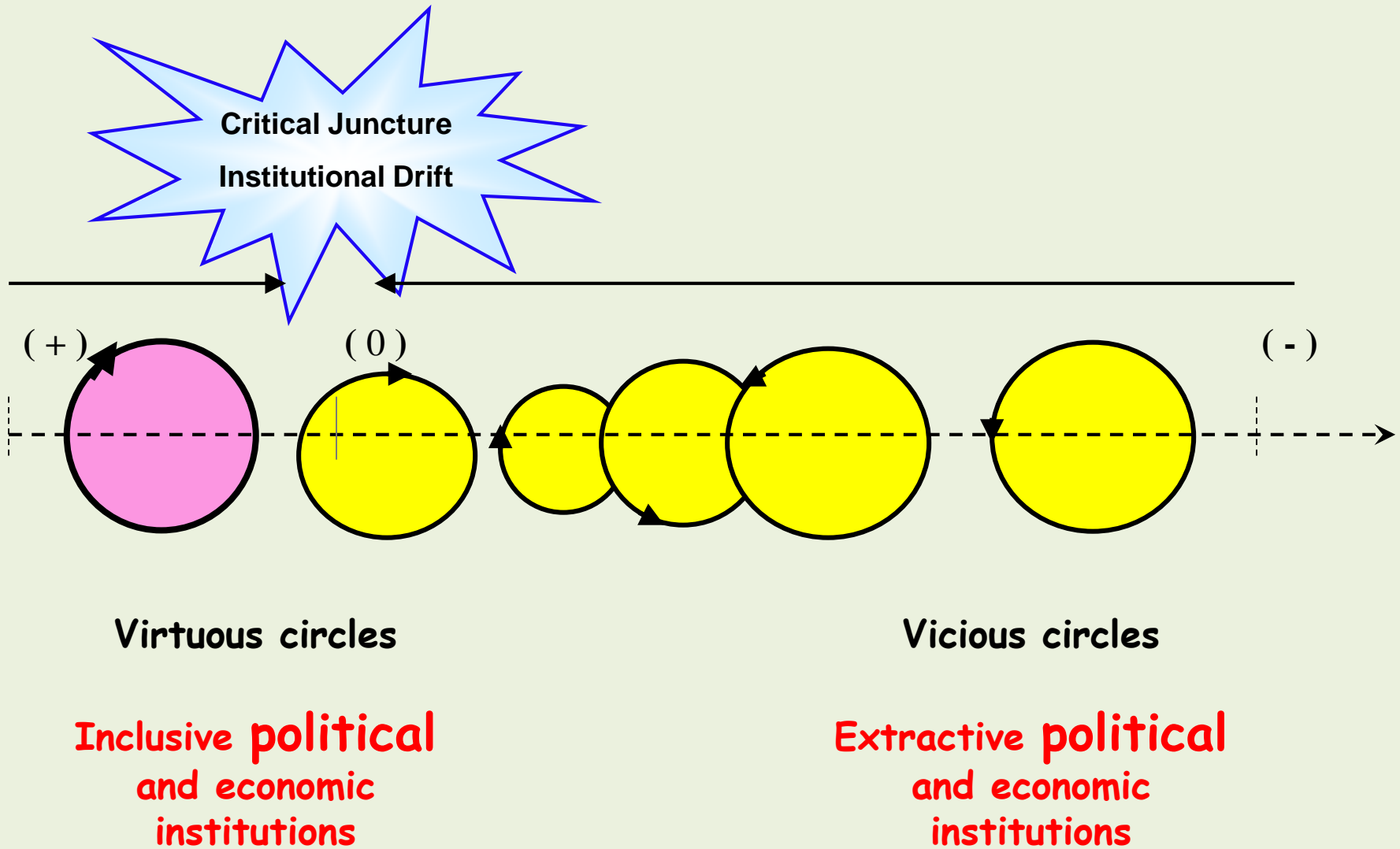
The New Institutional Economics basic theory

Inclusive economic institutions that enforce property rights, create a level playing field, and encourage investments in new technologies and skills are more conducive to economic growth than **extractive economic institutions** that are structured to extract resources from the many by the few and that fail to protect property rights or provide incentives for economic activity.

Inclusive economic institutions are in turn supported by, and support:

Inclusive political institutions that is, those that distribute political power widely in a pluralistic manner and are able to achieve some amount of political centralization so as to establish law and order, the foundations of secure property rights, and an inclusive market economy. Similarly, extractive economic institutions are synergistically linked to **extractive political institutions**, which concentrate power in the hands of a few, who will then have incentives to maintain and develop extractive economic institutions for their benefit and use the resources they obtain to cement their hold on political power.

Breaking the vicious circles.



Wealth Creation in the Knowledge Economy

Macro dimension

Heritage
Foundation
Index of
economic
freedom.

**Free
Market
economy**

**Knowledge
based
economy**

**KEI
K4D
ISB**
Global
Innovation
index (GII)

**Liberal
democratic
political
systems**

Freedom House
Global democracy ranking
Democracy index

**Entrepreneurial
and Business
Excellence**

Global
entrepreneurship and
development index.
GEINDEX

**Inclusive political, and
economic institutions**

WEF
Institutions
GCI

World Justice
Project
Rule of Law
Index

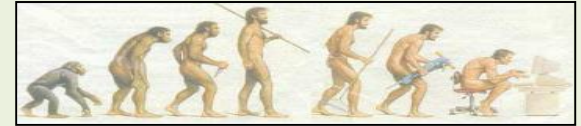
**High quality
people**

WEF
The human capital report

Micro dimension

Wealth creation in the KE

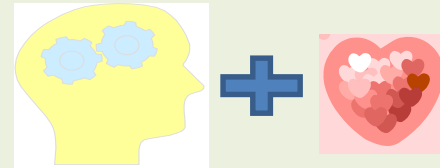
People



Knowledge



Intangibles



Competitive Enterprises



Innovative Enterprises



Suitable Environment



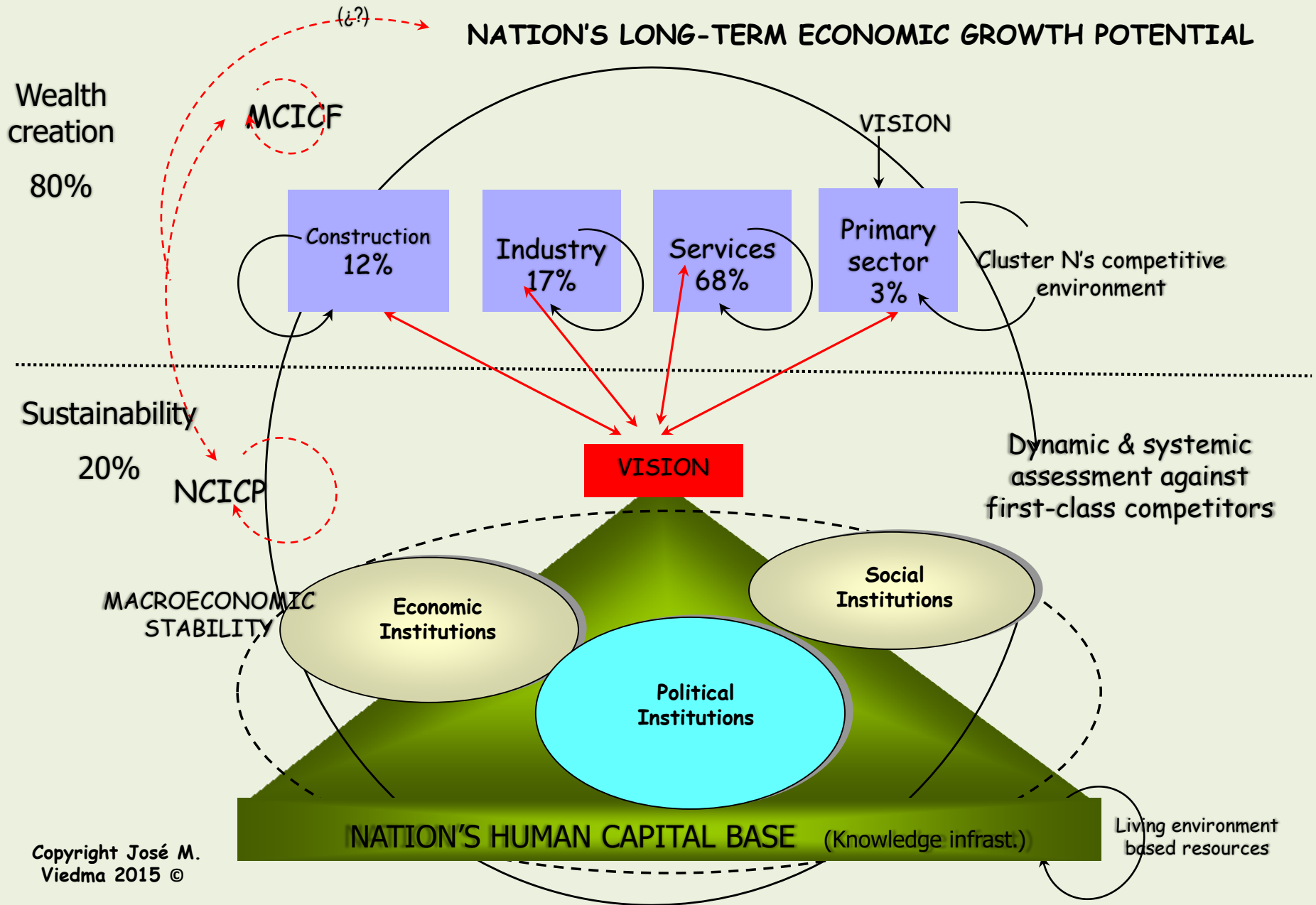
4. In search of an overall framework.

Two sets of frameworks

- Competitiveness frameworks:
 - ❖ W.E.F. Global Competitiveness Index
 - ❖ I.M.D. World Competitiveness Year Book
- IC Community frameworks
 - ❖ Mainly based on Skandia Navigator (Leif Edvinsson, Carol Yeh-Yun Lin)
 - ❖ Some concentrate on knowledge-creation and innovation. (Ahmed Bounfour, F.Javier Carrillo, Aino Kianto and Pirjo Stahle)
 - ❖ NICBS that tries to integrate the two sets of frameworks and considers the micro and macroeconomic dimension.

NICBS framework

NICBS: Main Structure & Key Elements



Wealth Creation in the Knowledge Economy

MAIN AGENTS

**Entrepreneurial
and Business
excellence**

Entrepreneurs. Top
Management Team and Key
Professional People.
Knowledge and skilled workers

Free Market economy

**Liberal democratic
political systems**

Political Leaders and Leaders of
Economic and Social Institutions
Knowledge and skilled workers.

Knowledge based economy

**Inclusive political, economic and social
institutions**

High quality people

Knowledge and skilled workers.
Conscientious parents (specially mothers)
Teachers in elementary and high school.
Professors in University(Not its chief
creators)

Wealth Creation in the Knowledge Economy

Intangible Capital



The diagram illustrates the components of Intangible Capital. At the top is a purple oval labeled 'Entrepreneurial and Business Capital'. Below it is a thick purple horizontal line. Underneath this line are four yellow ovals arranged in a 2x2 grid: 'Economic Institutions Capital' (top-left), 'Political Institutions Capital' (top-right), 'ITT and Knowledge Capital' (bottom-left), and 'Social Institutions Capital' (bottom-right). Below these four ovals is another thick purple horizontal line. At the bottom of the diagram is a large purple oval labeled 'Human Capital'.

**Entrepreneurial
and Business
Capital**

**Economic Institutions
Capital**

**Political Institutions
Capital**

**ITT and Knowledge
Capital**

**Social Institutions
Capital**

Human Capital

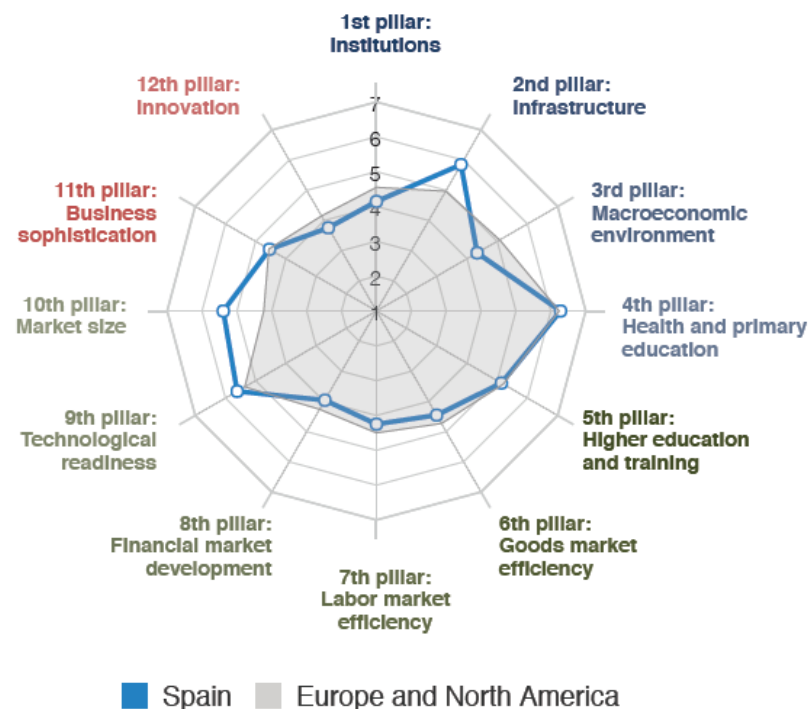
5. Practical Implications.

Spain



WEF. Global Competitiveness Index. Spain

	Rank / 138	Score (1-7)	Trend	Distance from best	Edition	2012-13	2013-14	2014-15	2015-16	2016-17
Global Competitiveness Index	32	4.7	—	■ ■ ■ ■ ■	Rank	36 / 144	35 / 148	35 / 144	33 / 140	32 / 138
Subindex A: Basic requirements	33	5.2	—	■ ■ ■ ■ ■	Score	4.6	4.6	4.5	4.6	4.7
1st pillar: Institutions	55	4.1	—	■ ■ ■ ■ ■						
2nd pillar: Infrastructure	12	5.9	—	■ ■ ■ ■ ■						
3rd pillar: Macroeconomic environment	86	4.3	—	■ ■ ■ ■ ■						
4th pillar: Health and primary education	30	6.3	—	■ ■ ■ ■ ■						
Subindex B: Efficiency enhancers	29	4.8	—	■ ■ ■ ■ ■						
5th pillar: Higher education and training	31	5.1	—	■ ■ ■ ■ ■						
6th pillar: Goods market efficiency	54	4.5	—	■ ■ ■ ■ ■						
7th pillar: Labor market efficiency	69	4.2	—	■ ■ ■ ■ ■						
8th pillar: Financial market development	71	4.0	—	■ ■ ■ ■ ■						
9th pillar: Technological readiness	25	5.6	—	■ ■ ■ ■ ■						
10th pillar: Market size	16	5.4	—	■ ■ ■ ■ ■						
Subindex C: Innovation and sophistication factors	34	4.1	—	■ ■ ■ ■ ■						
11th pillar: Business sophistication	29	4.5	—	■ ■ ■ ■ ■						
12th pillar: Innovation	38	3.8	—	■ ■ ■ ■ ■						

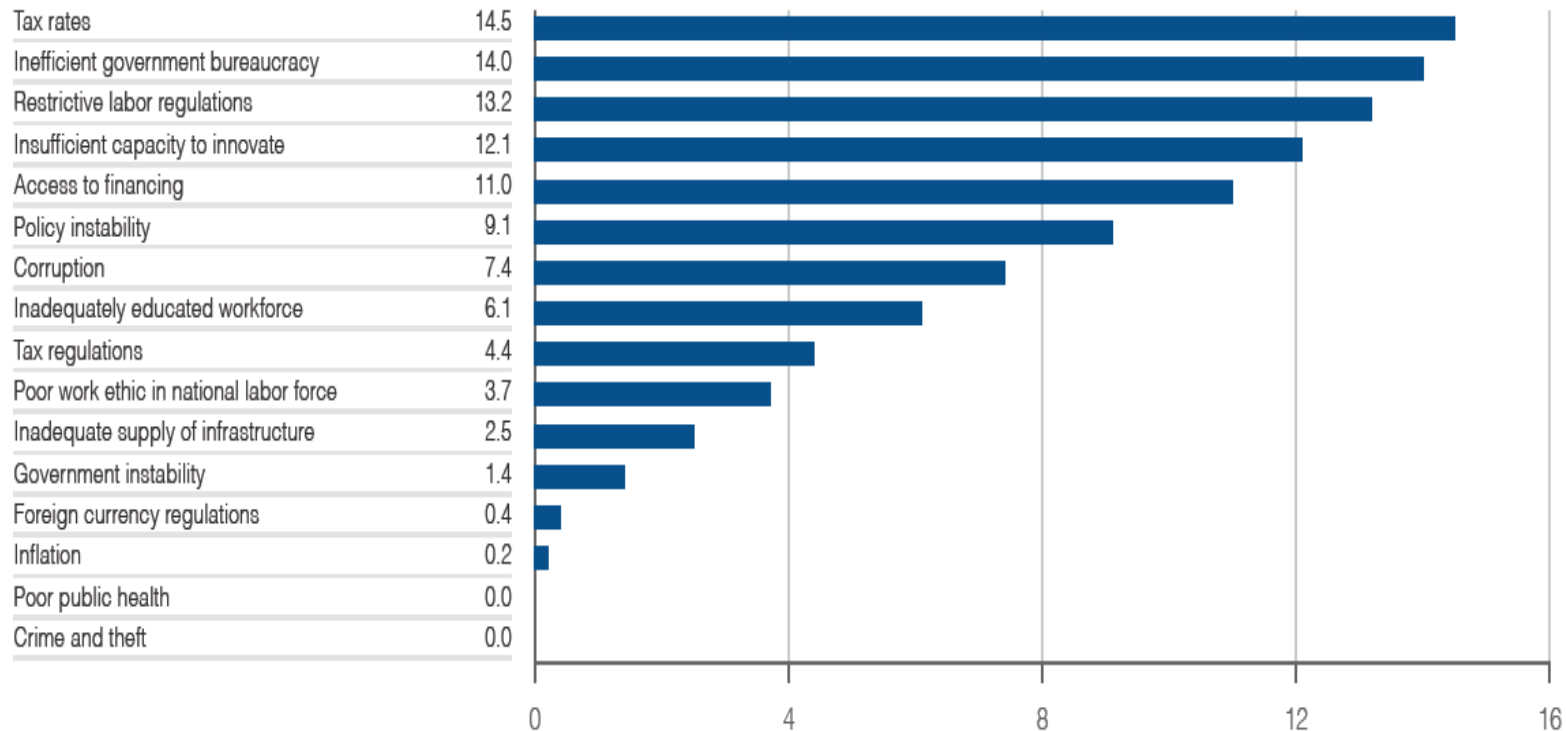


Source: The Global Competitiveness Report 2016-2017
World Economic Forum pp.326

WEF.Global Competitiveness Index Spain

Most problematic factors for doing business

Source: World Economic Forum, Executive Opinion Survey 2016



Note: From the list of factors, respondents to the World Economic Forum's Executive Opinion Survey were asked to select the five most problematic factors for doing business in their country and to rank them between 1 (most problematic) and 5. The score corresponds to the responses weighted according to their rankings.

SPAIN

ASSETS

First class infrastructure
Health and primary education
Tourism economic sector (1°pillar)
Construction, real estate and infrastructure (2° pillar)
Full member of the EU and Euro zone
Some first class multinationals but not enough
Higher education and scientific system
Free market economy
Democratic political system
Financial sector reform

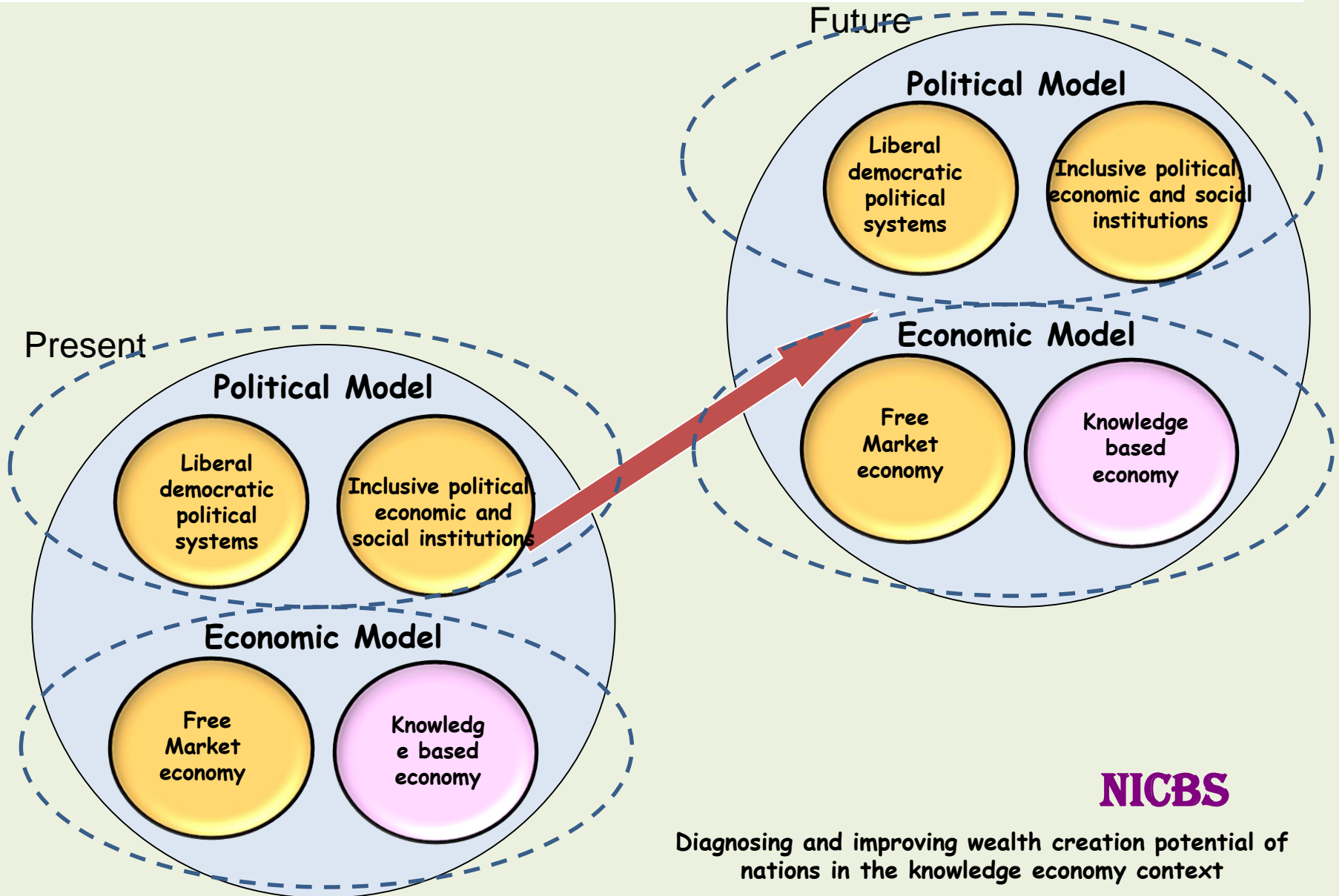
LIABILITIES

- No economic model
- Not enough competitive companies
- Not enough knowledge intensive companies.
- High rate of unemployment
- The three bubbles(financial, real estate ,and state)
- Growth without technological change
- Government budget deficit
- Government debt and private debt.
- Total debt and net debt.
- English as a second language
- Labor market reform
- State model(state bubble not yet burst)
- Innovation systems
- Public trust in politicians
- Judicial independence and efficiency.
- Wastefulness of government spending
- Corruption.(transparency international)
- Too small manufacturing sector
- Big underground economy

In summary : there is a need for transforming
Spain into a more competitive, innovative and
Knowledge intensive economy

6. Conclusions.

STRATEGY PERSPECTIVE



NICBS

Diagnosing and improving wealth creation potential of
nations in the knowledge economy context

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Conclusions

1. There is no established body of wealth creation theory in the Knowledge Economy context at the macro level .
2. The existing body of theory is mainly based on the Austrian School of Economics theory, and the contributions of other relevant theories such as Endogenous growth, New Institutional economics, Systems and Innovation, Competitiveness, and KBD .
3. Based on these bodies of theories we try to formulate principles of wealth creation in the KE context. Unfinished work.
4. There are two sets of practical methodologies or frameworks for diagnosing and improving wealth creation potential of nations in the KE context:
 - a) Competitiveness frameworks
 - b) IC community frameworks
5. NICBS methodology or framework is proposed as a more comprehensive alternative for diagnosing and improving wealth creation potential.
6. Finally strategic management of intangibles or IC at the macro level is considered the best way to improve wealth creation potential of nations.

Many thanks for your attention