Intangibles’ Revolution

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Index

1. Introduction to the approach and basic definitions.

2. Knowledge Economy. Definitions and characteristics

3. Principles and theories of wealth creation in the Knowledge Economy.
   2.1 Who creates wealth?
   2.2 How is wealth created?

4. Methodologies and frameworks for diagnosing wealth creation potential of nations in the knowledge economy.

5. Reflections on the case of Spain.

6. Conclusions.
1. Introduction to the approach and basic definitions.
Approach to the presentation

The presentation tries to answer the following fundamental questions:

1) Who creates wealth in a specific country?

2) How is wealth created?

3) How to determine the wealth creation potential of a specific country?

4) Does knowledge economy context fundamentally change rules of wealth creation?

5) Are intangible assets the main drivers of wealth creation?
Wealth definitions

• A measure of the value of all of the assets of worth owned by a person, community, company or country.

• Wealth is the 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 these 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.

Source: Adapted from various sources
Intangible Assets Definition

• “Not tangible; incapable of being touched or perceived by touch; impalpable; imperceptible.” (Webter’s dictionary definition)

• “Intangible assets are sources of future benefits which do not have a physical embodiment”. (Baruch Lev.)

• Intangible liabilities are sources of future losses which do not have a physical embodiment.
**Intellectual Capital Definitions**

IC = Intangible Assets = Knowledge Assets

IC = Knowledge that produces value

IC = Knowledge + other intangibles that produce value or are able to produce value in the future

IC = core competencies or core capabilities

IC = Human capital + Structural capital + Relational capital
Intellectual Capital Content

- **Intellectual Capital**
  - **Human Capital**: knowledge, skills, experiences and abilities of the employees
  - **Structural Capital**: R&D activities, organizational routines, procedures, systems, databases and intellectual property rights of the company
  - **Relational Capital**: All resources linked to the external relationships of the firm with customers, suppliers, R&D partners, etc.
Interrelationship among Data, Information, Knowledge and I.C.

**Data & Ideas**

**Data**

**Information**

- Organized data

**Knowledge explicit and tacit**

- Is a set of beliefs about casual relationships in the world and an organisation
  - Ron Sanchez
  - Justified personal belief towards the truth.
  - Ikujiro Nonaka

**Intellectual Capital**

- Knowledge that produces value
- Knowledge and other intangibles that produce value
Innovation Tree

PRESENT (Value Extraction)

TANGIBLE RESOURCES

Process A
Process B
Process C

Service A
Service B
Service C

INTANGIBLE RESOURCES

CORE COMPETENCIES

PROFESSIONALS’ CORE KNOWLEDGE

FUTURE (Innovation)

TANGIBLE RESOURCES

New Product M
New Product M’
New Product M”

New Process

INTANGIBLE RESOURCES

NEW INTANGIBLE RESOURCES

NEW CORE COMPETENCIES

NEW PROFESSIONALS’ CORE KNOWLEDGE

NEW CORE CAPABILITIES

NEW PROFESSIONALS’ CORE KNOWLEDGE

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2. Knowledge Economy. Definitions and characteristics.
“We are entering a new age, an age of knowledge, in which the key strategic resource necessary for prosperity has become knowledge itself – educated people, their ideas and innovation, and their entrepreneurial spirit.”

(Bloch, 1988)
The Knowledge Content of Goods and Services

- Samsung 6 Edge
- YOGA Lenovo Dual
- Apple IPAD 2 Air
- NEW BMW Series 7 2015

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The Knowledge Content of Goods and Services
The Knowledge Content of Processes and Business Models
E-commerce
Collaboration platforms
A Revolution in Corporate Productive Resources

Figure 0.1. Business investment in KBC and tangible capital, United States, 1972-2011 (% of adjusted GDP)

Note: Estimates are for private industries excluding real estate, health and education.

The advent of the Knowledge economy.

- Adam Smith
- Fritz Machlup
- T.W. Schultz
- Robert Lucas
- Carl Menger
- F. Hayek
- Ludwig von Mises
- Wilhelm Röpke
- Gary Becker
- Paul Romer
- Joseph Schumpeter

Source: Savage Ch. 1991.
Nation’s Iceberg

Physical and Financial Capital

Process Capital

Human Capital

Renewal Capital

Market Capital

Fuente: Kiernan Matthew, 1995
Entrepreneurial Excellence in the Knowledge Economy

Intellectual Capital Benchmarking Systems

By José Maria Viedma Martí and Maria do Rosário Cabrita

www.palgrave.com
Knowledge Economy Definitions

“... one in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about the most effective use and exploitation of all types of knowledge in all manner of economic activity”


“economic success is increasingly based on upon the effective utilisation of intangible assets such as knowledge, skills and innovative potential as the key resource for competitive advantage. The term "knowledge economy" is used to describe this emerging economic structure”

Economic & Social Research Council 2005

Source:
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.

(World Bank Institute. Overview 2006)
Pillars of KBE

Economic Incentive and Institutional Regime

Educated and skilled labor force

Information Infrastructure

Innovation System

Interconnected interdependent

(World Bank Institute. Overview 2006)
3. Principles and theories of wealth creation in the Knowledge Economy
The nature of human beings

Human beings strive for knowledge and its value

Curiosity and the desire for a better life are two of the most basic human instincts. Sociobiological studies of human behavior find clear and consistent evidence of spontaneous curiosity and hoarding. These are traits that arise from deep within the human genome.

The genius of a knowledge-based economy is that it lets us satisfy one of these primeval compulsions (wealth accumulation) by satisfying the other (curiosity).

Humans value ideas that improve their well-being, and that help them overcome environment constraints and other adversaries.

Markets underlay the development and spread of all innovations.

Source: Inspired by Randall Morck and Bernard Yeung
The knowledge problem: Political dimension

Three questions:

• **First**, how can a society optimize the use of knowledge?

• **Second**, how can we incentivize the creation and use of knowledge in such a way that people would be induced to create new knowledge and make their knowledge available to the others?

• **Third**, how can we produce the knowledge needed for people to coordinate their actions and produce economic and social progress?

Top-down and coercive systems of command-and-control don’t work out so well. No person and no committee can have the information necessary to coordinate millions (or billions) of people with disparate goals and fragmentary knowledge.

We find the solution of the problem in free market economy and political democratic institutions. (Liberty and the Rule of Law)

Source: Lode Cossaer and Maarten Wegge. Why Liberty, Jameson Books, Inc
Redefining Capitalism

Capitalism is under attack

The financial crisis of 2008, the stagnation of middle class in many developed countries, and rising income inequality are challenging some of our most deeply held beliefs about how a fair and well-functioning society should be organized.

Wealth or prosperity in a society is the accumulation of solutions to human problems.

Growth is an increase in the quality and availability of solutions to human problems.

Genius of capitalism: An unmatched evolutionary system for finding solutions to human problems.

Role of business: Solving problems through the process of converting great ideas into products and services that fulfill fast changing human needs.

Government role: Implement democracy as a political system. Creating laws and regulations (Rule of Law) to encourage economic activity that solves problems and discourages economic activity that creates them (A kind of Referee) thus fostering trust and cooperation in society.

Winston Churchill: "It has been said that democracy is the worst form of government except all the others that have been tried". A same statement could be applied to capitalism.

Source: Erick Beinhocker and Nick Hanauer
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.
“Conforming “ social economic and financial policy, the task of which is to protect the weak “ beyond the market” to equalize interest, set rules of the game and limit market power.
Röpke strove for and economic order of “economic humanism” that he also referred to as the “Third Way “.
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.

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

David S. Landes

Wealth creation and Nations’ Competitiveness

“Nations themselves do not compete, rather, their enterprises do”

“The role of nations in shaping the environment in which enterprises operate influence their competitiveness”

“Competition among nations can be seen in the areas of education and know-how. In a modern economy, nations do not rely only on products and services, they also compete with brains”

(Stéphane Garelli-IMD 2002)

Source: http://members.shaw.ca/compilerpress1/Anno%20Garelli%20CN%20Fundamentals.htm
Wealth creation and Nations’ Competitiveness

“It is well understood that sound fiscal and monetary policies, a trusted and efficient legal system, a stable set of democratic institutions, and progress on social conditions contribute greatly to a healthy economy.

These broader conditions provide the opportunity to create wealth but do not themselves create wealth.

*Wealth is actually created in the microeconomic level of the economy. Wealth can only be created by firms.*

More than 80 percent of the variation of GDP per capita across countries is accounted for by microeconomic fundamentals. Unless microeconomic capabilities improve, macroeconomic, political, legal, and social reforms will not bear full fruit.”

*(Michael Porter 2005)*

Source: http://www.iese.edu/en/ad/AnselmoRubiralta/Apuntes/Competitividad_en.html
# Theoretical Foundations

## Strategic Focus

### Micro Level (Enterprises)

- Resource Based View
- Knowledge Based View
- Dynamic Capabilities Based View
- Customer-Centric View

**INCAS, ICBS (OICBS, IICBS), SCBS.**

### Macro Level (Cities, Regions, Nations)

- Austrian School of Economics
- Institutional and Evolutionary Economics (I&E)
- Cultural and Social Economics (C&S)
- Knowledge Based Development (KBD)

**CADIC, CICBS, RICBS, NICBS**

- Triple Helix (TH)
- Regional Science (RS)
- Systems Theory (ST)
- Systems and Innovation (SI)
Wealth Creation in the Knowledge Economy

**Macro dimension**

- Free Market economy
- Knowledge based economy
- Liberal democratic political systems
- Inclusive political, economic and social institutions

**Micro dimension**

- Entrepreneurial excellence
- High quality people

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Theoretical principles

Who?

1. The main source of wealth of a nation is people. Knowledge and other types of intangibles are in the head of people. Without an educated, healthy and hardworking population there is no progress.

2. A free market economy with inclusive political and economic institutions is the sine qua non condition for sustainable economic and social development.

3. Wealth or poverty of a specific nation is strongly dependant on the number of competitive or excellent companies that the specific nation has.

4. Government does not create wealth directly but contributes to wealth creation when succeeds putting into practice a free market economy and inclusive democratic political, economical and social institutions (liberty, order and the rule of law).

5. An excellent or competitive company is the one that achieves long term extraordinary profits due to the fact that has a business model with sustainable competitive advantages.

6. In the knowledge economy sustainable competitive advantages are mainly based on intangibles. Consequently strategic management of intangibles or intellectual capital becomes a fundamental task.
Theoretical principles

How?

7. Business excellence is always due to good strategy formulation and superior strategy implementation.

8. Good strategy formulation and superior strategy implementation is always a human task and strongly depends on the quality of leaders, top management team, key professional people and knowledge workers.

9. In a continuous changing environment business models quickly get out-of-date and as a consequence of that, innovation in business models becomes an urgent need.

10. In any company the essential activity to perform is always innovation in the business model so it can be converted in an excellent or competitive business model.

11. Companies alone do not create wealth. They need the collaboration of other companies, universities and research institutes, financial institutions, government and other organisations and institutions and specially the existing ones in the cluster, region or nation where the company is located. In other words they need to be active part of a territorial open innovation system.

12. Strategic management of intangibles needs also to be applied to the government of clusters, regions in nations in order to build territorial open innovations systems.

1 We consider, in this particular context, that innovation in business models, encompass all types of innovations, including products, services, processes, technical, management, etc.
Wealth Creation in the KE

People

Knowledge

Intangibles

Competitive Enterprises

Innovative Enterprises

Suitable Environment
5. Methodologies and frameworks for diagnosing wealth creation potential of nations in the knowledge economy.
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.
The 12 factors of competitiveness of W.E.F.

**Basic requirements**
- Institutions
- Infrastructure
- Macroeconomic environment
- Health and primary education

**Key for factor-driven economies**

**Efficiency enhancers**
- Higher education and training
- Goods market efficiency
- Labor market efficiency
- Financial market development
- Technological readiness
- Market size

**Key for efficiency-driven economies**

**Innovation and sophistication factors**
- Business sophistication
- Innovation

**Key for innovation-driven economies**
IC community frameworks.
IC community contributions.
<table>
<thead>
<tr>
<th>Table 3.1 Variables in each type of capital proposed by this study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human capital index</strong></td>
</tr>
<tr>
<td>Skilled labor#</td>
</tr>
<tr>
<td>Employee training#</td>
</tr>
<tr>
<td>Literacy rate</td>
</tr>
<tr>
<td>Higher education enrollment</td>
</tr>
<tr>
<td>Pupil–teacher ratio</td>
</tr>
<tr>
<td>Internet subscribers</td>
</tr>
<tr>
<td>Public expenditure on education</td>
</tr>
<tr>
<td><strong>Process capital index</strong></td>
</tr>
<tr>
<td>Business competition environment#</td>
</tr>
<tr>
<td>Government efficiency#</td>
</tr>
<tr>
<td>Intellectual property rights protection#</td>
</tr>
<tr>
<td>Capital availability#</td>
</tr>
<tr>
<td>Computers in use per capita</td>
</tr>
<tr>
<td>Convenience of establishing new firms#</td>
</tr>
<tr>
<td>Mobile phone subscribers</td>
</tr>
</tbody>
</table>

Remarks: (1) Financial capital is the logarithm of GDP per capita adjusted by purchasing power parity. (2) Variables marked with # are rated qualitatively using a scale of 1–10

Navigating Intellectual Capital After the Financial Crisis

Authors: Lin, C.Y.-Y., Edvinsson, L., Chen, J., Beding, T.
NICBS framework
NICBS: Main Structure & Key Elements

NATION’S LONG-TERM ECONOMIC GROWTH POTENTIAL

Wealth creation
80%

Sustainability
20%

MCICF

Construction 12%
Industry 17%
Services 68%
Primary sector 3%

NCICP

NGO & public sector

Dynamic & systemic assessment against first-class competitors

Cluster N’s competitive environment

NATION’S HUMAN CAPITAL BASE (Knowledge infrast.)

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Wealth Creation in the Knowledge Economy

**MAIN AGENTS**

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

- High quality people

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Wealth Creation in the Knowledge Economy

Intangible Capital

- Entrepreneurial Capital
- Economic Institutions Capital
- ITT and Knowledge Capital
- Political Institutions Capital
- Social Institutions Capital
- Human Capital

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5. Reflections on the case of Spain.
Spain
Playa isla de la Toja, Galicia

Turismo rural

Turismo cultural
Corruption

• The urban corruption drags Spain to 40th place in the ranking of Transparency International.

• Global Index of Corruption Perception ranks Spain next to Poland in 40th place out of 177 countries, with a score of 59 points, according to the Global Corruption Report by Transparency International (TI).

http://www.transparency.org/whatwedo/pub/cpi_2013

Economic Freedom

• Index of Economic Freedom ranks Spain 49 out of 178 countries. Lose 21 posts in this index. Government spending, the labor market and the protection of property rights, main drags on growth.

http://www.heritage.org/index/
Spain’s corruption
## Global Competitiveness Index


### Global Competitiveness Index

<table>
<thead>
<tr>
<th>Rank (out of 144)</th>
<th>Score (1–7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCI 2014–2015</td>
<td>35</td>
</tr>
<tr>
<td>GCI 2013–2014</td>
<td>35</td>
</tr>
<tr>
<td>GCI 2012–2013</td>
<td>36</td>
</tr>
<tr>
<td>GCI 2011–2012</td>
<td>38</td>
</tr>
</tbody>
</table>

#### Basic requirements (20.0%)

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions</td>
<td>73</td>
<td>3.8</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>Macroeconomic environment</td>
<td>121</td>
<td>3.8</td>
</tr>
<tr>
<td>Health and primary education</td>
<td>34</td>
<td>6.3</td>
</tr>
</tbody>
</table>

#### Efficiency enhancers (50.0%)

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher education and training</td>
<td>29</td>
<td>5.2</td>
</tr>
<tr>
<td>Goods market efficiency</td>
<td>75</td>
<td>4.3</td>
</tr>
<tr>
<td>Labor market efficiency</td>
<td>100</td>
<td>3.9</td>
</tr>
<tr>
<td>Financial market development</td>
<td>91</td>
<td>3.8</td>
</tr>
<tr>
<td>Technological readiness</td>
<td>27</td>
<td>5.4</td>
</tr>
<tr>
<td>Market size</td>
<td>14</td>
<td>5.4</td>
</tr>
</tbody>
</table>

#### Innovation and sophistication factors (30.0%)

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business sophistication</td>
<td>38</td>
<td>4.4</td>
</tr>
<tr>
<td>Innovation</td>
<td>37</td>
<td>3.7</td>
</tr>
</tbody>
</table>

### Stage of development

- **Factor driven**
  - Institutions
  - Infrastructure
  - Macroeconomic environment
  - Health and primary education

- **Efficiency driven**
  - Higher education and training
  - Goods market efficiency
  - Labor market efficiency
  - Financial market development
  - Technological readiness
  - Market size

- **Innovation driven**
  - Institutional governance
  - Infrastructure
  - Business sophistication
  - Higher education and training
  - Innovation
  - Goods market efficiency
  - Labor market efficiency
  - Financial market development
  - Technological readiness
  - Market size

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*World Economic Forum pp.342*
WEF Global Competitiveness Index
Spain

The most problematic factors for doing business

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to financing</td>
<td>26.7</td>
</tr>
<tr>
<td>Restrictive labor regulations</td>
<td>14.4</td>
</tr>
<tr>
<td>Inefficient government bureaucracy</td>
<td>13.6</td>
</tr>
<tr>
<td>Tax rates</td>
<td>12.8</td>
</tr>
<tr>
<td>Corruption</td>
<td>9.0</td>
</tr>
<tr>
<td>Insufficient capacity to innovate</td>
<td>8.0</td>
</tr>
<tr>
<td>Tax regulations</td>
<td>6.7</td>
</tr>
<tr>
<td>Poor work ethic in national labor force</td>
<td>2.9</td>
</tr>
<tr>
<td>Inadequately educated workforce</td>
<td>2.5</td>
</tr>
<tr>
<td>Policy instability</td>
<td>1.5</td>
</tr>
<tr>
<td>Government instability/coupes</td>
<td>0.7</td>
</tr>
<tr>
<td>Inadequate supply of infrastructure</td>
<td>0.4</td>
</tr>
<tr>
<td>Poor public health</td>
<td>0.4</td>
</tr>
<tr>
<td>Inflation</td>
<td>0.3</td>
</tr>
<tr>
<td>Foreign currency regulations</td>
<td>0.2</td>
</tr>
<tr>
<td>Crime and theft</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: From the list of factors above, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

World Economic Forum pp.342
## BALANCE SHEET SPAIN

### Assets

<table>
<thead>
<tr>
<th>1st pillar: Institutions</th>
<th>Value</th>
<th>Rank/144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property rights</td>
<td>4.7</td>
<td>47</td>
</tr>
<tr>
<td>Intellectual property protection</td>
<td>4.0</td>
<td>50</td>
</tr>
<tr>
<td>Diversion of public funds</td>
<td>3.2</td>
<td>69</td>
</tr>
<tr>
<td>Irregular payments and bribes</td>
<td>4.7</td>
<td>43</td>
</tr>
<tr>
<td>Favoritism in decisions of government officials</td>
<td>3.1</td>
<td>64</td>
</tr>
<tr>
<td>Efficiency of legal framework in challenging regulatory decisions</td>
<td>3.5</td>
<td>69</td>
</tr>
<tr>
<td>Business costs of crime and violence</td>
<td>5.5</td>
<td>30</td>
</tr>
<tr>
<td>Organized crime</td>
<td>5.7</td>
<td>46</td>
</tr>
<tr>
<td>Reliability of police services</td>
<td>5.9</td>
<td>18</td>
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<tr>
<td>Ethical behavior of firms</td>
<td>4.1</td>
<td>55</td>
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<table>
<thead>
<tr>
<th>2nd pillar: Infrastructure</th>
<th>Value</th>
<th>Rank/144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of overall infrastructure</td>
<td>6.0</td>
<td>12</td>
</tr>
<tr>
<td>Quality of roads</td>
<td>6.0</td>
<td>13</td>
</tr>
<tr>
<td>Quality of railroad infrastructure</td>
<td>5.9</td>
<td>5</td>
</tr>
<tr>
<td>Quality of port infrastructure</td>
<td>5.8</td>
<td>12</td>
</tr>
<tr>
<td>Quality of air transport infrastructure</td>
<td>6.0</td>
<td>12</td>
</tr>
<tr>
<td>Available airline seat kms/week, millions*</td>
<td>36552.0</td>
<td>10</td>
</tr>
<tr>
<td>Quality of electricity supply</td>
<td>6.4</td>
<td>23</td>
</tr>
<tr>
<td>Fixed telephone lines/100pop</td>
<td>41.1</td>
<td>25</td>
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</table>

<table>
<thead>
<tr>
<th>3rd pillar: Macroeconomic environment</th>
<th>Value</th>
<th>Rank/144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation, annual % change*</td>
<td>2.4</td>
<td>1</td>
</tr>
<tr>
<td>Country credit rating, 0-100 (best)*</td>
<td>57.8</td>
<td>50</td>
</tr>
</tbody>
</table>

### Liabilities

<table>
<thead>
<tr>
<th>1st pillar: Institutions</th>
<th>Value</th>
<th>Rank/144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public trust in politicians</td>
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<td>Judicial independence</td>
<td>2.7</td>
<td>3.7</td>
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<tr>
<td>Wastefulness of government spending</td>
<td>2.6</td>
<td>113</td>
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<tr>
<td>Burden of government regulation</td>
<td>2.5</td>
<td>128</td>
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<tr>
<td>Efficiency of legal framework in settling disputes</td>
<td>3.7</td>
<td>70</td>
</tr>
<tr>
<td>Transparency of government policymaking</td>
<td>3.9</td>
<td>87</td>
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<tr>
<td>Business costs of terrorism</td>
<td>5.7</td>
<td>52</td>
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<tr>
<td>Strength of auditing and reporting standards</td>
<td>4.4</td>
<td>85</td>
</tr>
<tr>
<td>Efficacy of corporate boards</td>
<td>4.3</td>
<td>93</td>
</tr>
<tr>
<td>Protection of minority shareholders’ interests</td>
<td>4.0</td>
<td>79</td>
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<tr>
<td>Strength of investor protection, 0-10(best)*</td>
<td>5.0</td>
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<table>
<thead>
<tr>
<th>2nd pillar: Infrastructure</th>
<th>Value</th>
<th>Rank/144</th>
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<tbody>
<tr>
<td>Mobile telephone subscriptions/100 pop.*</td>
<td>109.2</td>
<td>108.3</td>
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<table>
<thead>
<tr>
<th>3rd pillar: Macroeconomic environment</th>
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<tbody>
<tr>
<td>Government budget balance, % GDP*</td>
<td>-4.3</td>
<td>-10.3</td>
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<tr>
<td>Gross national savings, % GDP*</td>
<td>24.1</td>
<td>18.6</td>
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<tr>
<td>General government debt, % GDP*</td>
<td>84.1</td>
<td>132</td>
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# Balance Sheet Spain

## Assets

<table>
<thead>
<tr>
<th>4th pillar: Health and primary education</th>
<th>Value</th>
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<tbody>
<tr>
<td>4.01 Business impact of malaria</td>
<td>NA/Apl</td>
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<tr>
<td>4.02 Malaria cases/100,000 pop.*</td>
<td>(NE)</td>
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<tr>
<td>4.03 Business impact of tuberculosis</td>
<td>6.7</td>
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<tr>
<td>4.04 Tuberculosis cases/100,000 pop.*</td>
<td>15.0</td>
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<tr>
<td>4.05 Business impact of HIV/AIDS</td>
<td>6.4</td>
<td>15</td>
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<tr>
<td>4.07 Infant mortality, deaths/1,000 live births*</td>
<td>3.5</td>
<td>20</td>
</tr>
<tr>
<td>4.08 Life expectancy, years*</td>
<td>82.3</td>
<td>5</td>
</tr>
<tr>
<td>4.09 Quality of primary education</td>
<td>4.04</td>
<td>66</td>
</tr>
<tr>
<td>4.10 Primary education enrollment, net %*</td>
<td>99.7</td>
<td>8</td>
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<table>
<thead>
<tr>
<th>5th pillar: Higher education and training</th>
<th>Value</th>
<th>Rank/144</th>
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<tbody>
<tr>
<td>5.01 Secondary education enrollment, gross %*</td>
<td>128.5</td>
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<tr>
<td>5.02 Tertiary education enrollment, gross %*</td>
<td>82.6</td>
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</tr>
<tr>
<td>5.05 Quality of management schools</td>
<td>5.8</td>
<td>4</td>
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<tr>
<td>5.06 Internet access in schools</td>
<td>4.9</td>
<td>46</td>
</tr>
<tr>
<td>5.07 Availability of research and training services</td>
<td>4.8</td>
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<table>
<thead>
<tr>
<th>6th pillar: Goods market efficiency</th>
<th>Value</th>
<th>Rank/144</th>
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<tbody>
<tr>
<td>6.01 Intensity of local competition</td>
<td>5.5</td>
<td>26</td>
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<tr>
<td>6.02 Extent of market dominance</td>
<td>4.4</td>
<td>27</td>
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<tr>
<td>6.03 Effectiveness of anti-monopoly policy</td>
<td>4.4</td>
<td>47</td>
</tr>
<tr>
<td>6.09 Prevalence of trade barriers</td>
<td>4.7</td>
<td>37</td>
</tr>
<tr>
<td>6.10 Trade tariffs, % duty*</td>
<td>0.8</td>
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<tr>
<td>6.11 Prevalence of foreign ownership</td>
<td>5.0</td>
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<tr>
<td>6.13 Burden of customs procedures</td>
<td>4.9</td>
<td>31</td>
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<tr>
<td>6.15 Degree of customer orientation</td>
<td>4.6</td>
<td>62</td>
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<tr>
<td>6.16 Buyer sophistication</td>
<td>3.5</td>
<td>63</td>
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## Liabilities

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<tr>
<th>4th pillar: Health and primary education</th>
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<tr>
<td>4.06 HIV prevalence, % adult pop.*</td>
<td>0.40</td>
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<th>5th pillar: Higher education and training</th>
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<tbody>
<tr>
<td>5.03 Quality of the educational system</td>
<td>3.6</td>
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<td>5.04 Quality of math and science education</td>
<td>3.9</td>
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<tr>
<td>5.08 Extent of staff training</td>
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<th>6th pillar: Goods market efficiency</th>
<th>Value</th>
<th>Rank/144</th>
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<tr>
<td>6.04 Effect of taxation on incentives to invest</td>
<td>3.1</td>
<td>118</td>
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<tr>
<td>6.05 Total tax rate, % profits*</td>
<td>38.7</td>
<td>74</td>
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<tr>
<td>6.06 No procedures to start a business*</td>
<td>10</td>
<td>116</td>
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<tr>
<td>6.07 No days to start a business*</td>
<td>28</td>
<td>105</td>
</tr>
<tr>
<td>6.08 Agricultural policy costs</td>
<td>3.6</td>
<td>101</td>
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<tr>
<td>6.12 Business impact of rules on FDI</td>
<td>4.3</td>
<td>93</td>
</tr>
<tr>
<td>6.14 Imports as a percentage of GDP*</td>
<td>31.2</td>
<td>121</td>
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<tr>
<td>Assets</td>
<td>Liabilities</td>
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<tr>
<td><strong>7th pillar: Labor market efficiency</strong></td>
<td><strong>7th pillar: Labor market efficiency</strong></td>
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<tr>
<td>7.04 Redundancy costs, weeks of salary*</td>
<td>7.01 Cooperation in labor-employer relations</td>
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<td></td>
<td>7.02 Flexibility of wage determination</td>
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<td>7.03 Hiring and firing practices</td>
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<td>7.05 Effect of taxation on incentives to work</td>
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<td>7.06 Pay and productivity</td>
<td></td>
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<td></td>
<td>7.08 Country capacity to retain talent</td>
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<tr>
<td></td>
<td>7.09 Country capacity to attract talent</td>
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<tr>
<td><strong>8th pillar: Financial market development</strong></td>
<td><strong>8th pillar: Financial market development</strong></td>
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<tr>
<td>8.01 Availability of financial services</td>
<td>8.03 Financing through local equity market</td>
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<td>8.02 Affordability of financial services</td>
<td>8.04 Ease of access to loans</td>
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<tr>
<td>8.08 Legal rights index, 0–10 (best)*</td>
<td>8.05 Venture capital availability</td>
<td></td>
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<tr>
<td></td>
<td>8.06 Soundness of banks</td>
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<td></td>
<td>8.07 Regulation of securities exchanges</td>
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<tr>
<td><strong>9th pillar: Technological readiness</strong></td>
<td><strong>9th pillar: Technological readiness</strong></td>
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<tr>
<td>9.01 Availability of latest technologies</td>
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<tr>
<td>9.02 Firm-level technology absorption</td>
<td></td>
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<tr>
<td>9.03 FDI and technology transfer</td>
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<tr>
<td>9.04 Individuals using Internet, %*</td>
<td></td>
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</tr>
<tr>
<td>9.05 Broadband Internet subscriptions/100 pop.*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.06 Intl Internet bandwidth, kb/s per user*</td>
<td></td>
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<tr>
<td>9.07 Mobile broadband subscriptions/100 pop.*</td>
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<tr>
<td><strong>10th pillar: Market size</strong></td>
<td><strong>10th pillar: Market size</strong></td>
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<tr>
<td>10.01 Domestic market size index, 1–7 (best)*</td>
<td>10.04 Exports as a percentage of GDP*</td>
<td></td>
</tr>
<tr>
<td>10.02 Foreign market size index, 1–7 (best)*</td>
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<tr>
<td>10.03 GDP (PPP$billions)*</td>
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### Assets

<table>
<thead>
<tr>
<th>11th pillar: Business sophistication</th>
<th>Value</th>
<th>Rank</th>
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<tbody>
<tr>
<td>11.01 Local supplier quantity</td>
<td>5.3</td>
<td>19</td>
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<tr>
<td>11.02 Local supplier quality</td>
<td>5.1</td>
<td>26</td>
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<tr>
<td>11.03 State of cluster development</td>
<td>4.2</td>
<td>42</td>
</tr>
<tr>
<td>11.04 Nature of competitive advantage</td>
<td>4.2</td>
<td>33</td>
</tr>
<tr>
<td>11.05 Value chain breadth</td>
<td>4.7</td>
<td>23</td>
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<tr>
<td>11.06 Control of international distribution</td>
<td>4.3</td>
<td>45</td>
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<tr>
<td>11.07 Production process sophistication</td>
<td>4.5</td>
<td>36</td>
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<tr>
<td>11.08 Extent of marketing</td>
<td>4.7</td>
<td>36</td>
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<table>
<thead>
<tr>
<th>12th pillar: Innovation</th>
<th>Value</th>
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<tr>
<td>12.01 Capacity for innovation</td>
<td>3.7</td>
<td>57</td>
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<tr>
<td>12.02 Quality of scientific research institutions</td>
<td>4.6</td>
<td>36</td>
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<tr>
<td>12.03 Company spending on R&amp;D</td>
<td>3.4</td>
<td>50</td>
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<td>12.04 University-industry collaboration in R&amp;D</td>
<td>4.0</td>
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<tr>
<td>12.06 Availability of scientists and engineers</td>
<td>5.2</td>
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<tr>
<td>12.07 PCT patents, applications/million pop.*</td>
<td>39.2</td>
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### Liabilities

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<tr>
<th>11th pillar: Business sophistication</th>
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<tr>
<td>11.09 Willingness to delegate authority</td>
<td>3.8</td>
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<thead>
<tr>
<th>12th pillar: Innovation</th>
<th>Value</th>
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<tr>
<td>12.05 Gov't procurement of advanced tech products</td>
<td>3.2</td>
<td>102</td>
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# THE HUMAN CAPITAL INDEX: COUNTRY PROFIE

## Spain

<table>
<thead>
<tr>
<th>Human Capital Index 2013</th>
<th>Rank/122</th>
<th>Score</th>
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<tr>
<td>Pillar 1: Education</td>
<td>31</td>
<td>0.590</td>
</tr>
<tr>
<td>Pillar 2: Health and wellness</td>
<td>12</td>
<td>0.778</td>
</tr>
<tr>
<td>Pillar 3: Workforce and employment</td>
<td>70</td>
<td>-0.185</td>
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<tr>
<td>Pillar 4: Enabling environment</td>
<td>28</td>
<td>0.679</td>
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**Key Indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Total population (1,000s)</td>
<td>46,182.0</td>
</tr>
<tr>
<td>Median age of population</td>
<td>40</td>
</tr>
<tr>
<td>GDP per capita PPP (constant 2005, international $)</td>
<td>26,545</td>
</tr>
<tr>
<td>GDP growth (annual %)</td>
<td>-1.4</td>
</tr>
</tbody>
</table>
**IBEX 35**

**Telecommunications**
- Telecinco
- Telefónica
- Amadeus

**Construction infrastructure**
- Abertis
- Acciona
- ACS
- Ferrovial
- Sacyr
- OHL

**Financial services**
- BBVA
- Banco de Sabadell
- Banco Popular
- Banco Santander
- Bankinter
- BME
- MAPFRE
- CaixaBank

**Engineering**
- Abengoa
- Acerinox
- Técnicas Reunidas
- Gamesa
- Indra
- Arcelor Mittal

**Energy/renewal energy**
- Gas Natural
- Iberdrola
- Red Eléctrica
- Repsol
- Enagás
- Endesa

**Others**
- Ebro Foods
- Grifols
- Inditex
- Día
Changing the economic model.

FROM A MODEL BASED ON THE CONSTRUCTION, TOURISM AND SERVICES TO A MORE KNOWLEDGE- INTENSIVE MODEL.

FEATURES OF THIS NEW MODEL: very selective agriculture, very important industry with low environmental costs focused on exports because their advanced technology, not too much construction, and especially many more services of high value added.

CURRENT MODEL FEATURES: weak primary production (3% of GDP), construction hypertrophy (12% of GDP), industry & energy production (17% of GDP) that basically focuses its exports on the car and its parts, but based on models of second technological level. Finally services concentrated around tourism and the public sector (68% of GDP).
Spain

M. Rajoy
S. Saez de Santamaría
De Guindos
Montoro
F. Baños

- Construction
- Primary Sector
- Services
- Industry

Population
40,000,000
5,500,000
1,500,000
47,000,000

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Spain

C, A, S, I
Population: 47 millions

17 autonomous regions

© José María Viedma Martí 2015
Spain

Population: 47 millions
17 autonomous regions

Real state bubble

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Spain

Current account balance deficit

2008: 1,667,865 ltd companies
2011: 1,455,255 ltd companies
(-20%)

Underground Economy 20-25% GDP
23% Unemployment (49.6% youth unemployment)

Foreign debt = ± 1,670,000 millions €
Total debt = ± 3,300,000 Millions €
Net external debt = 970,000M € (90% GDP)

Innovative companies = 13,000 (should be 40,000)
R+D Investment = 7 billions (should be 14 billions)

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Spain

M. Rajoy
S. Saez de Santamaría
De Guindos
Montoro
F. Baños

Supervises

Population: 47 millions
17 autonomous regions
Real State bubble
-20% limited companies
Innovative companies 13 mil (40mil)
R+D Investment 7billions (14 billions)
Underground economy 20-25% GDP
26% Unemployment (55% Youth unemployment)
Foreign debt ± 1.670.000 millions €=
Total debt 4.000.000 Millions€

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Spain

M. Rajoy
S. Saez de Santamaria
De Guindos
Montoro
F. Baños

Supervises

Current account balance
deficit

Public debt and deficit

Debt and deficit

Energy System

Educational System

Financial System

Justice

Retirement Pensions

C A S I

Population: 47 millions
17 autonomous regions
Real State bubble
20% limited companies
Innovative companies 13 mil (40mil)
R+D Investment 7 billions (14 billions)
Underground economy 20-25% PIB
26% Unemployment (55% Youth unemployment)
Foreign debt ± 1.670.000 millions €=
Total debt 4.000.000 Millions €

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In summary: there is a need for transforming Spain into a more competitive, innovative and knowledge-intensive economy.
6. Conclusions.
STRATEGY PERSPECTIVE

Present

Political Model
- Liberal democratic political systems
- Inclusive political, economic and social institutions

Economic Model
- Free Market economy
- Knowledge based economy

Future

Political Model
- Liberal democratic political systems
- Inclusive political, economic and social institutions

Economic Model
- Free Market economy
- Knowledge based economy

NICBS
Diagnosing and improving wealth creation potential of nations in the knowledge economy context
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Strategic Management of intangibles at the macro level

Economic and Political Model

Good strategy formulation

Very good strategy implementation

Fundamentally Based on

Core Competencies
Core Capabilities
Intellectual Capital

Methodologies and frameworks more frequently used

Formulation

SWOT
NICBS

Implementation

Competitiveness frameworks IMD, WEF
IC Community frameworks

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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 in mainly based on the Austrian School of Economics theory, and the contributions of other relevant theories such as endogenous growth, competitiveness, and KBD (I&E,C&S,ST,SI,TH,RS).

3. Based on these bodies of theories the paper tries 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 suitable alternative for diagnosing and improving wealth creation potential, because is focused on strategy formulation and is mainly inspired on the principles of wealth creation that have been mentioned in point 3.

6. Finally strategic management of intangibles or IC at the macro level is considered the best way to improve wealth creation potential of nations.