The recovery of productivity in Spain: is it sustainable?

Miguel Cardoso
BBVA Research | Head Economist, Spain
Main messages

1. **Productivity growth has been low** in Spain as growth came through factor accumulation.

2. Literature points towards **several key factors to explain this**, from the sector allocation of resources, to labor market regulation, to lack of competition.

3. Recent trends are due to temporary factors, but **reforms might insure that most of the gains are permanent**.
The recovery of productivity in Spain: is it sustainable?

Presentation is a summary of several papers


2. Cardoso M. (2012), *25 años de crecimiento económico, ¿toca ahora austeridad?*, Desapalancamiento y Crecimiento (Forthcoming)

Two significant shocks

**Spain: Synthetic real interest rate (ex-post) on credit transactions**

Source: BBVA Research

<table>
<thead>
<tr>
<th>Period</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-1999</td>
<td>8%</td>
</tr>
<tr>
<td>2000-2009</td>
<td>1%</td>
</tr>
<tr>
<td>2010-2020</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Spain and EMU: working age population (contribution to GDP growth)**

Source: BBVA Research

<table>
<thead>
<tr>
<th>Period</th>
<th>EMU</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991-2000</td>
<td>0.5%</td>
<td>0.8%</td>
</tr>
<tr>
<td>2001-2010</td>
<td>0.3%</td>
<td>0.6%</td>
</tr>
<tr>
<td>2011-2020</td>
<td>0.0%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
The recovery of productivity in Spain: is it sustainable?

Growth accounting shows low productivity growth,...

In the period previous to the crisis there were two shocks: historically cheap credit and significant immigration flows.

Growth was explained by factor accumulation (capital and labor), and not by productivity increases.
... and lack of convergence

Spain: Productivity growth (1995=100)
Source: BBVA Research

Not only was productivity growth historically low, it was also low by international standards.

This is normally viewed as one of the reasons behind the accumulation of imbalances in countries like Spain or Italy.
Causes of low productivity growth:
1. A reliance on low productivity sectors

**Domestic Investment Rate**
(GFCF as percentage of GDP)
Source: BBVA Research based on INE and AMECO

**Investment share of GDP (%)**
Source: BBVA Research

<table>
<thead>
<tr>
<th>Year</th>
<th>Housing</th>
<th>Other Construction</th>
<th>Capital goods and others</th>
<th>Total investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>4.7</td>
<td>6.8</td>
<td>10.3</td>
<td>21.8</td>
</tr>
<tr>
<td>2007</td>
<td>9.2</td>
<td>8.6</td>
<td>12.9</td>
<td>30.7</td>
</tr>
<tr>
<td>Var (97-07)</td>
<td>4.5</td>
<td>1.8</td>
<td>2.5</td>
<td>8.9</td>
</tr>
<tr>
<td>2010</td>
<td>4.7</td>
<td>8.1</td>
<td>9.7</td>
<td>22.5</td>
</tr>
<tr>
<td>Var (07-10)</td>
<td>-4.5</td>
<td>-0.6</td>
<td>-3.1</td>
<td>-8.2</td>
</tr>
</tbody>
</table>
Causes of low productivity growth:
1. A reliance on low productivity sectors

At the peak, a third of investment flows went towards the residential construction sector.

Productivity growth of residential sector lies in part at the bottom of explaining low productivity in Spain.
The recovery of productivity in Spain: is it sustainable?

Causes of low productivity growth:
1. A reliance on low productivity sectors

Human capital and R&D
Source: BBVA Research based on OCDE

Lack of investment in R&D

Human capital and R&D activities are deeply correlated. Human capital is the basic input of R&D activities.

Again, huge differences in R&D investment across European countries.

Coordination of national and European policies to favour innovation in areas in which each country has its own comparative advantage.
Causes of low productivity growth: 2. An overreliance on temporary workers

The temporary work share in Spain is the highest in the OECD.

Negative effects on productivity due to a) reduced company training, b) lower geographic mobility, c) lower rotation of workers.

It also means an overreliance on them to do adjustments.
The recovery of productivity in Spain: is it sustainable?

Causes of low productivity growth:
3. A rigid labor market and lack of competition

Inflation Accounting. Euro Area-12 Based on GDP Deflator, 1999-2011 (contributions to change) (annual average growth rates in percentage)
Source: BBVA Research based on AMECO

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Wages</th>
<th>Productivity</th>
<th>Markup</th>
<th>Taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA-12</td>
<td>1.71</td>
<td>1.14</td>
<td>0.31</td>
<td>0.68</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Deviations from EA-12 average

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>Wages</th>
<th>Productivity</th>
<th>Markup</th>
<th>Taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>-0.93</td>
<td>-0.47</td>
<td>0.10</td>
<td>-0.38</td>
<td>0.01</td>
</tr>
<tr>
<td>France</td>
<td>-0.04</td>
<td>0.23</td>
<td>0.02</td>
<td>-0.21</td>
<td>-0.04</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.30</td>
<td>0.38</td>
<td>0.38</td>
<td>0.29</td>
<td>0.01</td>
</tr>
<tr>
<td>Italy</td>
<td>0.41</td>
<td>-0.07</td>
<td>-0.29</td>
<td>0.17</td>
<td>0.01</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.73</td>
<td>0.42</td>
<td>-0.07</td>
<td>0.09</td>
<td>0.15</td>
</tr>
<tr>
<td>Greece</td>
<td>1.33</td>
<td>0.12</td>
<td>-0.10</td>
<td>0.94</td>
<td>0.17</td>
</tr>
<tr>
<td>Spain</td>
<td>1.28</td>
<td>0.39</td>
<td>0.00</td>
<td>0.83</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Most of competitiveness losses in Spain did not come from productivity losses, but from higher wages and markups

A rigid wage setting system

Lack of exposure to competition, both inside and outside
The recovery of productivity in Spain: is it sustainable?

Causes of low productivity growth: 3. A rigid labor market and lack of competition

Spain: real labour compensation vs labour productivity. Annual growth distribution
(21 industries, 25 years)
(Source: BBVA Research based on EU KLEMS BBVA Research based on INE)

- A very low share of workers’s working conditions are covered by firm agreements (15%)
- Wage determination is centralized but very few are unionized
- Internal factors do not weigh enough on salary conditions, preventing efficiency during crisis

Lack of flexibility for firms
Causes of low productivity growth: 3. A rigid labor market and lack of competition

**Regulation and productivity growth in retail trade**
Average 1995-2007

**Regulation and productivity growth in professional services**
Average 1995-2007
The recovery of productivity in Spain: is it sustainable?

Causes of low productivity growth: 3. A rigid labor market and lack of competition

Only 12% of Spanish firms exported goods and 9% services not related to tourism over the period 2001-2011.

The productivity threshold to be able to export is considerably above the average of the sector.

Behind the low percentage of exporting firms lies a self selection effect.

A notable degree of concentration: the 1% of firms with higher export volume represents around 70% of all exports (UK, France: 40%, Italy 30%).

Lack of external competition

Only 12% of Spanish firms exported goods and 9% services not related to tourism over the period 2001-2011.

Proportion of exports accounted for top exporters (%)

Source: BBVA Research based on Bank of Spain and Meyer and Ottaviano.

Note: Germany, France, UK, and Italy data are for 2003; Spain.
Causes of low productivity growth: 4. Lack of size

Company size and productivity
(Correlation: 0.7)
Source: BBVA Research

Labour productivity per hour worked in 2008 (U.S.=100)

Productivity is low in small firms, which account for a large part of employment and output.

Economies of scale seem to be important in some sectors, and to export.

Other determinants of productivity seem to be correlated with size.
The recovery of productivity in Spain: is it sustainable?

Causes of low productivity growth:
4. Lack of size

Features of exporting firms in comparison with non-exporting firms in the year
Manufacturing. Ratio of medians, average 1990-2010
Source: BBVA Research based on ESEE, Fundación SEPI

Productivity is low in small firms, which account for a large part of employment and output

Economies of scale seem to be important in some sectors, and to export

Other determinants of productivity seem to be correlated with size

Note: Pool of total observations. * Ratio of means of the corresponding distribution.
The recovery of productivity in Spain: is it sustainable?

Causes of low productivity growth: 5. Human capital

Schooling of adult population and GDP per WAP
Source: de la Fuente and Doménech (2012)

Human capital is one of the main determinants of GDP per working-age population and other economic variables (U, R&D, etc.)

Huge differences among European countries

Increasing human capital levels in some countries will be a very slow process (demographics) -> on-the-job training (labour markets reforms)
Nonetheless, productivity has gone up after the crisis.

**Spanish productivity vs European average (GDP per worker)**

Included countries: Austria, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain & United Kingdom

- Productivity has increased substantially over the crisis.
- Spain is where productivity has increased the most in Europe.
- Most of the adjustment has come from job destruction.
This might be the result of non efficient ways to adapt
The recovery of productivity in Spain: is it sustainable?

But there are reasons to think some is permanent

**Composition and growth of real exports by product**
**average 2010-2012 (%) yoy**
Source: BBVA Research from MINECO

- Oil refining, electronic components, others: 38%
- Electric engines, chemical products, Beverages, others: 33%
- Basic chemistry, mechanical Equipment, textiles: 28%
- Agriculture, other machinery: 23%
- Motor vehicles, pharmaceuticals: 18%
- Furniture, Motorcycles: 13%
- Others: 8%
- Others: 3%
- Others: -2%
- Others: -7%

Recovery has been strong, ....

..., and diversified enough.
The recovery of productivity in Spain: is it sustainable?

But there are reasons to think some is permanent

**Spain: response to labour market reform**

(% deviation from trend)

Source: BBVA Research

**Labor market reform simulation in REMS**

- REMS is a DGE of a small open economy within a monetary union, calibrated to fit moments of Spanish economy
- Key features of reform: lower dismissal costs, reduce negotiating power of unions, better active labor market policies
- The model delivers on impact a strong improvement in productivity

But there are reasons to think some is permanent
Main messages

1. **Productivity growth has been low** in Spain as growth came through factor accumulation.

2. Literature points towards **several key factors to explain this**, from the sector allocation of resources, to labor market regulation, to lack of competition.

3. Recent trends are due to temporary factors, but **reforms might insure that most of the gains are permanent**.
The recovery of productivity in Spain: is it sustainable?

Miguel Cardoso
BBVA Research | Head Economist, Spain