

# ECONOMIC FORECASTING DURING AND AFTER CORONA

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**SUERF BAFFI BOCCONI E-LECTURES**

September 10, 2020





- 1. What challenges does the corona crisis bring for forecasters?**
- 2. How to deal with fundamental uncertainty arising from the pandemic?**
- 3. Role of scenarios**
  4. Which types of shocks are we dealing with?
  5. Implications for estimates of potential output and for inflation forecasting
  6. How to link epidemiological and economic models?
  7. Real-time economic indicators
- 8. Role of sectoral analysis**
  9. How to link firms' financial analysis, banking sector analysis and conjunctural analysis/forecasting?

## OUTLINE

- 1. What challenges does the corona crisis bring for forecasters?**
2. How to deal with fundamental uncertainty arising from the pandemic?
3. Role of scenarios (and of sectoral and regional analysis)

# 1. What challenges does the corona crisis bring for forecasters?

**UNCERTAINTY**

# 1. What challenges does the corona crisis bring for forecasters?

The pandemic added **unprecedented EXTRA UNCERTAINTY** to virtually all economic and financial dimensions

High UNCERTAINTY context → ROBUST methods and tools

Two fundamental dimensions of robustness are called for, in my view:

1. Robust modelling&forecasting toolkit
2. Robust communication

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Each crisis/new situation will have different drivers and transmission mechanisms

- Resorting to new and different modelling and forecasting tools each time runs the risk of disregarding / under-utilizing the useful know-how accumulated,
- Better make your modelling&forecasting toolkit able to **incorporate alternative sources** of uncertainty / shocks / information
- Integrate unconventional sources of information in the otherwise more conventional tools for forecasting: **Robust modelling & forecasting toolkit**
- Example:
  - COVID-19 liquidity shortfall risk** → Bringing it into the macroeconomic projections and estimating the implications of macro projections scenarios for firms' liquidity needs

### EXAMPLE: COVID-19 LIQUIDITY SHORTFALL RISK

#### Firm-level financial analysis:

➤ *Blanco, R., S. Mayordomo, A. Menéndez, M. Mulino (2020) “Spanish non-financial corporations’ liquidity needs and solvency after the COVID-19 shock”, Banco de España Occ.Paper 2020.*

**Bringing this type of firm-level financial analysis to the macro projections, in particular into the first ones published by BdE in COVID-19 times:**

➤ *“Reference macroeconomic scenarios for the Spanish economy after Covid-19”, Banco de España Analytical Article, 20/4/2020.*



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Use complementary sources of Spanish firm-level data:

- Integrated Central Balance Sheet Data Office Survey provides financial statements and earnings reports for around 500,000 Spanish non-financial firms
- Central Credit Register provides analogous information about the loans they have
- Central Companies Directory provides the elevation factors to extrapolate to firms’ population

Estimate what Spanish non-financial corporations’ liquidity needs would be in 2020 q1-q4:

- From operating activity (considering access to ERTE), from interest payments and from investment in fixed assets, for all 500,000 firms
- under three alternative macroeconomic scenarios (June 2020 projections): declines in GDP in 2020 of 9%, 11.6% and 15.1%, respectively.

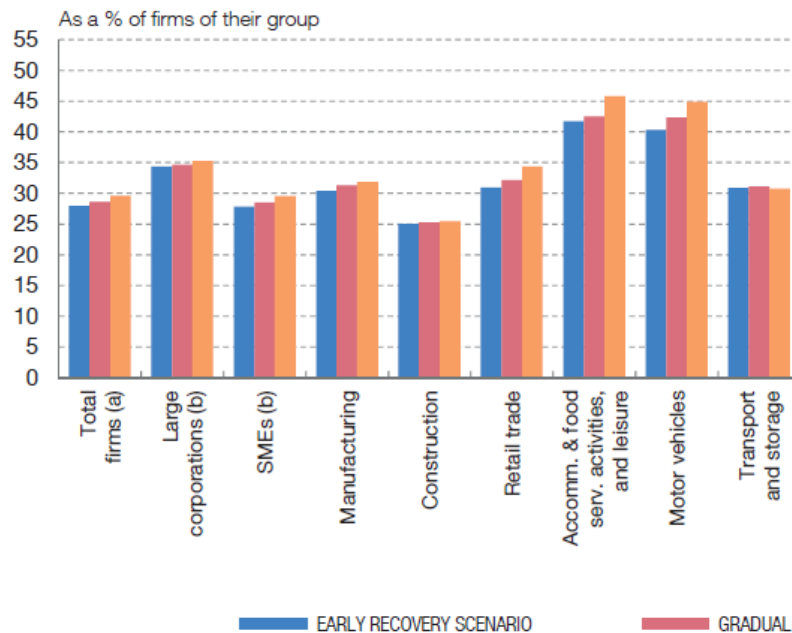
## 2. How to deal with fundamental uncertainty arising from the pandemic? Robust modelling & forecasting toolkit

Chart 4

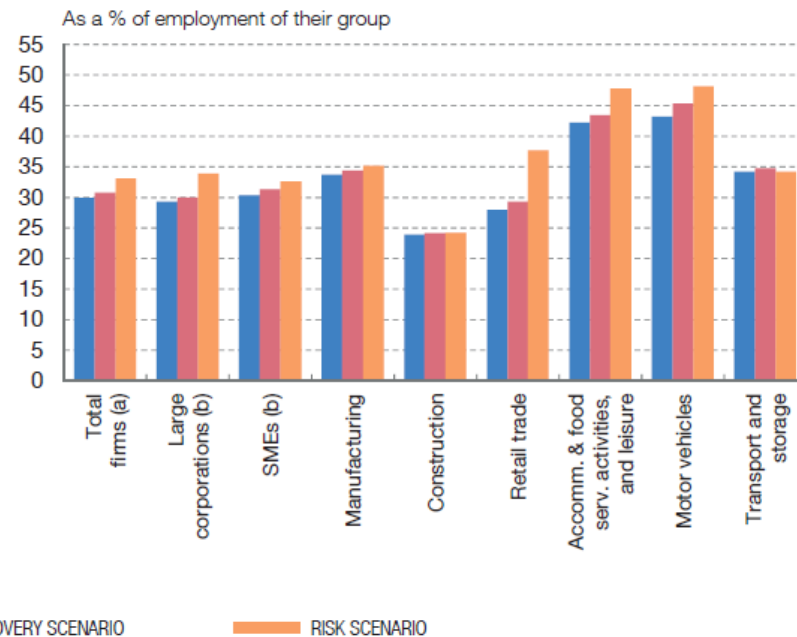
**ALMOST 30% OF SPANISH FIRMS ARE EXPECTED TO CONTINUE POSTING LIQUIDITY SHORTFALLS BETWEEN APRIL AND DECEMBER, EVEN WERE THEY TO FULLY EXHAUST THEIR LIQUID ASSETS AND CREDIT LINES**

A portion of firms' liquidity needs could be covered through the resort both to their liquid assets and to the undrawn amounts of their credit lines. However, even if they fully exhausted these resources, 28-30% of companies, with a weight in employment of somewhat over 30%, would continue posting liquidity shortfalls.

1 NUMBER OF FIRMS WITH LIQUIDITY SHORTFALLS ONCE THEIR CREDIT LINES AND LIQUID ASSETS HAVE BEEN EXHAUSTED



2 WEIGHT IN EMPLOYMENT OF FIRMS WITH LIQUIDITY SHORTFALLS ONCE THEIR CREDIT LINES AND LIQUID ASSETS ARE EXHAUSTED



SOURCE: Banco de España.

a Excludes holding companies and financial services.

b The definition of sizes is in line with European Commission Recommendation 2003/361/EC.

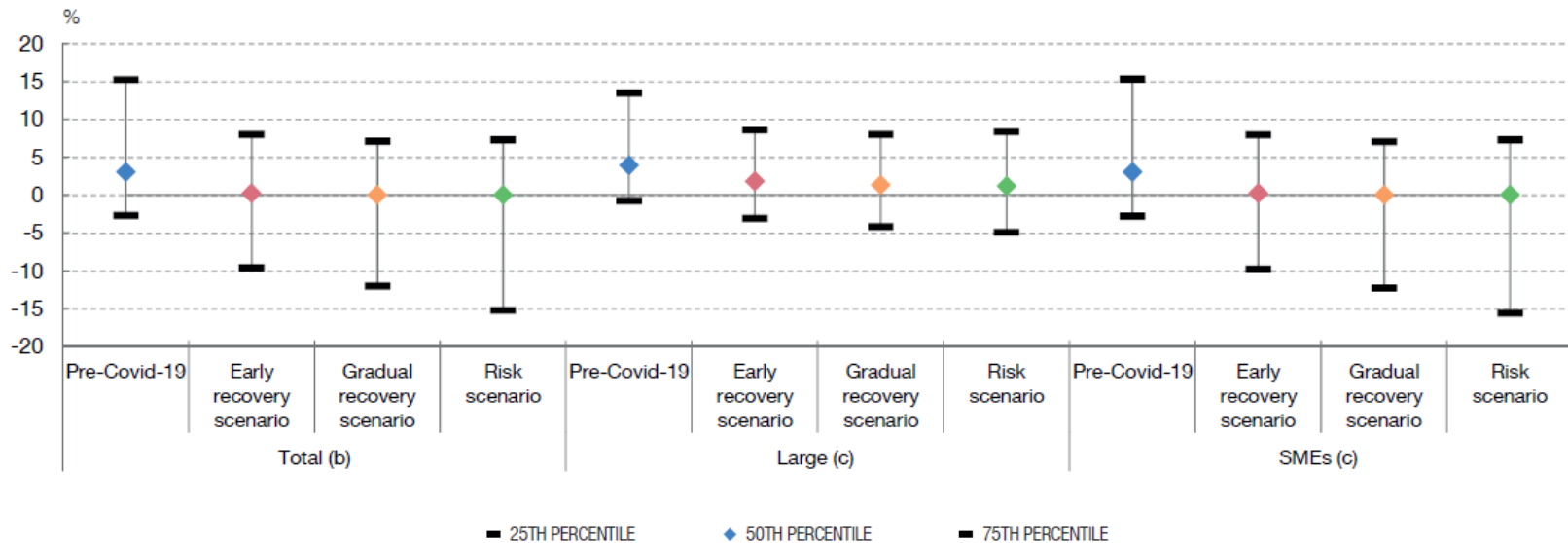
## 2. How to deal with fundamental uncertainty arising from the pandemic? Robust modelling & forecasting toolkit

Chart 5

### FIRMS' PROFITABILITY IS EXPECTED TO DECLINE ACROSS THE BOARD IN 2020

As a consequence of the crisis caused by the pandemic, return on assets is expected to decline across the board, but most particularly among SMEs and firms in the tourism and leisure and motor vehicle sectors. Yet despite this sharp fall, approximately half of all firms are expected to maintain a positive return on assets.

1 DISTRIBUTION OF ROA. BREAKDOWN BY SIZE (a)



SOURCE: Banco de España.

a ROA = (Ordinary net profit + Financial costs) / Assets net of non-interest-bearing borrowing).

b Excludes holding companies and financial services sector firms.

c Definition of size in line with European Commission Recommendation 2003/361/EC.

## 2. How to deal with fundamental uncertainty arising from the pandemic? Robust modelling & forecasting toolkit

**Bringing this type of firm-level financial analysis to the macro projections**, in particular into the first ones published by BdE in COVID-19 times:

➤ *“Reference macroeconomic scenarios for the Spanish economy after Covid-19”, Banco de España Analytical Article, 20/4/2020.*

Liquidity shortfall risk as **extra shock to investment and employment in pessimistic scenarios**:

- Using individual company data as before, with hypotheses regarding the behaviour of their costs and income, the limitations on activity in its and the possibility of using ERTes,
- determine the weight in the value-added of each sector of the **firms that would experience liquidity shortages** that cannot be covered by resorting to liquid assets, pre-existing credit lines or the new credit line obtained through the public guarantee programme: they will not be able to make any new investment → calibrate new **shock to private investment**.
- assume that where the liquidity shortfall exceeds 20% of a company's capital it will suspend its activity, leading to the loss of its employment → calibrate new **shock to private employment**

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3. **Role of scenarios (and of sectoral and regional analysis)**

### 3. How to deal with fundamental uncertainty arising from the pandemic? Role of scenarios

Communication of the forecasts needs to realistically transmit the degree of uncertainty around them.

Highly uncertain times need careful and effective communication of the forecasts

- Baseline projections or most likely scenario no longer as informative
- Narrow confidence bands based on historical forecast errors no longer as informative
- **“Robust communication”**: Convey your sense of uncertainty giving a **range of likely scenarios** and explaining carefully their conditioning assumptions, transmission mechanisms and perceived likelihood
- Example 1: Eurosystem macroeconomic projections published on 4 June, 2020
- Example 2: Banco de España macroeconomic projections published on 20 April, 2020

### 3. How to deal with fundamental uncertainty arising from the pandemic? Role of scenarios

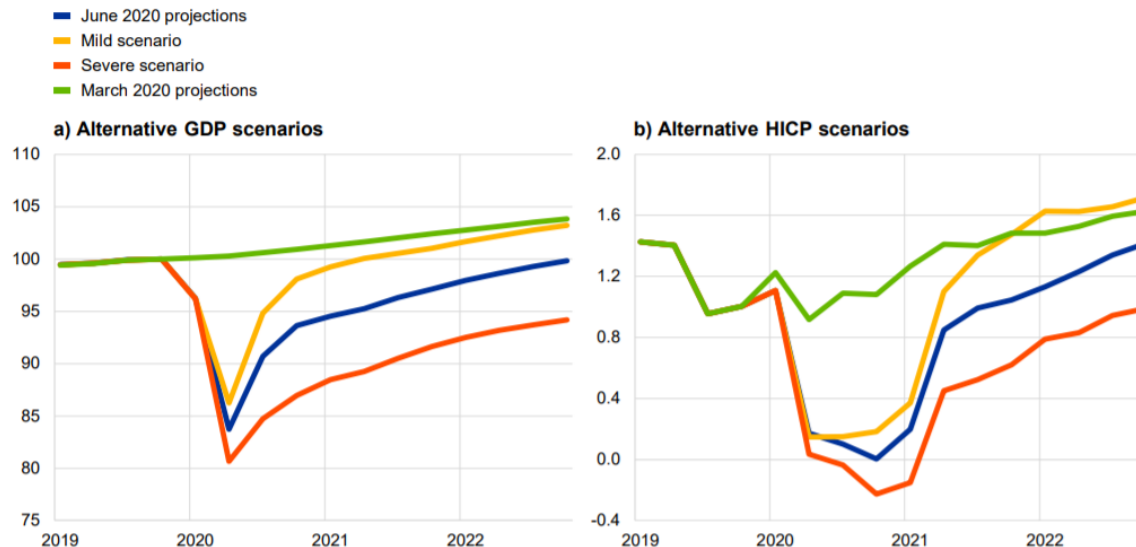
#### EXAMPLE 1:

#### EUROSYSTEM STAFF MACROECONOMIC PROJECTIONS FOR THE EURO AREA, JUNE 2020 (PUBLISHED 4 JUNE 2020):

“The high uncertainty surrounding the impact of the COVID-19 pandemic on the euro area economic outlook warrants an analysis based on alternative scenarios ... These scenarios can be seen as providing an illustrative range around the baseline projection.”

#### Alternative scenarios for real GDP and HICP inflation in the euro area

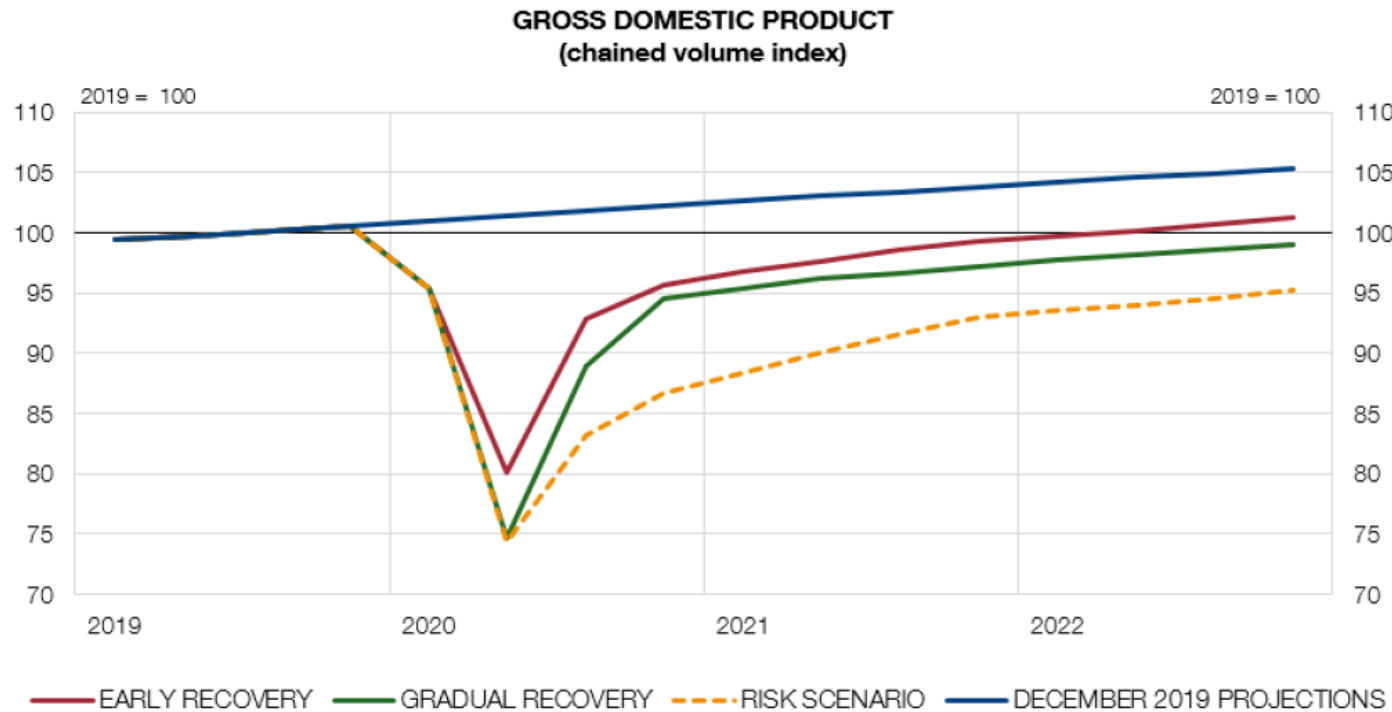
(index: Q4 2019 = 100 (left-hand chart); year-on-year rate (right-hand chart))



### 3. How to deal with fundamental uncertainty arising from the pandemic? Role of scenarios

#### EXAMPLE 1:

#### EUROSYSTEM STAFF MACROECONOMIC PROJECTIONS JUNE 2020: PROJECTIONS FOR THE SPANISH ECONOMY





### 3. How to deal with fundamental uncertainty arising from the pandemic? Role of sectoral analysis

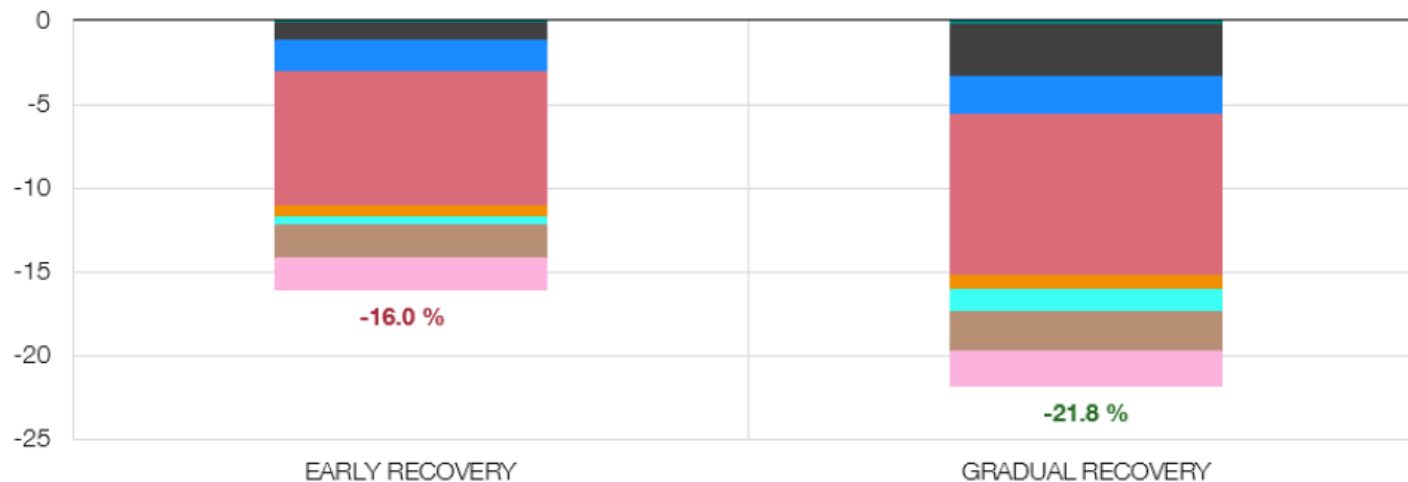
#### EXAMPLE 1:

#### EUROSYSTEM STAFF MACROECONOMIC PROJECTIONS JUNE 2020: SPANISH ECONOMY

**AN UNPRECEDENTED DECLINE IN GDP IS EXPECTED IN Q2, FOLLOWED BY A RECOVERY IN THE SECOND HALF OF THE YEAR**

- **The calibration of the decline in GDP in this quarter takes into account heterogeneity by sector of activity and the lockdown-easing phase by province.**
- **The effect on activity is uneven across regions insofar as the productive structure differs** (see Prades and Tello, 2020).

FALL IN GDP IN Q2: CONTRIBUTIONS BY SECTORS (PP)



■ PRIMARY SECTOR

■ CONSTRUCTION

■ INFORMATION AND COMMUNICATION

■ PROFESSIONAL, SCIENTIFIC AND OTHER

■ INDUSTRIAL SECTOR

■ TRADE, ACCOMM. & FOOD SERVICES & TRANSP.

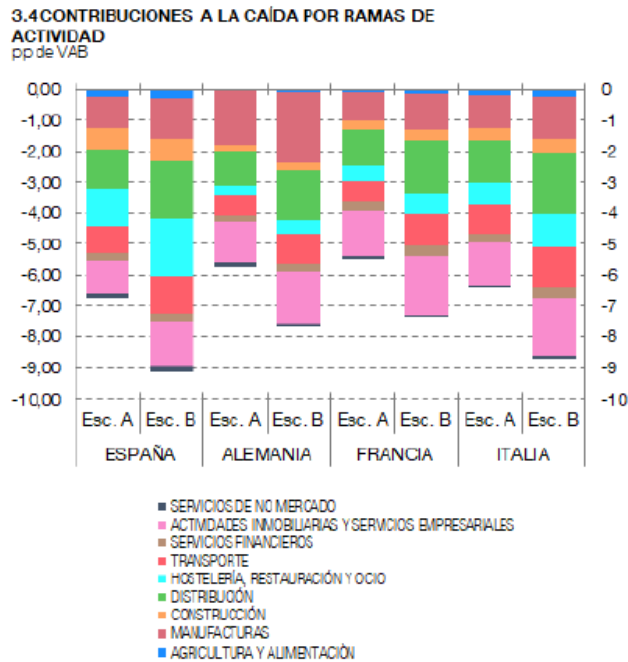
■ REAL ESTATE

■ RECREATIONAL AND OTHER SERVICES

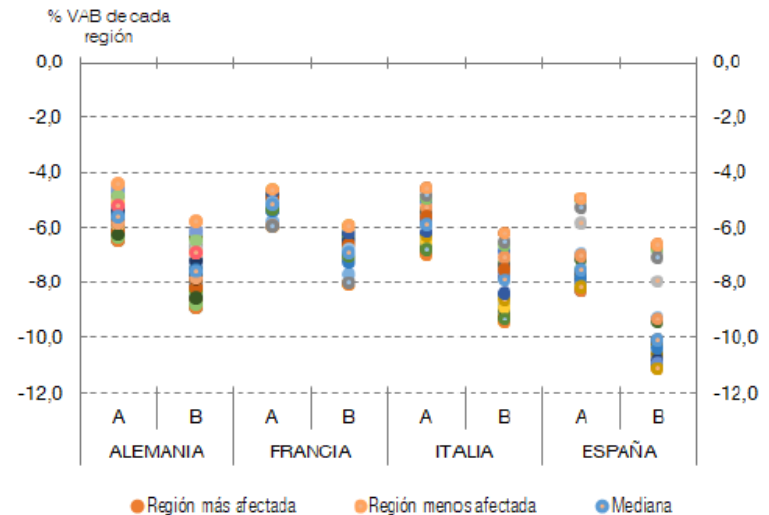
# 3. How to deal with fundamental uncertainty arising from the pandemic? Role of sectoral and regional analysis

## Using regional input output tables (EUREGIO) to compute COVID-19 impact across sectors and regions in Spain and other European countries

- Prades, E. and P. Tello (2020) "Spanish regions in global value chains: how important? how different?", Banco de España Working Paper nº 2026
- Making assumptions from the restrictions imposed in Spain for the lockdown, sector/region



**3.2 IMPACTO COVID-19 POR PAISES Y DISPERSION REGIONAL**



**Figure: Sectorial differences**  
Hotels and restaurants affect specially to the Spanish economy, as expected.

**Figure: Regional heterogeneity**  
Spain registers a higher dispersion, compared to other regions within other EA countries.

THANK YOU FOR YOUR ATTENTION