

Big Data at BBVA Research

Big Data Workshop
University of Navarra

Tomasa Rodrigo
BBVA Research

MARCH 2017



INDEX
Outline

**Big Data analysis at
BBVA Research**



**Digital revolution and
the new business
environment**



**Big data and education:
challenges and
opportunities**



Index
Outline

**Big Data analysis at
BBVA Research**



**Digital revolution and
the new business
environment**



**Big data and education:
challenges and
opportunities**



OUR STREAM OF ANALYSIS & BIG DATA



**Geopolitics
Analysis**

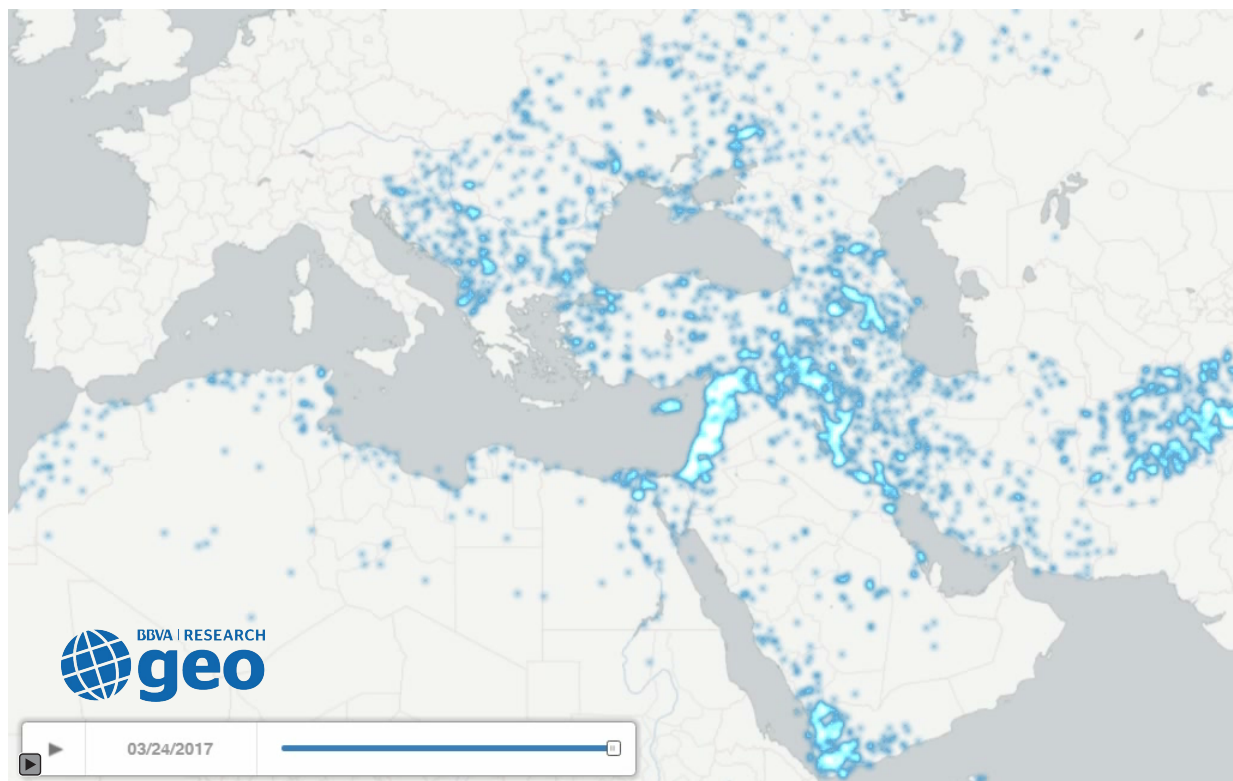


**Economic
Analysis**

Geopolitics Analysis

Tracking Geopolitics on real time is useful to center conflict zones & potential spillovers...

BBVA World Conflict Index Heatmap in 2017
(Number of conflict / Total events)

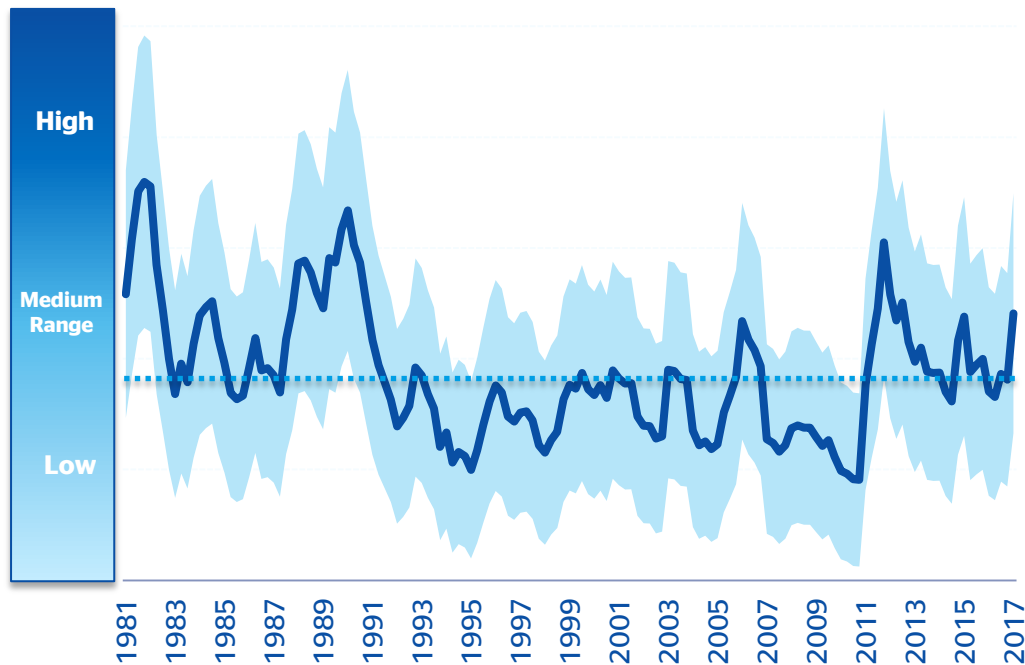


Geopolitics Analysis

We also monitor Conflict & Social unrest from an historical perspective...

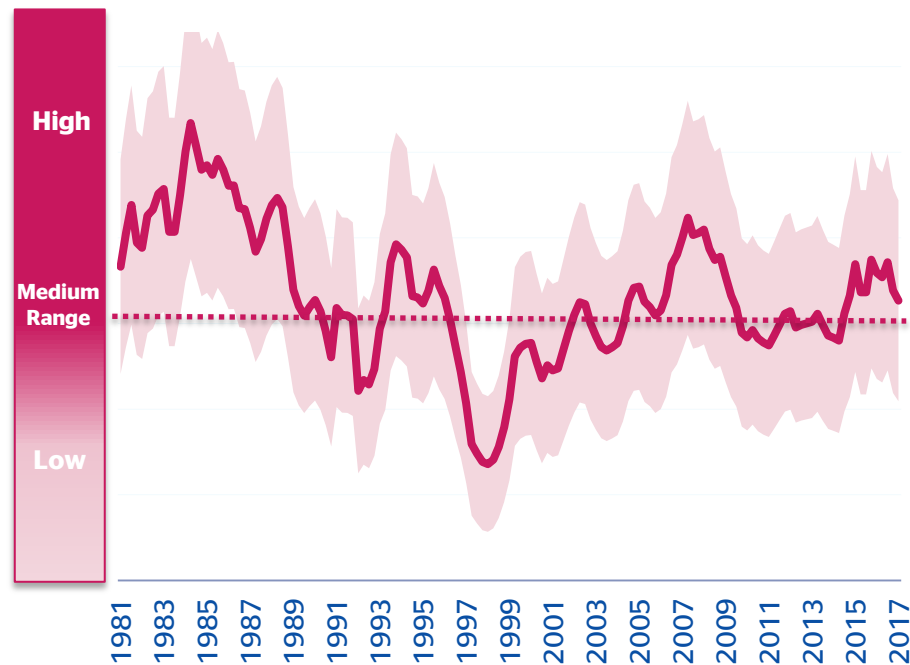
BBVA Research World Protest Intensity Index 1980-2017

(Number of protests in the world / Total events in the world)



BBVA Research World Conflict Intensity Index 1980-2017

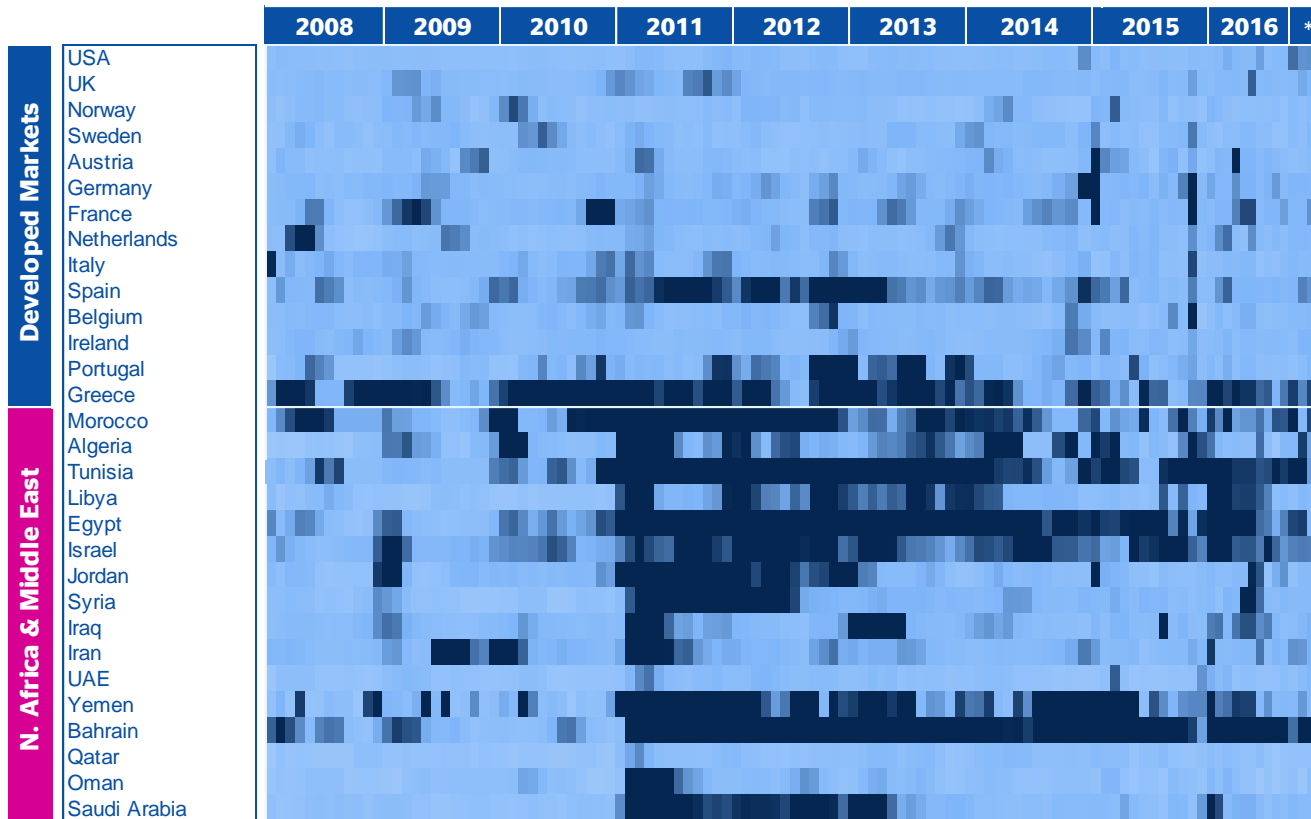
(Number of conflicts in the world / Total events in the world)



Social and Geopolitical Analysis

... as well as the evolution over time in each country, identifying hot spots and contagion effects

BBVA Research World Protest Intensity Map Jan 2008– Mar 2017
 (Number of protests/ Total events)

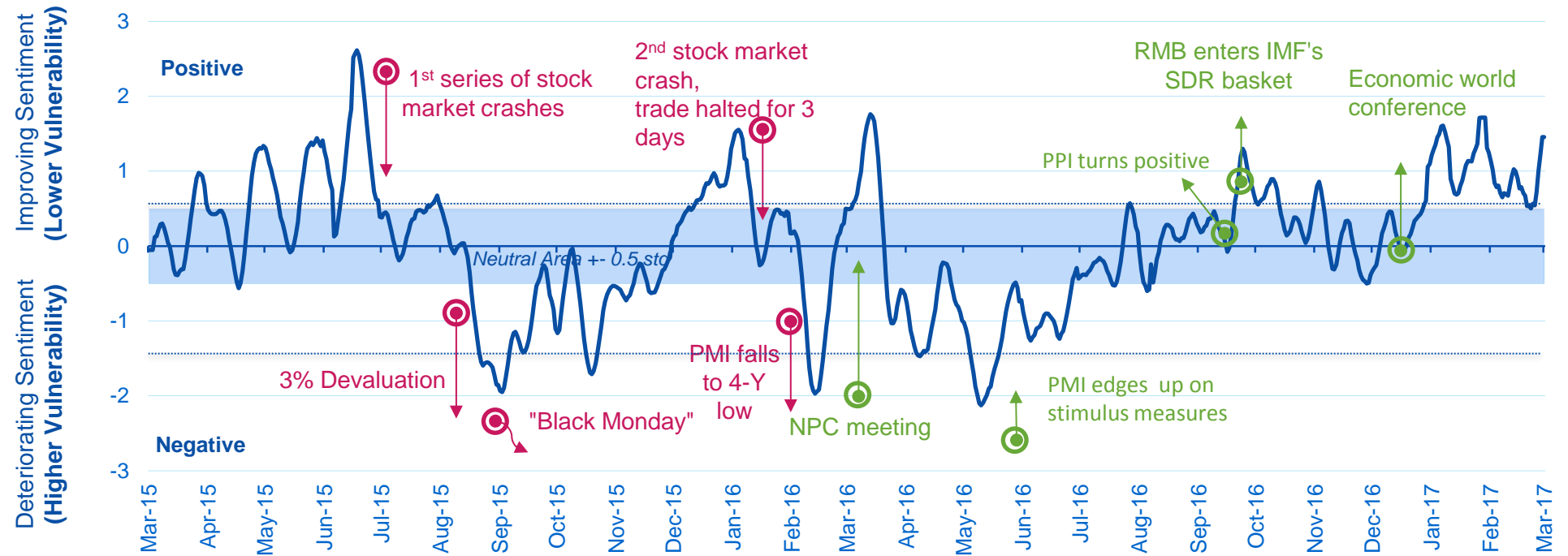


Economic Analysis

Big Data allows us to track Macroeconomic Sentiment...

China Macroeconomic Sentiment Index

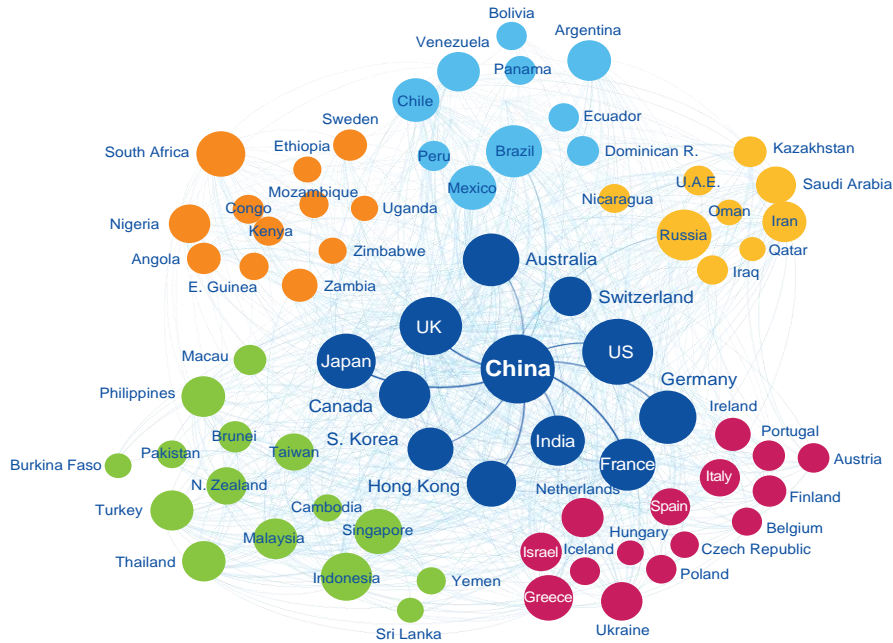
(Additive principal component based Indicator using thematic subsets of information terms, 42 items)



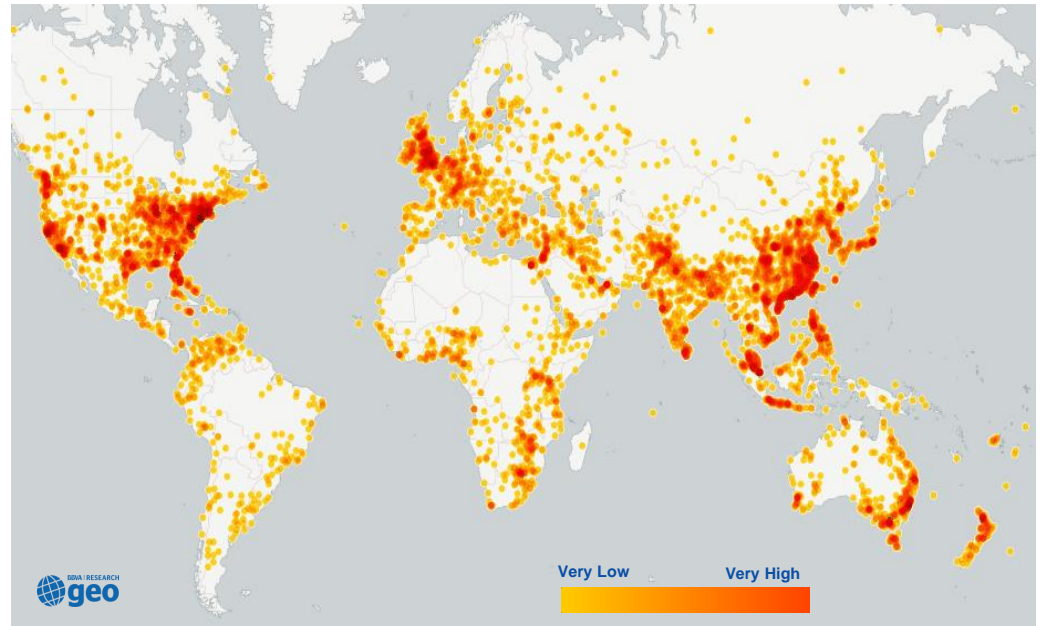
Economic Analysis

...as well as economic events with important world economic and geostrategic effects...

China slowdown: concerns and contagion globally may be monitored in 2H 2015



- **Financial & Trade lines impaired (Main trade partners)**
- Impact on commodity Exporters from Latam
- Conversation on Oil demand
- Activity Impact in Europe
- Activity Impact in EM Asia
- Impact on commodity Exporters from Africa



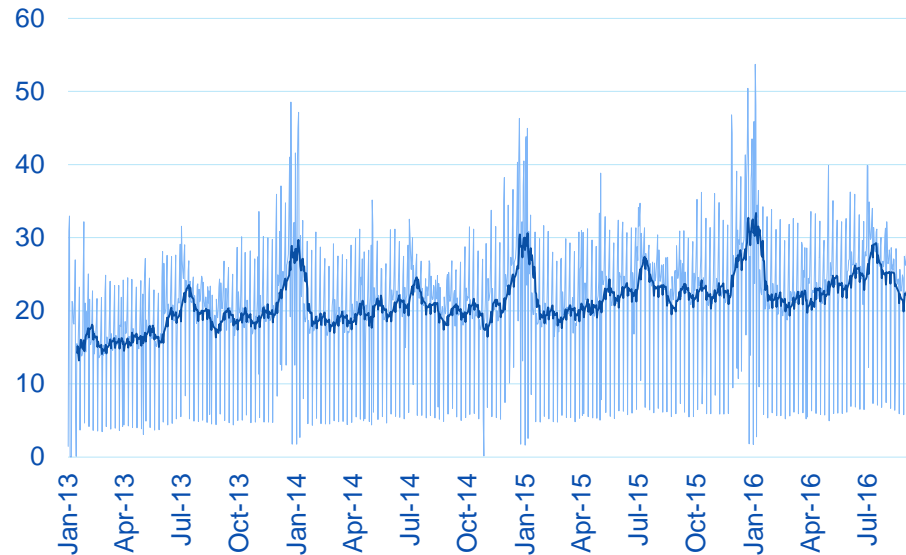
Economic Analysis

We also replicate national figures, gaining frequency...

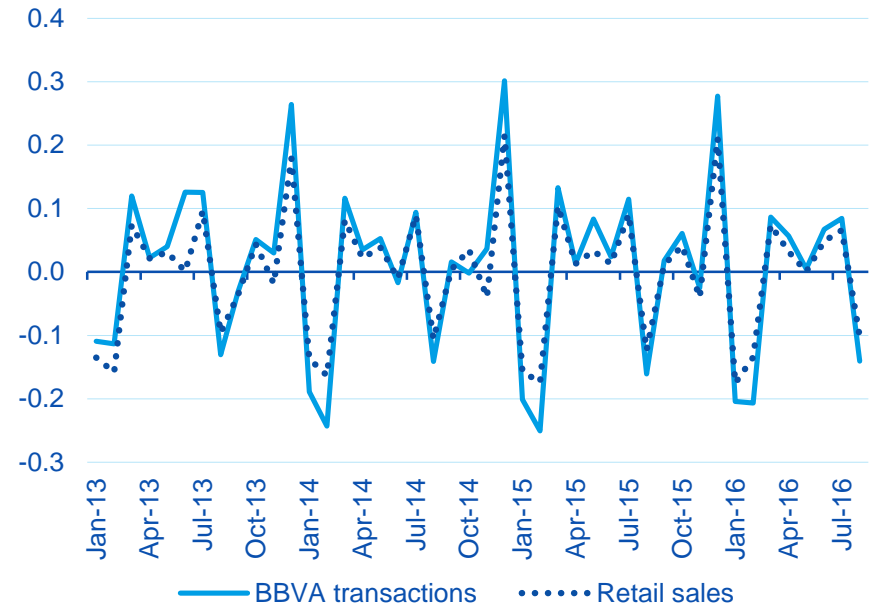
A “High Definition” Activity Indicator for Spain (and Mexico)

(BBVA consumption indicator for the optimal allocation of BBVA’s resources and products)

ICM–BBVA Index, in millions of euros and daily basis



Comparison Retail Sales-INE and BBVA on monthly basis



What “HIGH DEFINITION(*)” means here:

High granularity:
Dynamics down to subnational level

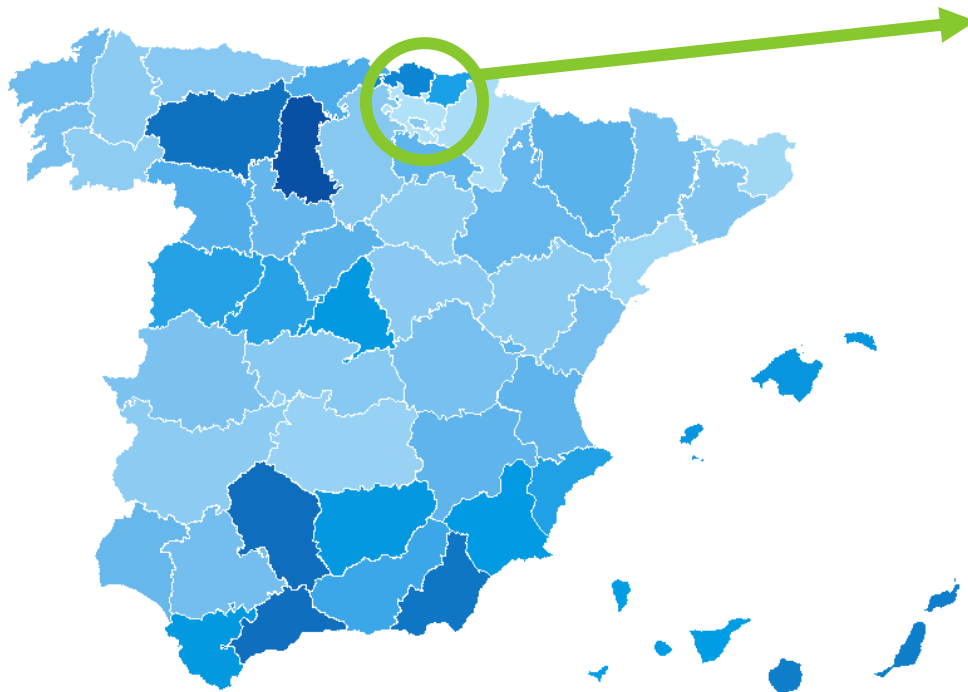
Ultra High Frequency:
Dynamics up to sub-monthly frequency

Multi Dimensional:
More detailed socioeconomic features

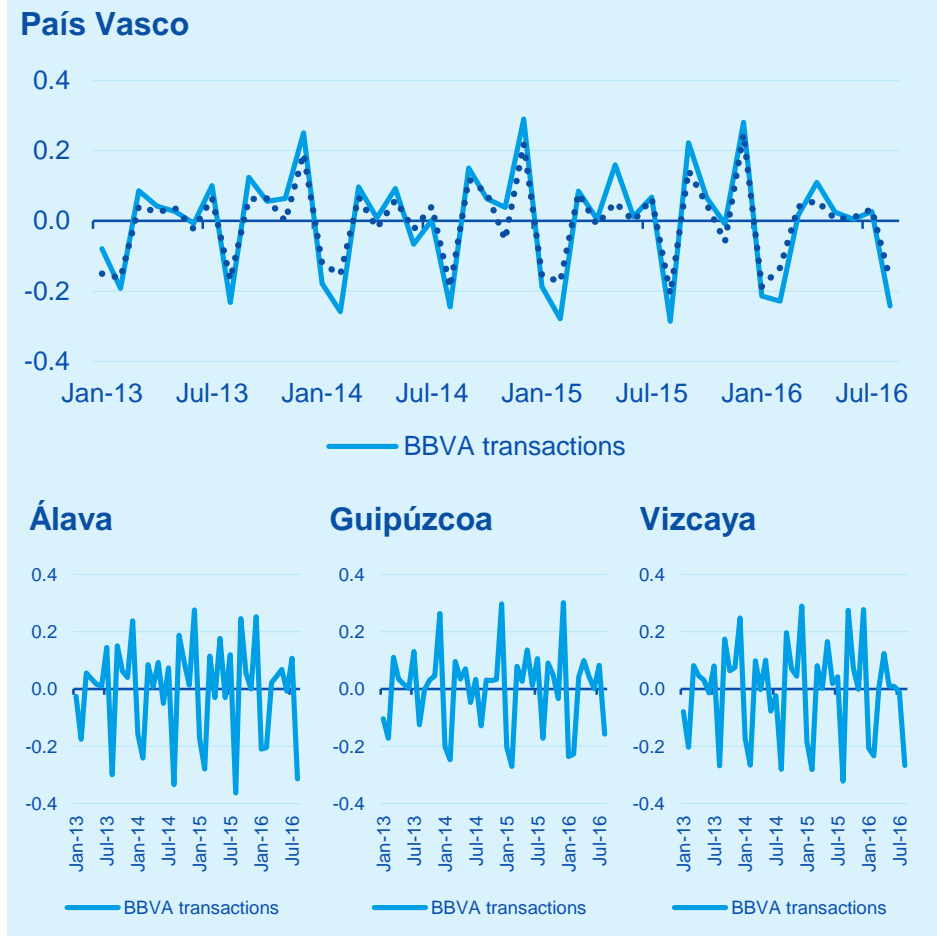
Economic Analysis

... and granularity, going to regional level

BBVA transactions 1S15 vs 1S16
(% yoy)



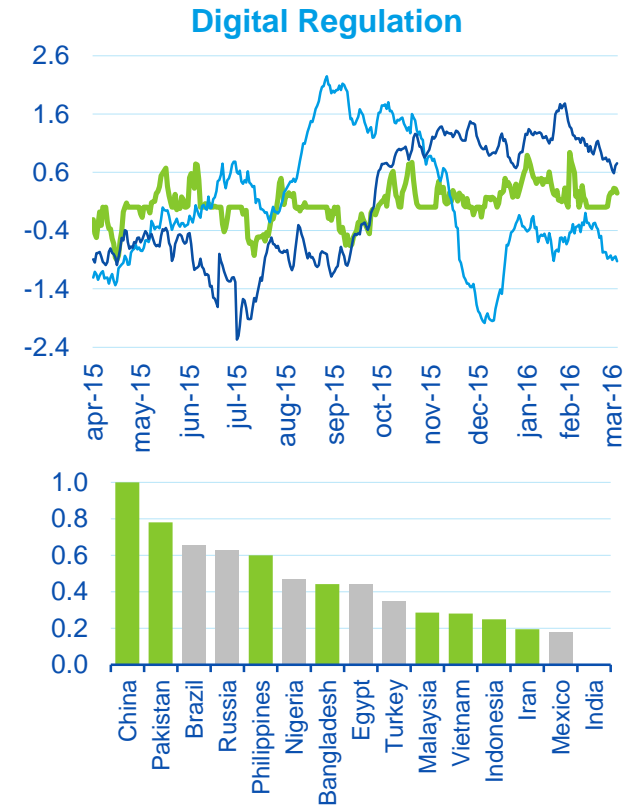
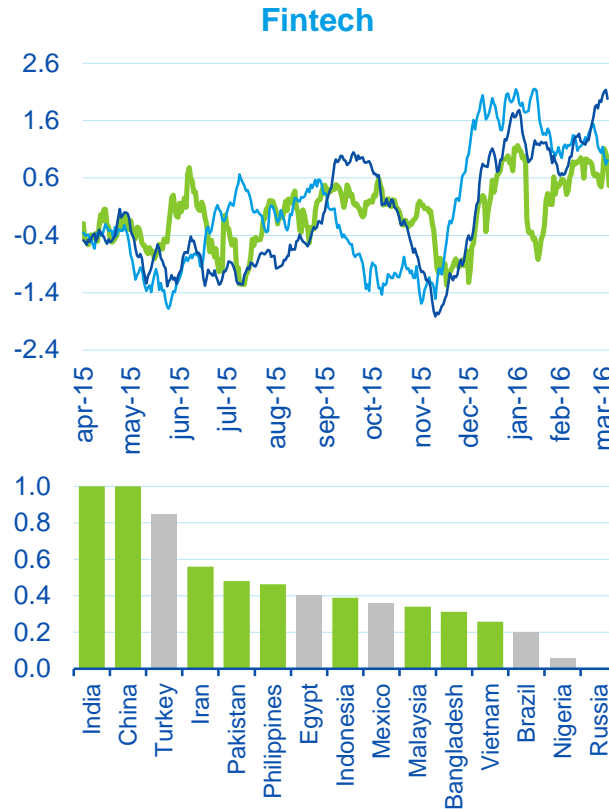
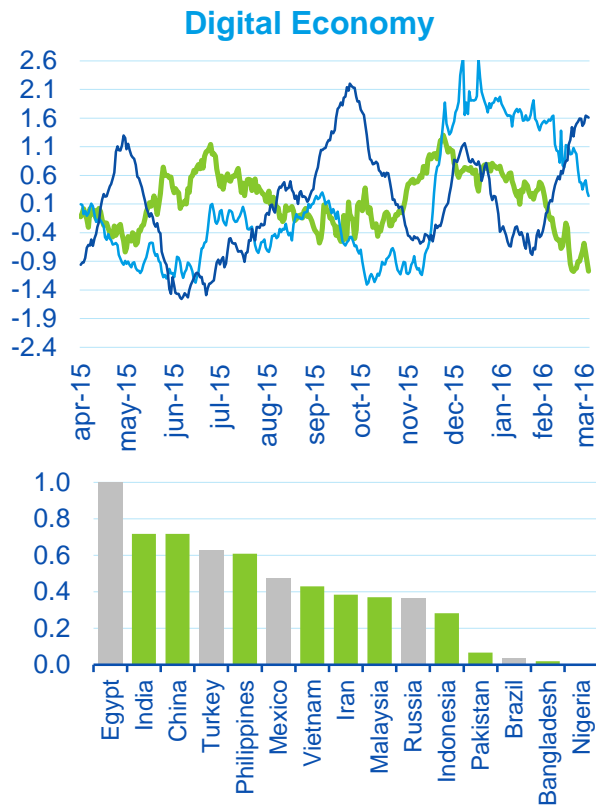
Interannual transaction growth (% 1S15-1S16) 6 8 10 12 14 16



Economic Analysis

Using information from media, we get insights about the sentiment on several digital issues

Media sentiment digital index and ranking for Emerging Asia countries, US and Europe 2015-16 by components



— Europe — US — Emerging Asia

BBVA Research geostrategic tools and products

You can find us at:

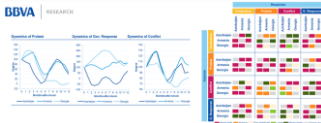
BBVA Research webpage
in the following [link](#)



Working Paper, Nº 1520
Madrid, June 2015

An Empirical Assessment of Social Unrest Dynamics and State Response In Eurasian Countries

Gonzalo de Cadenas-Santiago
Alicia García-Herrero
Álvaro Ortiz Vidal-Abarca
Teresa Rodríguez López



Global Hot Topics
June, 26th 2015

The Refugee Crisis: Challenges for Europe

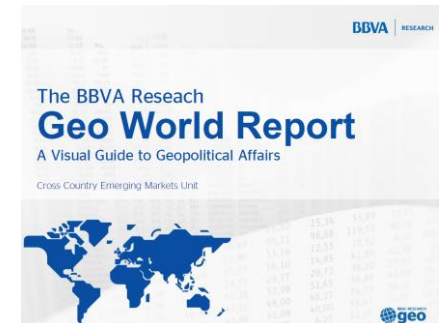
Álvaro Ortiz and Teresa Rodríguez, BBVA Cross Emerging Markets Unit

The Middle East and North Africa region are facing complex and multiple emergency situations that are posing important humanitarian challenges for Europe. The significant influx of refugees has introduced some security problems which could reshape migration European policies looking for a more coordinated response. Especially worrisome is the situation in Syria, which leads more than 3.5 millions of people to flee to neighboring countries (Turkey, Lebanon and Jordan) and to Europe.

BBVA Research Refugee Flows May 14 to Jun 15
(Number of people (thousands) about refugees' arrival and departure)

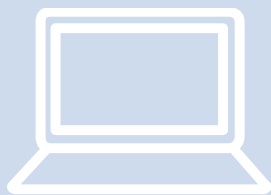


The migrant problems in the "South" — Europe is facing its most serious migratory crisis since the end of the Second World War. The massive refugee influx from North Africa and the Middle East has greatly increased during last year, introducing complex challenges for Europe. There are several reasons why migrants through the Mediterranean Sea have increased dramatically: — The post-Arab Spring social instability, human rights violation and security problems have increased notably the migrant flows from North Africa. — The fall of some of the Dictatorship (i.e. Libya, Tunisia), which was a backbone for sub-Saharan African migrants, has disappeared, fostering the flow of migrants from these countries. — The ISIS advance in Syria and Iraq and the recent proxy war in Yemen have triggered a massive flow of migrants to neighbouring countries (Turkey, Lebanon, Jordan and Saudi Arabia), and from then to Europe. — The conflict in the Caucasus is complicating further the security situation.



Index
Outline

**Big Data analysis at
BBVA Research**



**Digital revolution and
the new business
environment**



**Big data and education:
challenges and
opportunities**



Big Data: a new paradigm that will transform the business landscape...

The growth generated by **innovation and digital transformation** has five sources:



New
**players and
markets**



The
introduction of
new **goods
and services**



New
**production
and
distribution
methods**



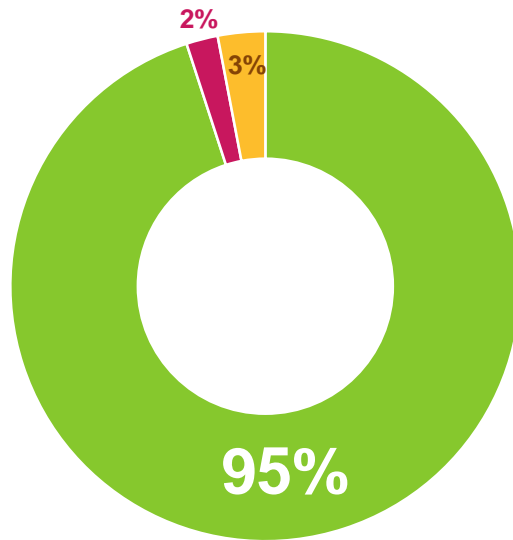
Changes in the
**production
factors**



Changes in the
**organization
and
management
of firms**

... with high potential to grow

How do corporate leaders see the new technologies?



- Big Data as an opportunity to grow
- Big Data as a threat
- Big Data effects will be neutral

Big Data leads to important changes in the current production structures

The new available information allows:

- ✓ Improve and enrich our decisions
- ✓ Answer new questions
- ✓ Increase efficiency

There are still some concerns:

- × Data confidentiality
- × Cyber security
- × New framework to be regulated

Opportunities and challenges in the financial sector



It's an opportunity to ...

become more efficient

improve risk management

generate greater value for customers

Commerce**360**



... but with important challenges

Access to the infrastructure

Education and training programs

BBVA

DATA & ANALYTICS

The GDEL T Project

Google bigquery

Index
Outline

**Big Data analysis at
BBVA Research**



**Digital revolution and
the new business
environment**



**Big data and education:
challenges and
opportunities**



Education programs need to incorporate new competences to take advantage of this new era...

New skills are focused on



Making the right questions



Developing the data management and programming capabilities to work with large-scale datasets



Deepening the Statistical and econometric skills to analyze the data



Interpreting the results: summarize, describe and analyze the information

New data may end up changing the way economists approach empirical questions and the tools they use to answer them.

... and to match market's demand

The most in-demand skills in the next years will be



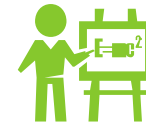
**Programming and
application
development**



**Security, compliance
and governance**



**Business
intelligence and
analytics**



Big data expertise

New data will also transform the business demanded competences to adapt to the digital era and to exploit its potential

Thank you

Big Data at BBVA Research

Big Data Workshop
University of Navarra

Tomasa Rodrigo
BBVA Research

MARCH 2017

