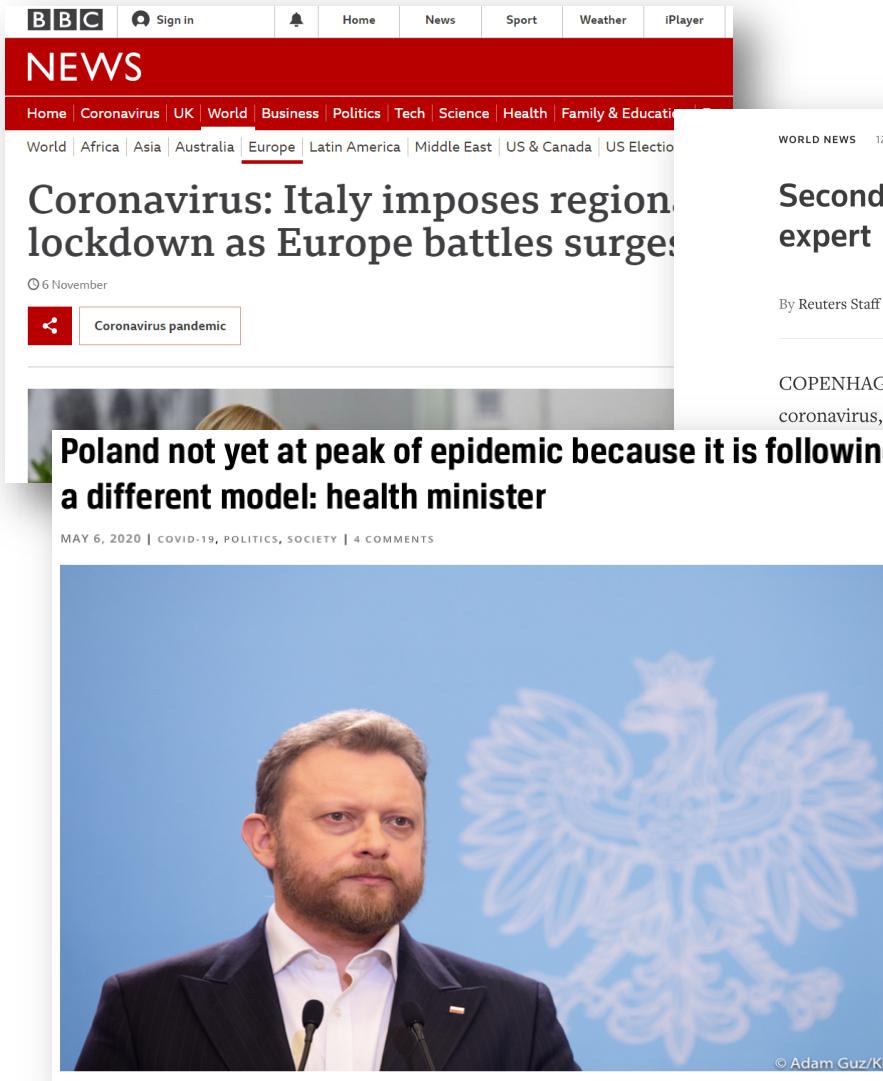


**"No Need to Panic,  
It's All Under Control..."**

A Visual Critique of European Government's  
COVID-19 Response Strategies

# Did you say Lockdown?

European governments are taking different measures to fight COVID-19



**BBC NEWS**

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**Coronavirus: Italy imposes regional lockdown as Europe battles surge**

© 6 November

Coronavirus pandemic

**Poland not yet at peak of epidemic because it is following a different model: health minister**

MAY 6, 2020 | COVID-19, POLITICS, SOCIETY | 4 COMMENTS



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WORLD NEWS 12 MAI 2020 / 9:44 AM / UPDATED IL Y A 7 MOIS

## Second virus wave 'very unlikely' in Denmark, says expert

By Reuters Staff

3 MIN READ

COPENHAGEN (Reuters) - Denmark is "very unlikely" to be hit by a second wave of coronavirus, the country's chief epidemiologist said on Tuesday, after the government increased testing and a contact tracing system.



Coronavirus: France sees 'exponential rise' in cases

© 28 August

Coronavirus pandemic



France's health ministry said the country had seen an "exponential" rise in cases recently

**Sweden's coronavirus strategy: has 'culture of conformity' saved the country from COVID fatigue?**

By Emma Beswick • last updated: 19/10/2020



People chat and drink outside a bar in Stockholm, Sweden, while elsewhere in Europe, citizens were locked down. April 8, 2020. -

UK | England | N. Ireland | Scotland | Alba | Wales | Cymru | Local News

## Covid-19: PM announces four-week England lockdown

© 31 October

Coronavirus pandemic



# Do they Really have Everything under Control?

We want to understand the differences between COVID - 19 responses amongst European governments and their level of effectiveness

**WHERE**

have COVID-19 response strategies been **successful**?

**WHICH**

**factors** are most important in determining the success of mitigation strategies?

**WHAT**

**mitigation strategies** have been most effective at combatting the virus?

**HOW**

does the theorised efficacy of mitigation strategies **vary between countries**?

# Where's Our Data From?

I predominantly used Data from Our World In Data and the Oxford CGRT Stringency Index to analyse the effects of Government measures

## 1 COVID DATA

### Our World In Data

- **Hospital Data**
- **Testing Data**

Number of Cases and deaths per country over time

## 2 POLICY DATA

### The Stringency Index

How to quantify the degree of strictness of the implemented policies?



School & Workplace closures (\*2)



Cancel public events & Restrictions on gatherings (\*2)



Stay at home



Restrictions on internal transportation (inc. closing public transportation) (\*2)



International travel controls



Public information campaigns

# What was Our Methodology?

After cleaning and wrangling the data, we analysed trends and searched for patterns

## Data Cleaning

- Combining 3 datasets: cases/deaths and stringency, hospital data, and testing
- Handling of missingness
- Selection of variables
- Tidying dataset
- Creating a subset of Europe



## Analyses

- Holistic analyses
- Selection of countries for deep dive
- Deep Dive Analyses
- Explanatory Model



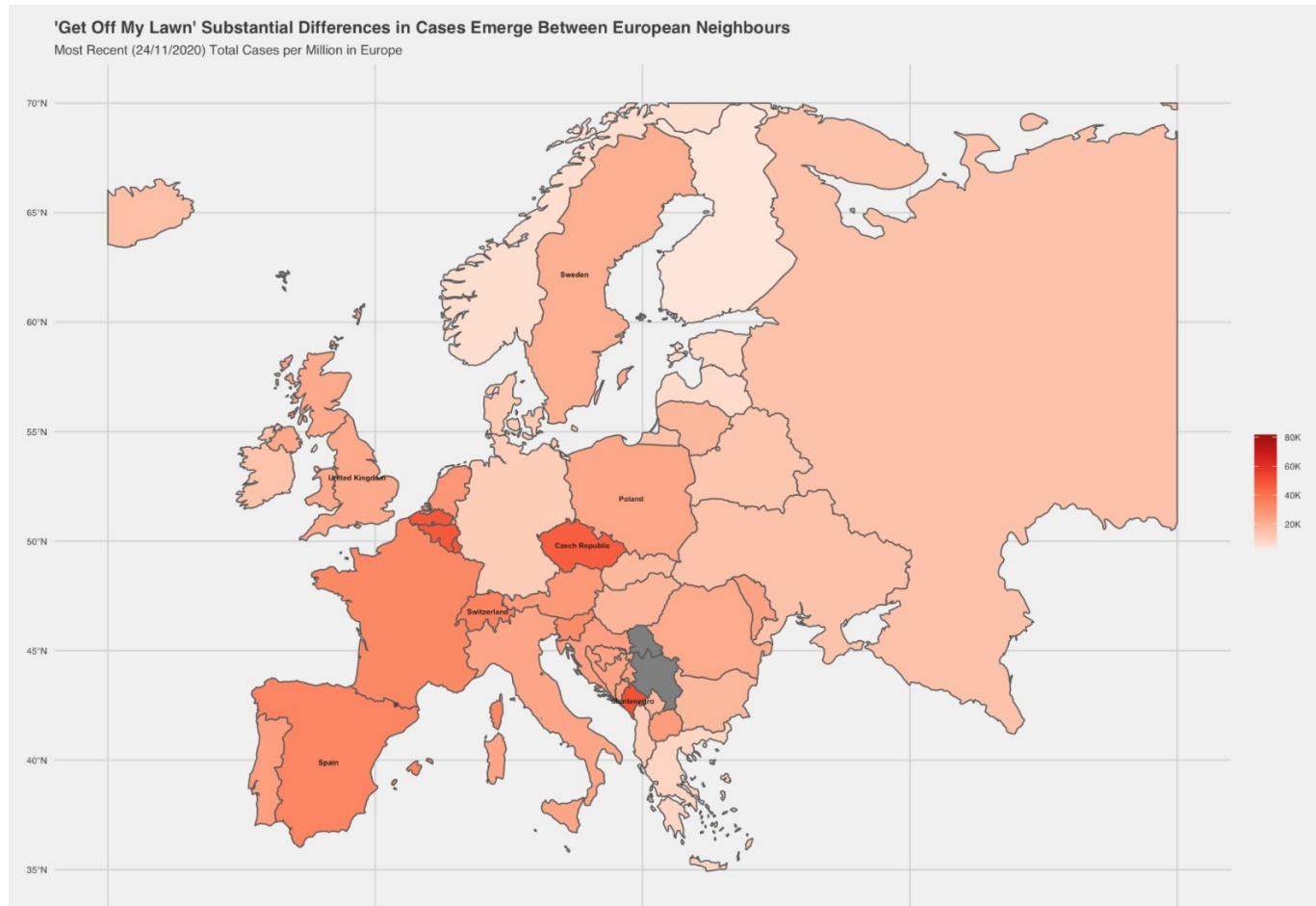
## Enriching the Dataset

- No' of days since > 100 cases
- No' of days since > 1,000 cases
- No' of days since 0 cases
- No' of days since 0 deaths



# Which European Country has the Most Cases?

Selection of countries of interest based on cases per Million and global media coverage



## Low number of cases

Denmark: earliest & longest full country lockdown  
Norway, Finland, Greece, Netherlands, and Germany

## Medium number of cases

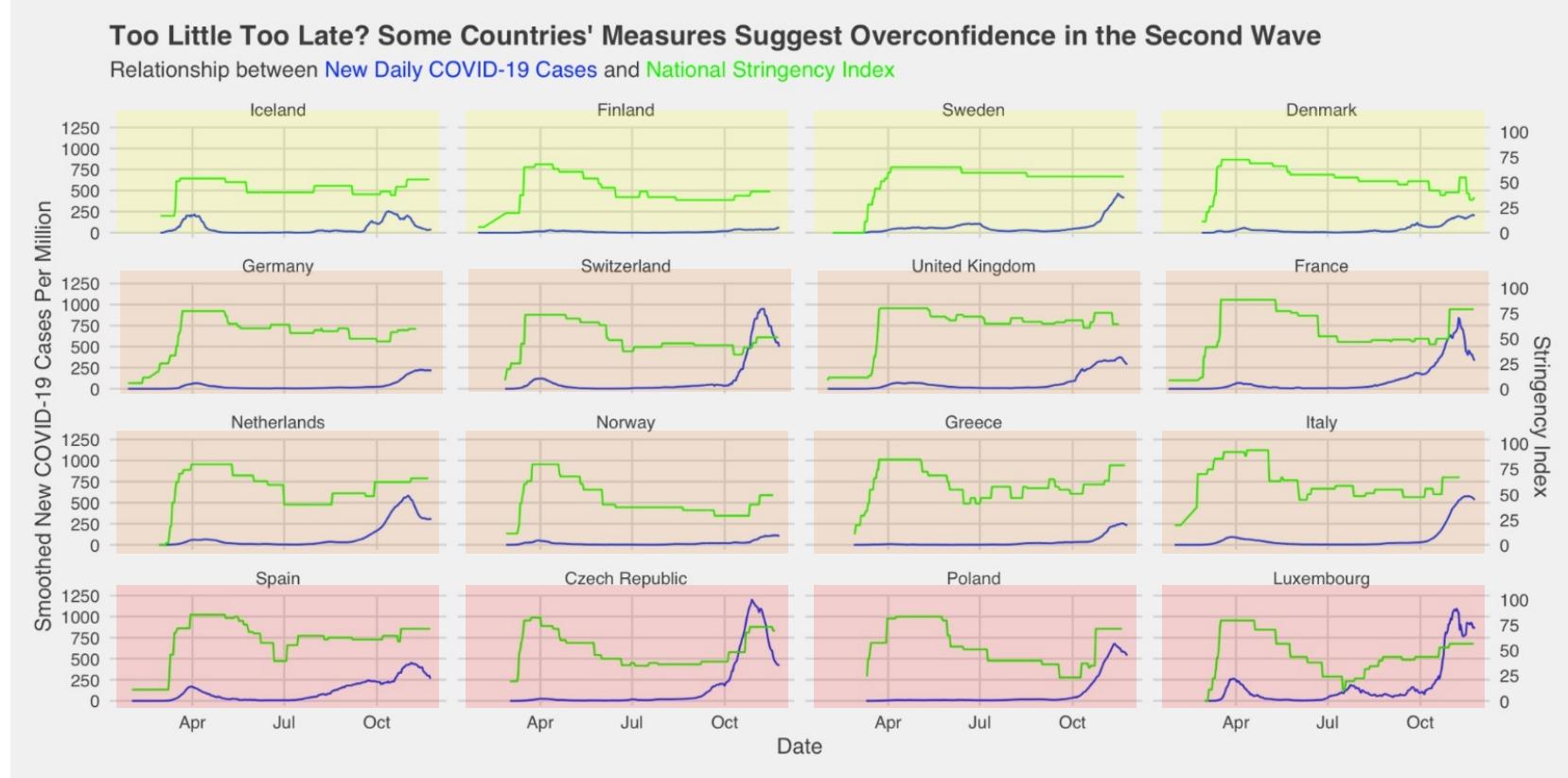
Italy: first country hit badly  
Poland: severe lockdown and overcorrection  
Sweden: no lockdown  
United Kingdom: criticized for delayed lockdown  
Iceland

## High number of cases

France: criticized for its 'chaotic' policing strategy  
Czech Republic, Spain, Luxembourg, Switzerland

# How did the Restrictions Affect the Number of Cases?

Three COVID-19 response strategies emerge, with differing success ...



## Patterns in measures and their effects

### Stable measures

- Relatively low changes in number of cases for Finland and Denmark

### Medium variance over time

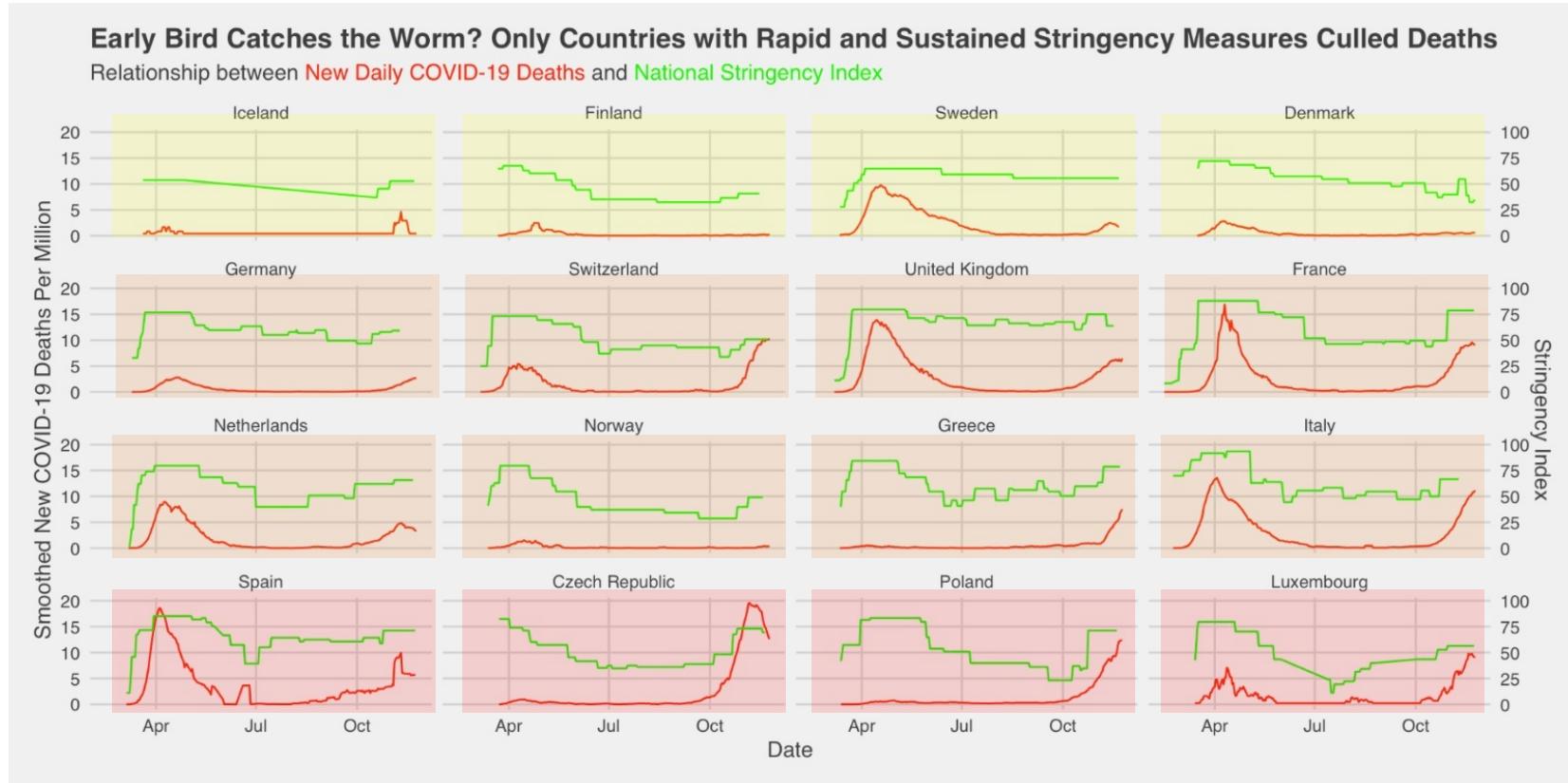
- High peak in second wave for Switzerland, France and the Netherlands
- Germany, Norway, Greece able to contain few cases

### High variance over time

- High peak in second wave for Czech Republic, Poland and Luxembourg

# How did the Restrictions Affect the Number of Deaths?

...but high early deaths suggest low number of cases might result from a lack of testing during the first wave



## Patterns in measures and their effects

### Stable measures

- Besides Sweden, low number of deaths

### Medium variance over time

- Compared to cases, high number of deaths during first wave
- Only Germany, Norway, Greece able to contain deaths

### High variance over time

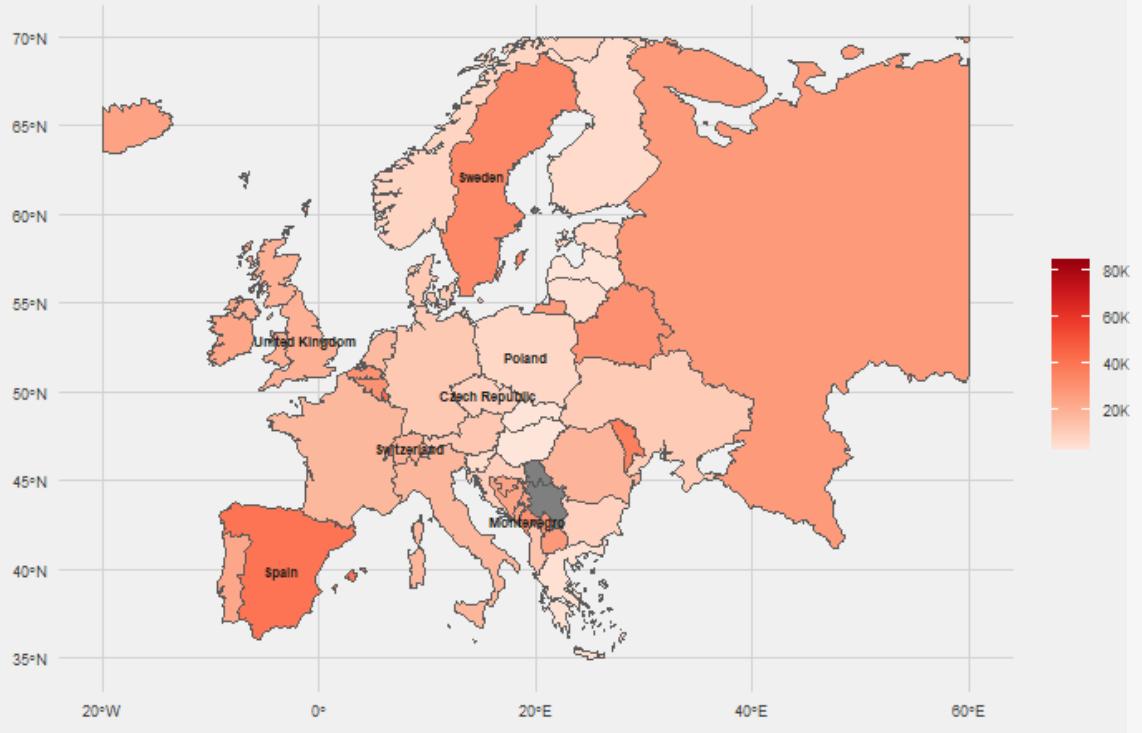
- High peak in second wave for Czech Republic, Poland and Luxembourg

# Wave 1: Which European Country had the Most Cases?

Wave 1 hit European Countries to a different extent

Though Sweden Was Amongst the Worst Affected by Wave 1...

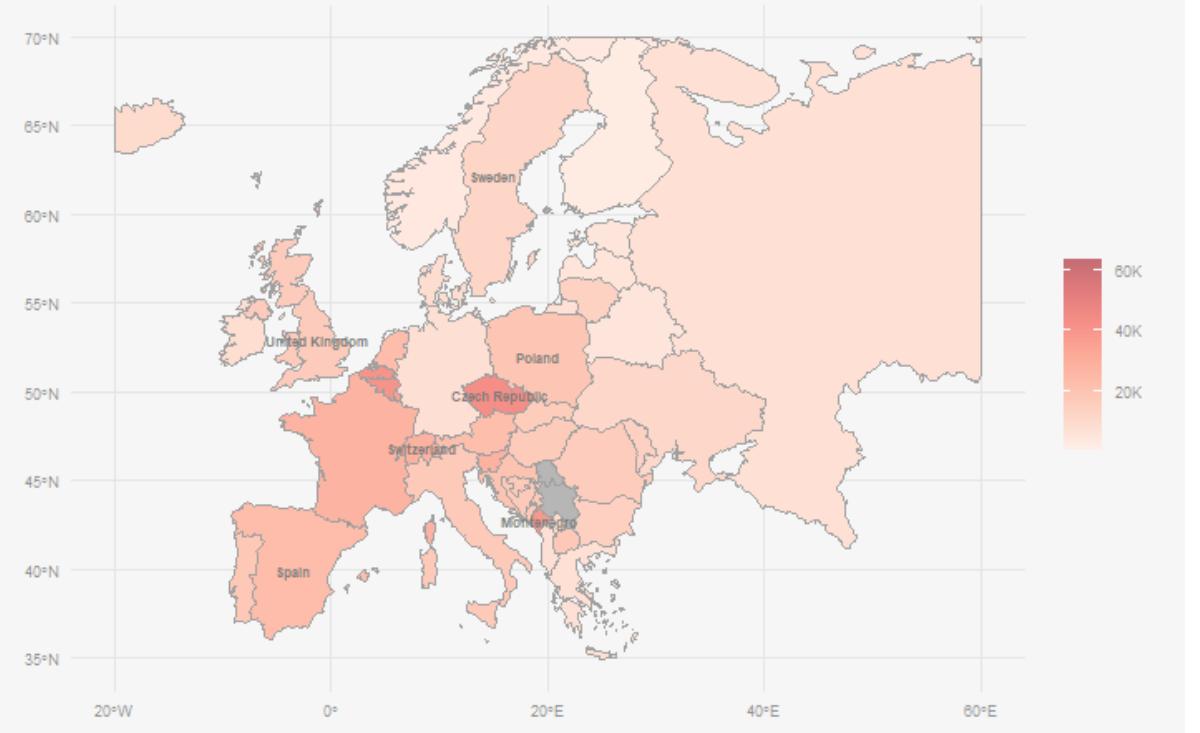
Total Cases Per Million for the First Wave



01.02.2020 – 01.09.2020

...Central and Southern Europe Were Hit Hardest by Wave 2

Total Cases Per Million for the Second Wave



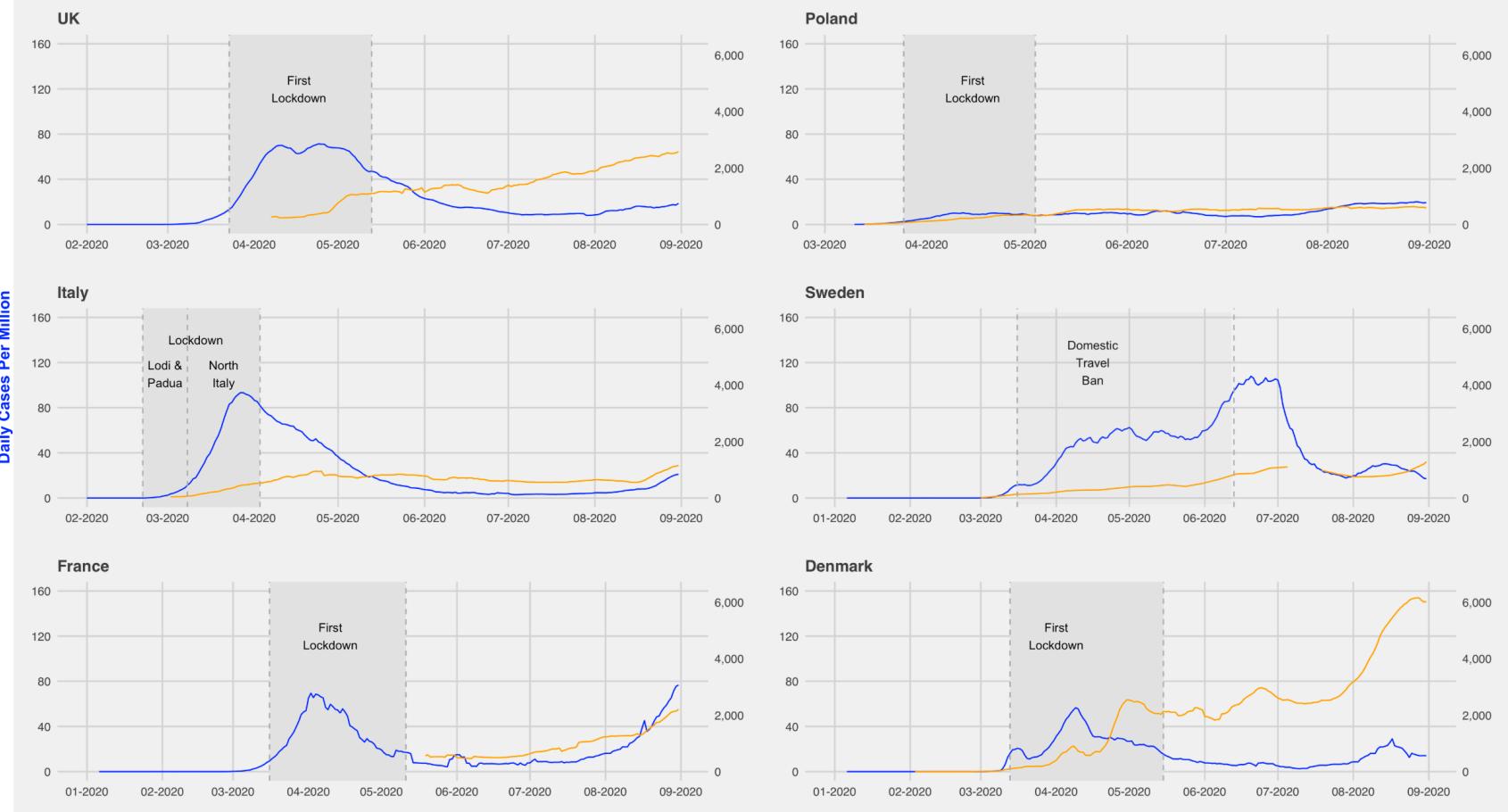
01.09.2020 – 27.11.2020

# How did European Countries React to Wave 1?

## What trends are there



Late lockdown  
with slow effect



Local and strict  
lockdown



Fast lockdown  
Low testing



Late but  
effective  
lockdown



No lockdown -  
many cases  
after loosening  
restrictions



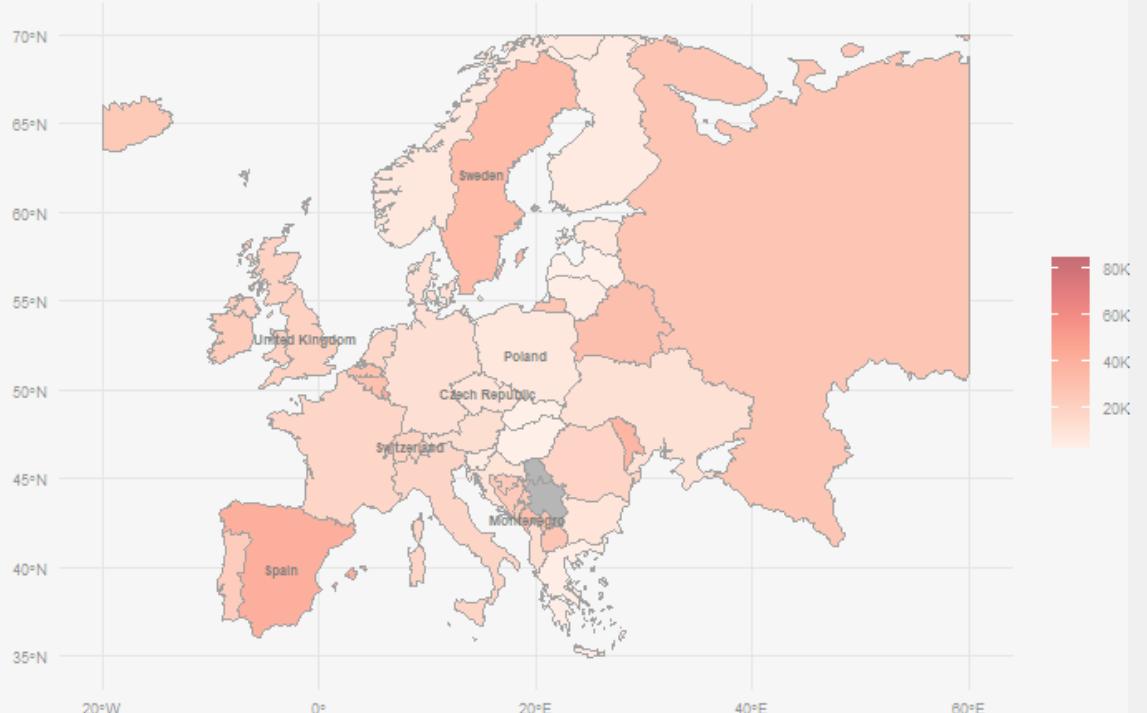
Early, hard  
lockdown, and  
strong testing

# Wave 2: Which European Country had the most Cases?

Wave 2 hit European Countries to a different extent

Though Sweden Was Amongst the Worst Affected by Wave 1...

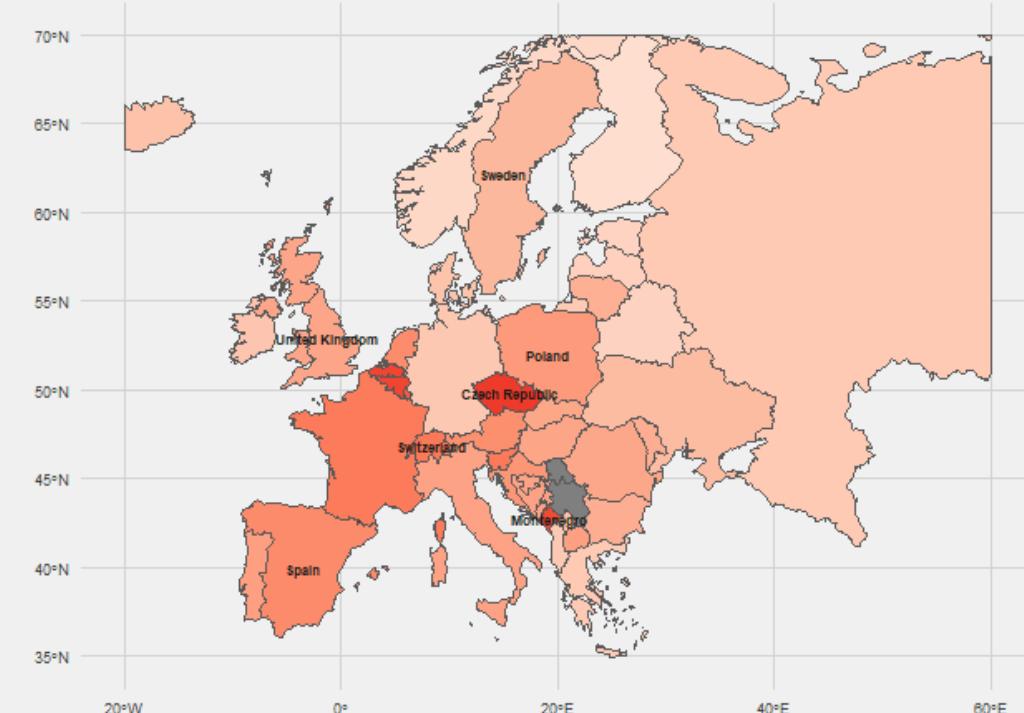
Total Cases Per Million for the First Wave



01.02.2020 – 01.09.2020

...Central and Southern Europe Were Hit Hardest by Wave 2

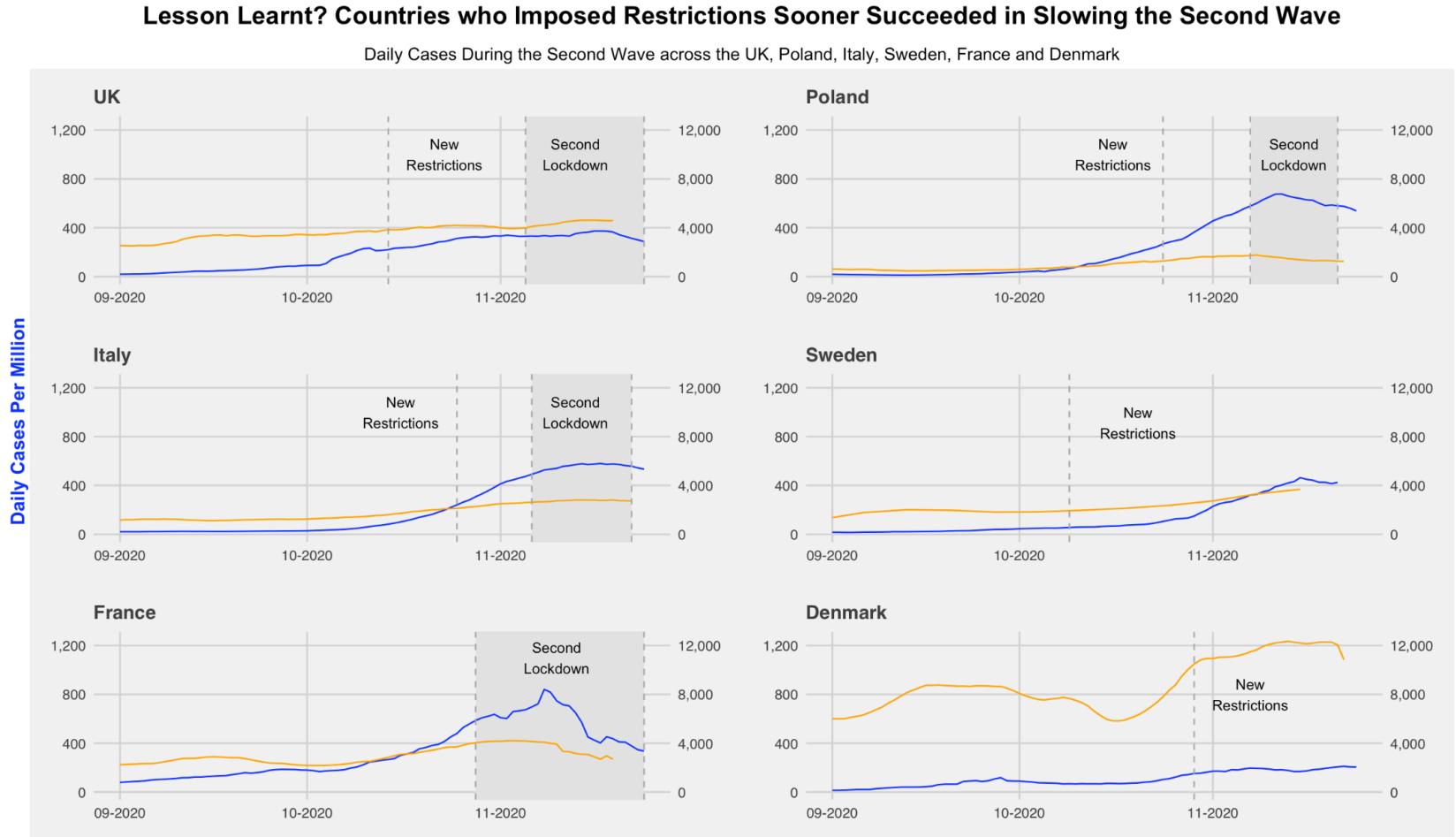
Total Cases Per Million for the Second Wave



01.09.2020 – 27.11.2020

# Did Governments Learn from Wave 1?

Most countries opted for faster, harder lockdowns – following the Danish example



High testing and  
later lockdown



## High cases despite early restrictions



## Later but effective lockdown



Many cases even  
after lockdown



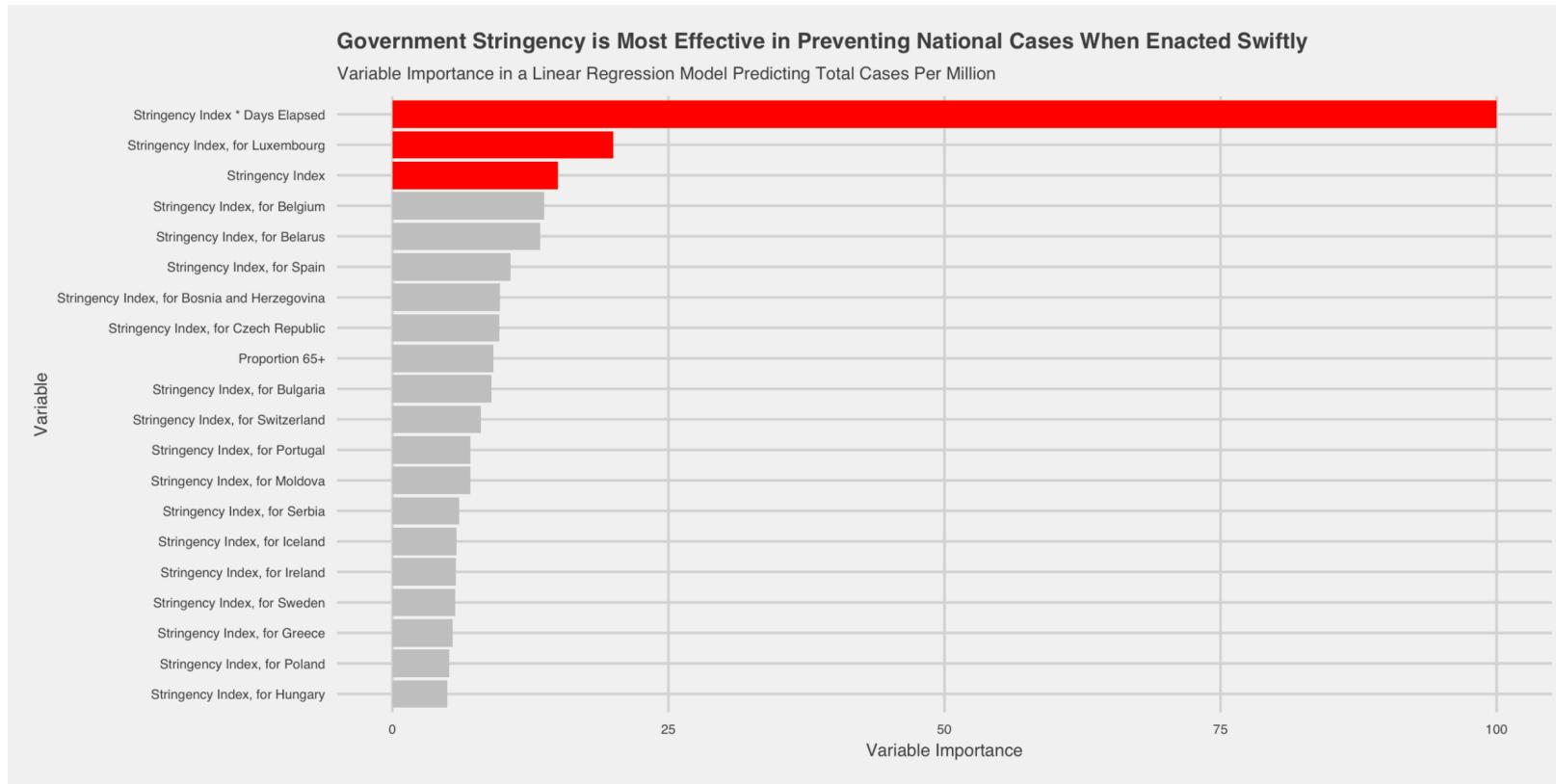
Many cases after  
loosening restrictions



## Effective testing strategy after successful lockdown

# How do Factors Affecting Cases Rank in Importance?

Sense check: a linear model empirically supports and enriches these insights



## Stringency Index \* Days Elapsed

- Most important factor
- **Early lockdowns** are considerably **more effective**

## Stringency Index

- Of low importance because its effect **varies highly** between countries

## Country Heterogeneity

- Stringency measures are clearly **not equally important**

**Total Cases Per Million** =  $0.0064 - 0.0451 * \% \text{ Aged } 65^+ - 0.783 * \text{Stringency Index} + 0.972 * (\text{Stringency Index} * \text{Days Elapsed}) + B_4 * (\text{Stringency Index} * \text{Location})$ , where  $B_4$  is a country-specific coefficient on stringency.

# Have They Really Got it Under Control?

We sought to understand the differences of COVID - 19 responses amongst European governments and their level of effectiveness

## WHERE

have COVID-19 response strategies been *successful*?

## EARLY STRINGENCY



## WHAT

*mitigation strategies* have been most effective at combatting the virus?

## VARIANCE

Stable



Effective

Indecisive



Ineffective

## WHICH

factors are most important in determining the success of mitigation strategies?

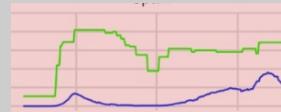
## SPEED

Fast



Success

Slow



Failure

## HOW

does the theorised efficacy of mitigation strategies **vary between countries**?

## STRINGENCY

Most Important



Less Important

