

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

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

Study Group 11

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. -

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Covid-19: PM announces four-week England lockdown

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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**?

How Did We Find the Information?

We 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



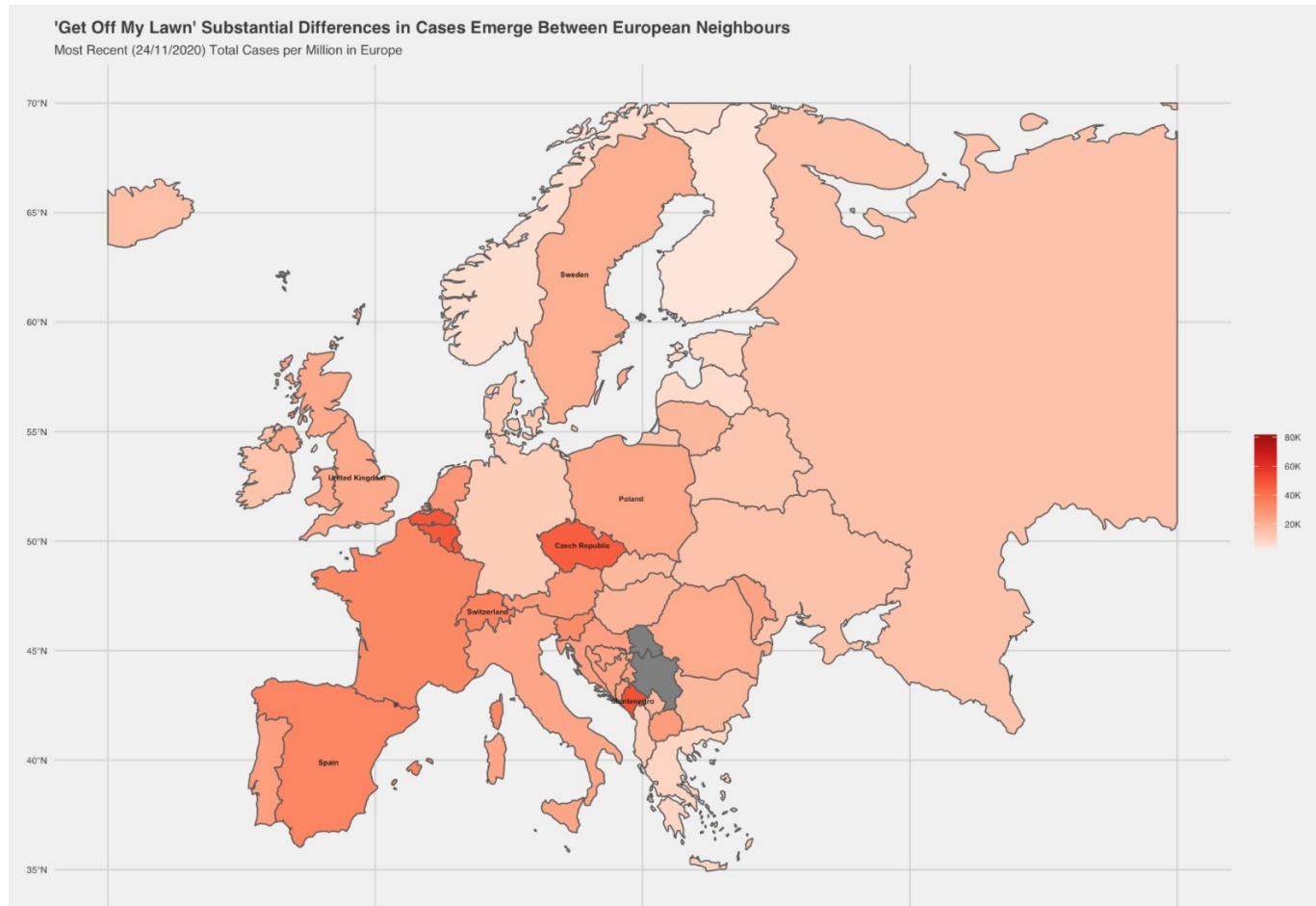
Enriching the Dataset

- 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

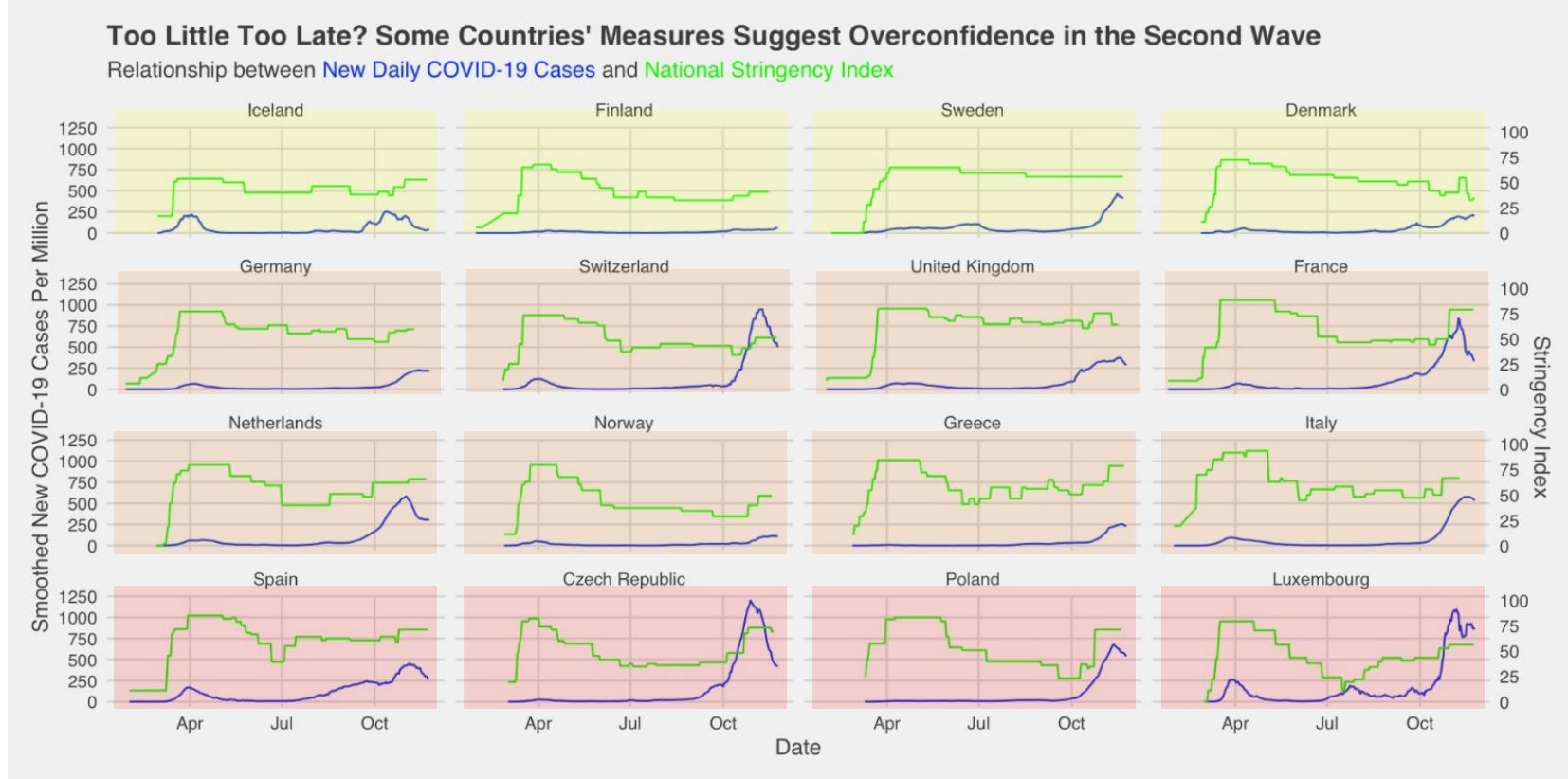
Italy: first country hit badly
Poland: severe lockdown and overcorrection
Sweden: no lockdown
United Kingdom: criticized for delayed lockdown
Iceland

High number of cases

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

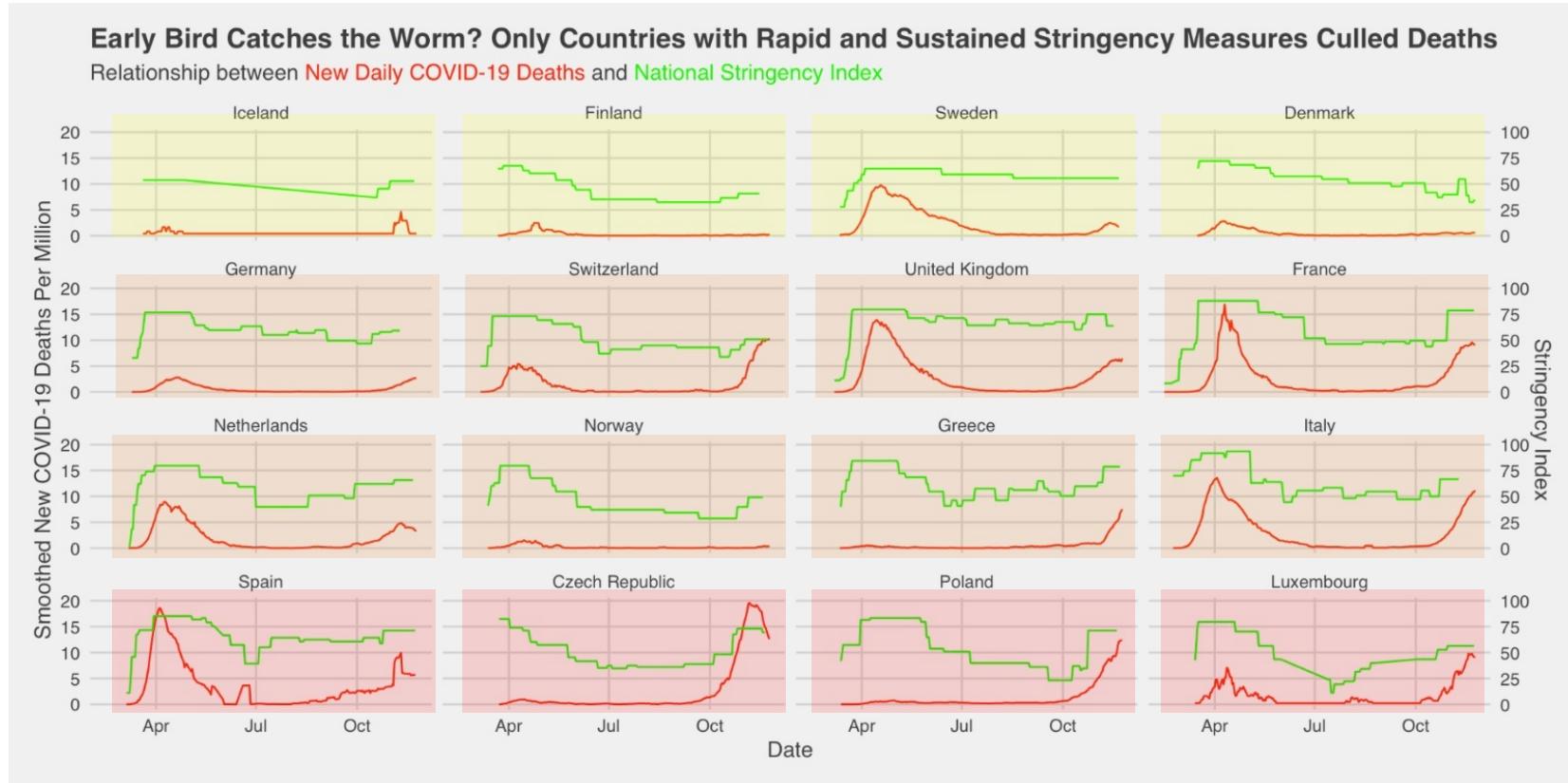
- High peak in second wave for Switzerland, France and the Netherlands
- Germany, Norway, Greece able to contain few cases

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

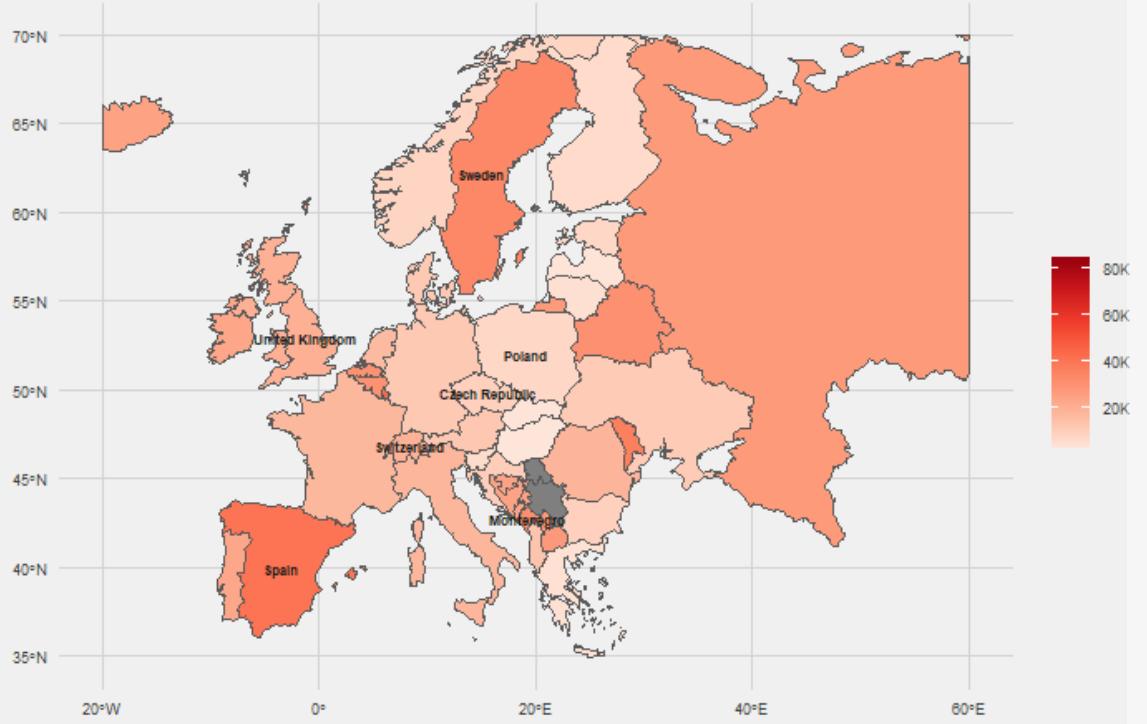
- High peak in second wave for Czech Republic, Poland and Luxembourg

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...

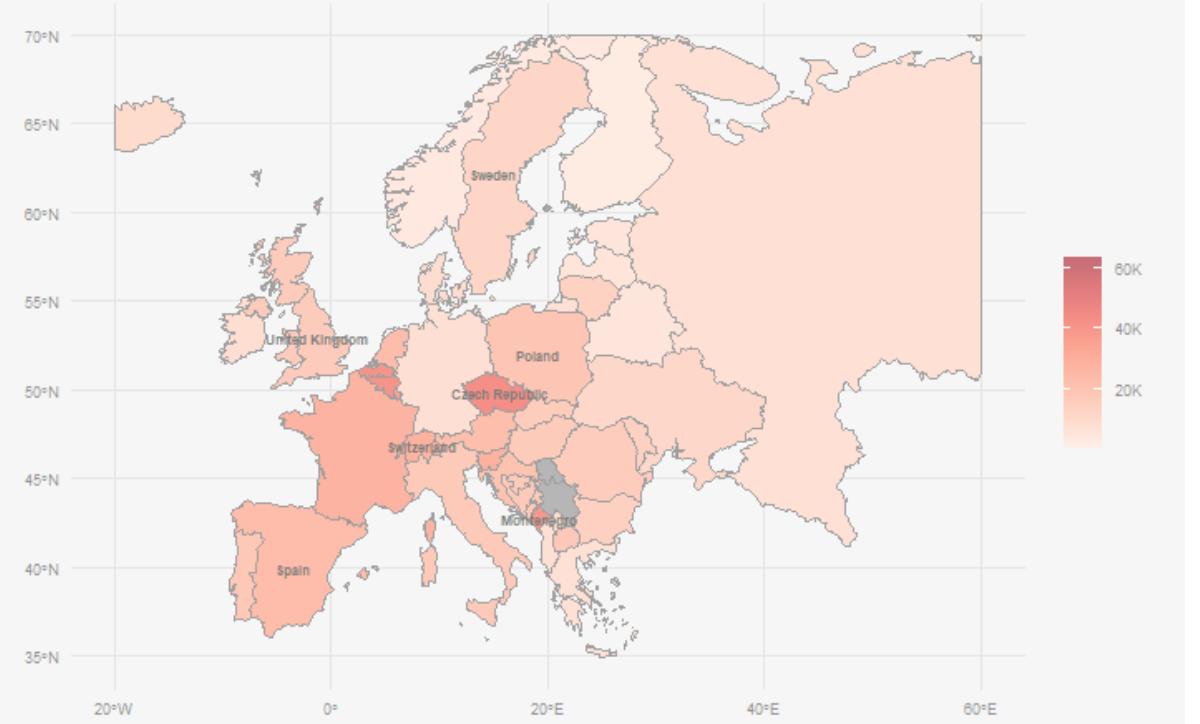
Total Cases Per Million for the First Wave



01.02.2020 – 01.09.2020

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

Total Cases Per Million for the Second Wave



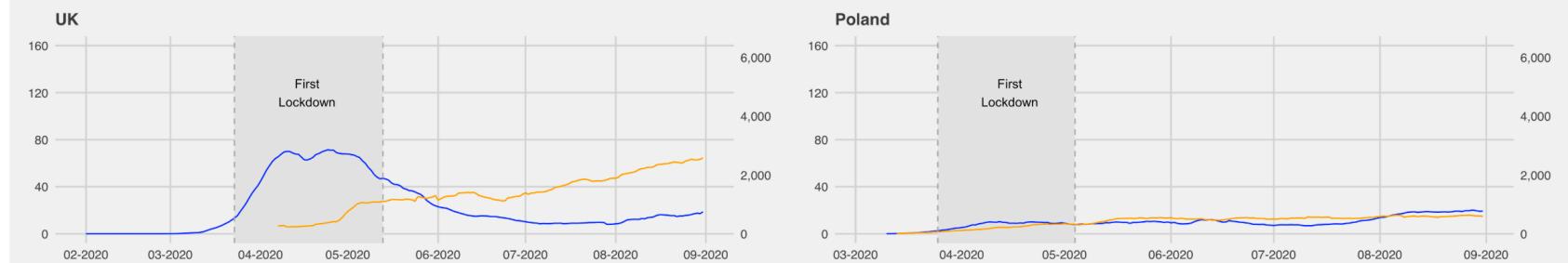
01.09.2020 – 27.11.2020

How did European Countries React to Wave 1?

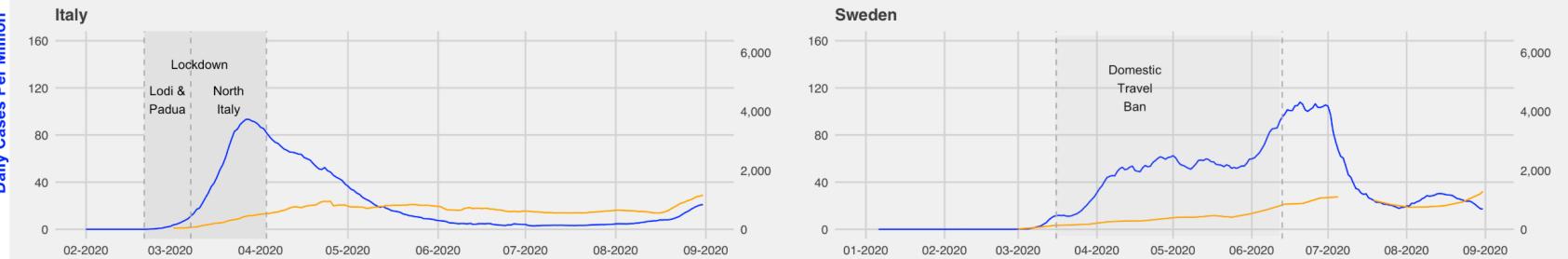
What Trend do we see



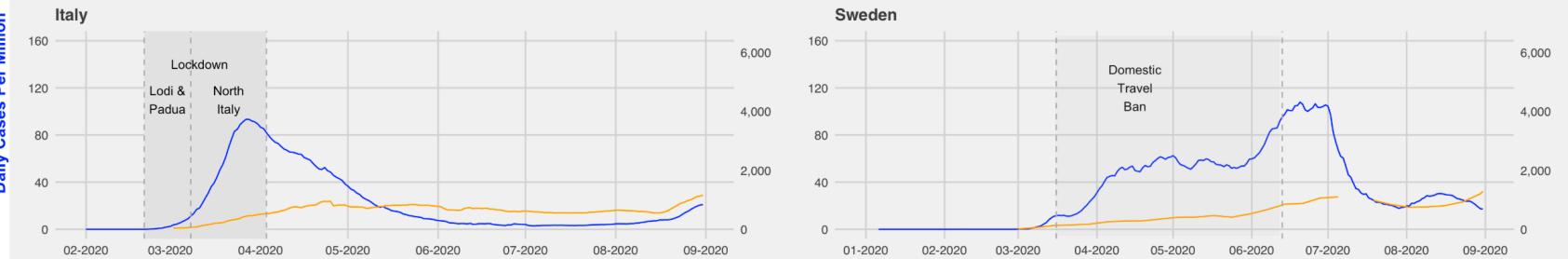
Late lockdown
with slow effect



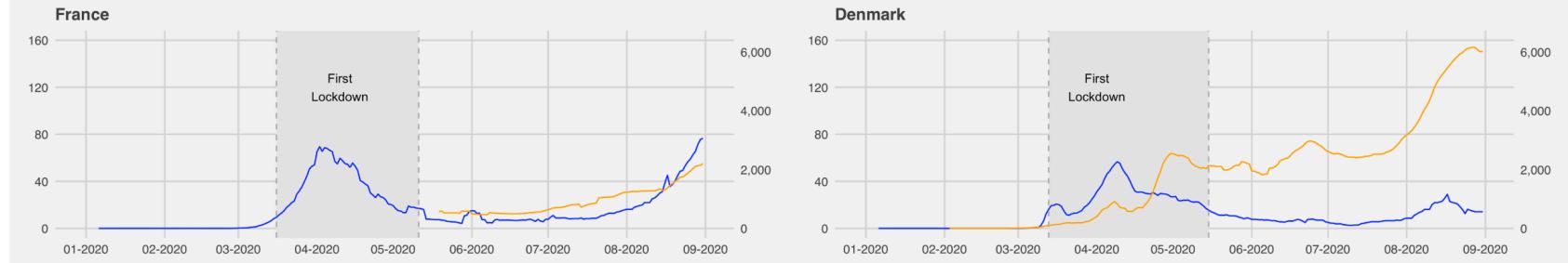
Fast lockdown
Low testing



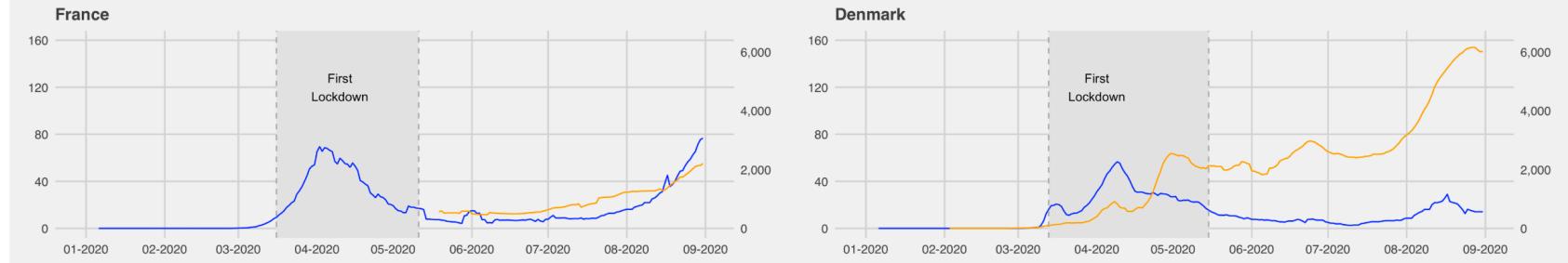
Local and strict
lockdown



No lockdown -
many cases
after loosening
restrictions



Late but
effective
lockdown



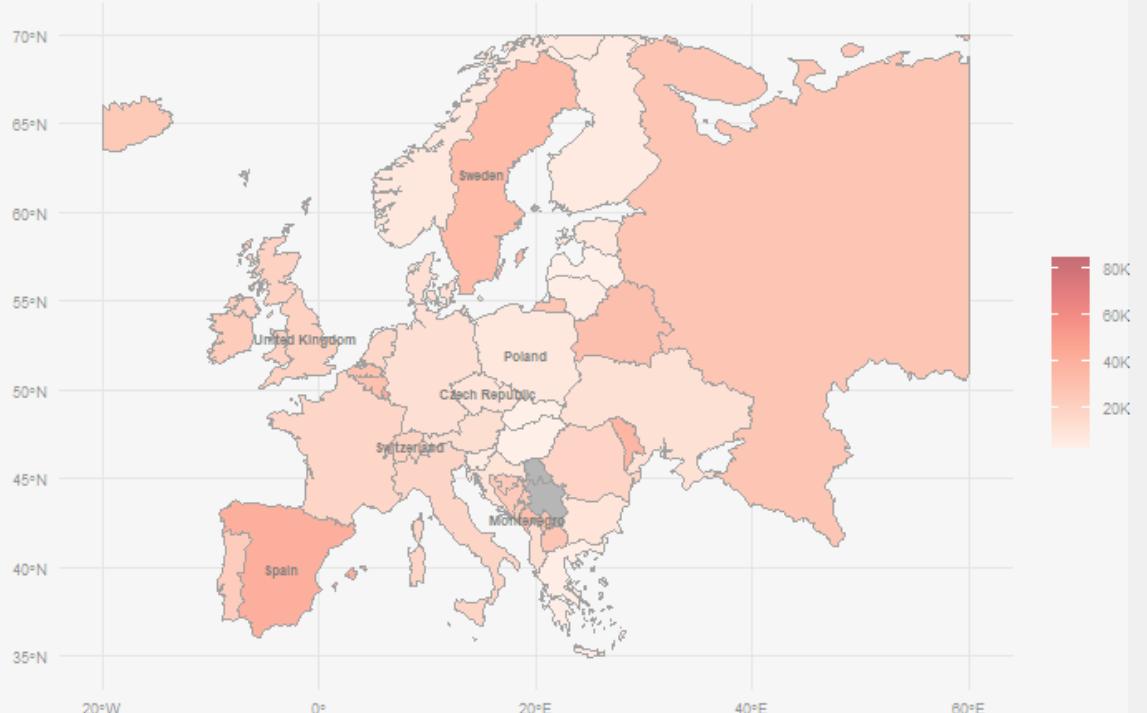
Early, hard
lockdown, and
strong testing

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...

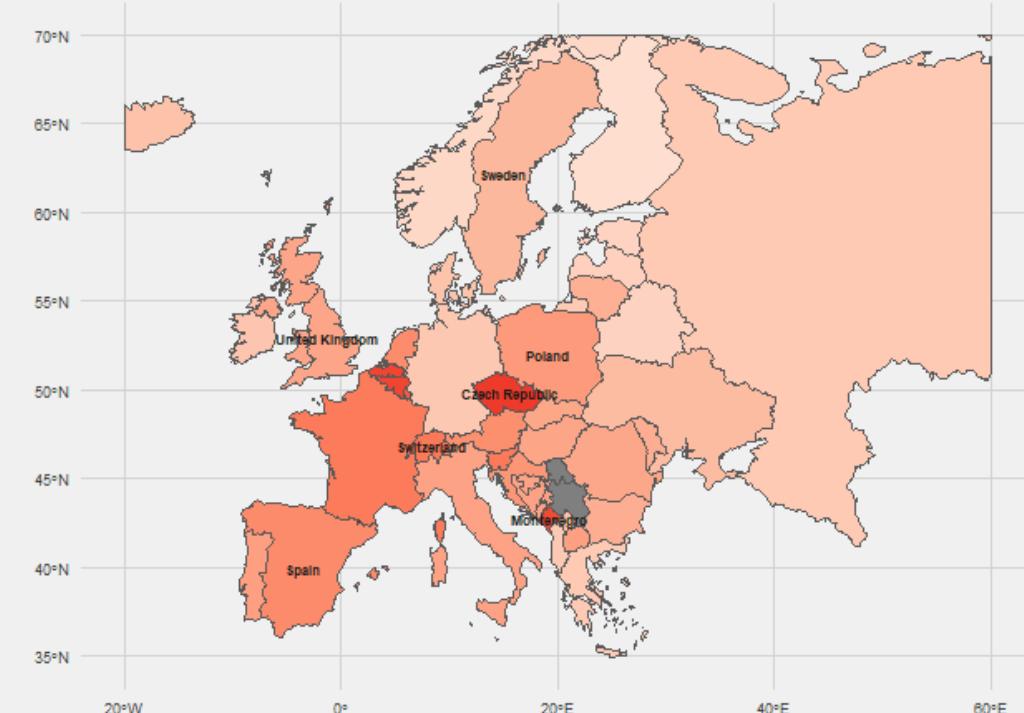
Total Cases Per Million for the First Wave



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



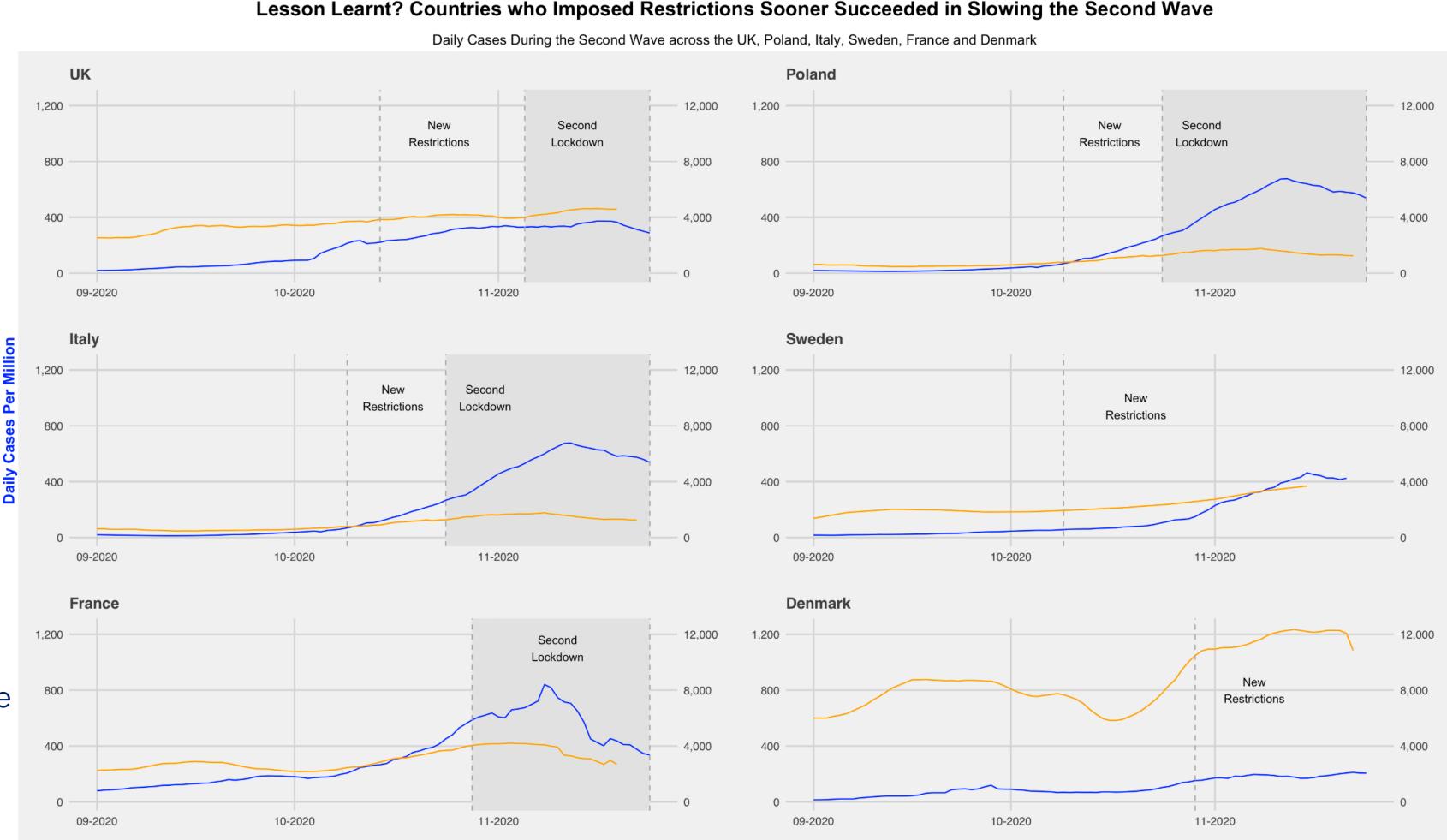
High testing and later lockdown



High cases despite early restrictions



Later but effective lockdown



Many cases even after lockdown



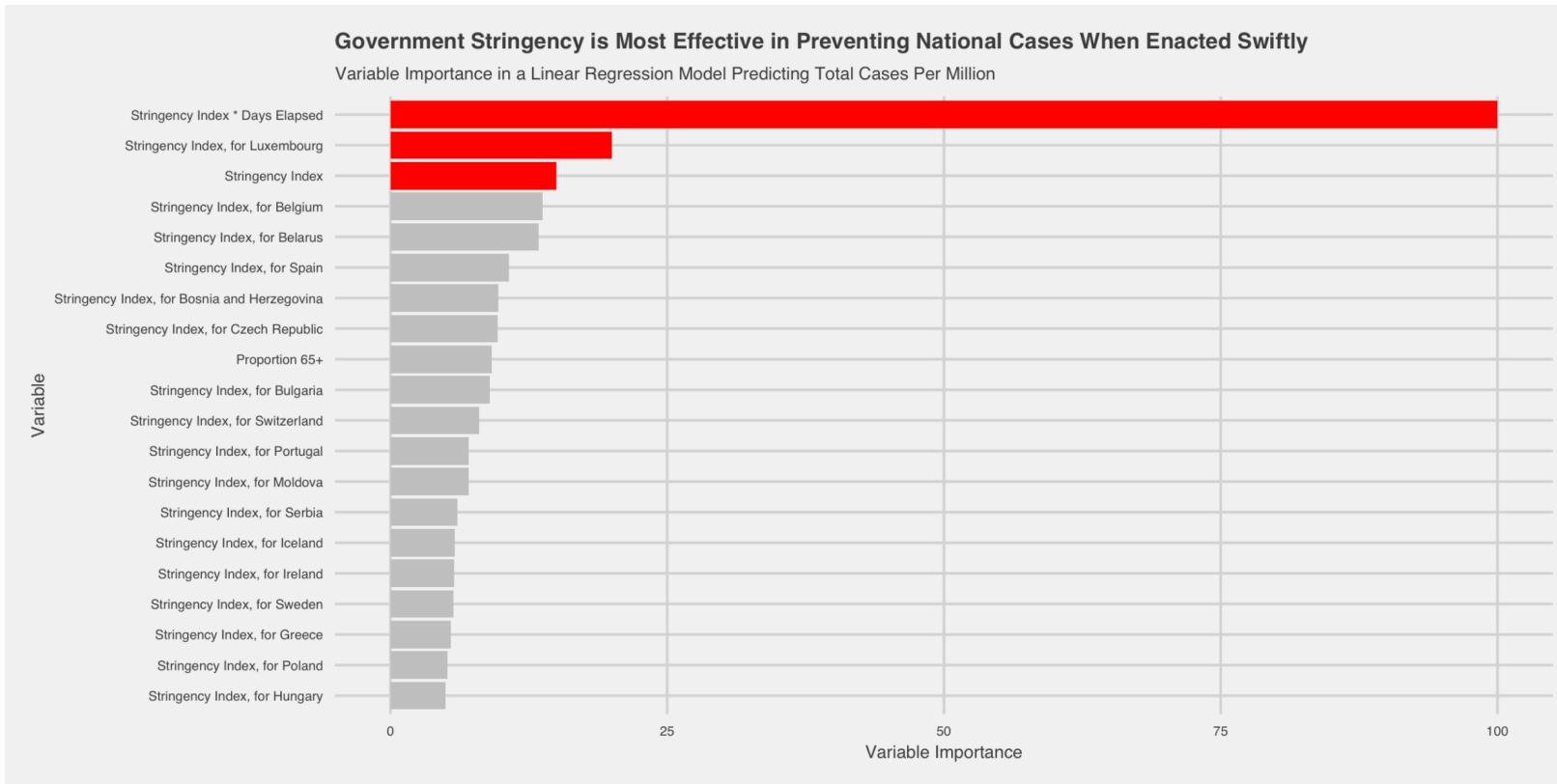
Many cases after loosening restrictions



Effective testing strategy after successful lockdown

How do Factors Affecting Cases Rank in Importance?

Sense check: a linear model empirically supports and enriches our 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.

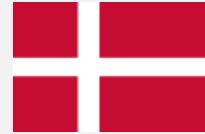
Have They Really Got it Under Control?

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?

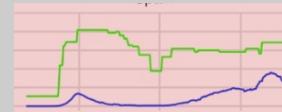
SPEED

Fast



Success

Slow



Failure

HOW

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

STRINGENCY

Most Important



Less Important

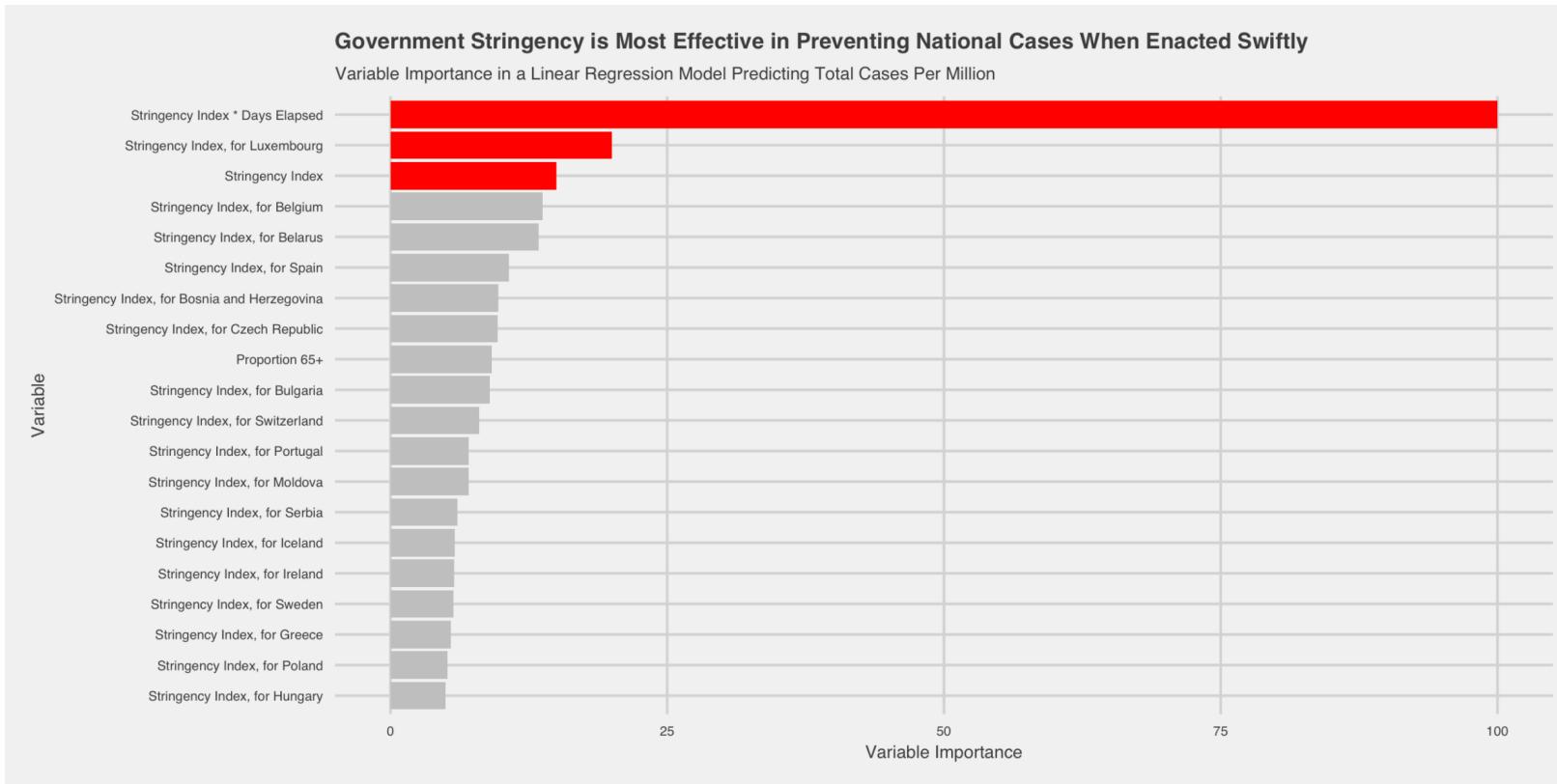


Q&A

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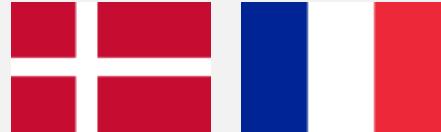
Have They Really Got it Under Control?

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WHERE

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

EARLY STRINGENCY



Denmark's **early** and **hard lockdown**, and France's **strict lockdown** both brought cases down rapidly, though **lack of testing** seems likely to explain much of France's apparent success.

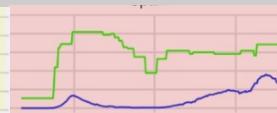
WHICH

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

FAST



SLOW



Timing is (almost) everything. The **sooner** stringency measures are taken, the **fewer cases and fatalities** countries can expect, **regardless of how stringent** they are.

WHAT

mitigation strategies have been most effective at combatting the virus?

STABLE



INDECISIVE



Effective

Ineffective

We identify a **pattern** between **stability** of **stringency measures** (whether high or low) and both **cases and deaths**: the **less indecisive** government policy, the **lower the spread** of cases and deaths. **Overconfidence** was **fatal** as Wave 2 approached.

STRINGENCY

Most Important

1. Luxembourg
2. Belgium
3. Spain
4. Czech Republic

Less Important

1. Poland
2. Greece
3. Sweden
4. Iceland

HOW

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

Stringency seems to matter most for **small countries** with **high population densities** (Belgium and Luxembourg), and for the **worst hit** countries (Czech Republic, Spain) with **slow, indecisive responses**.