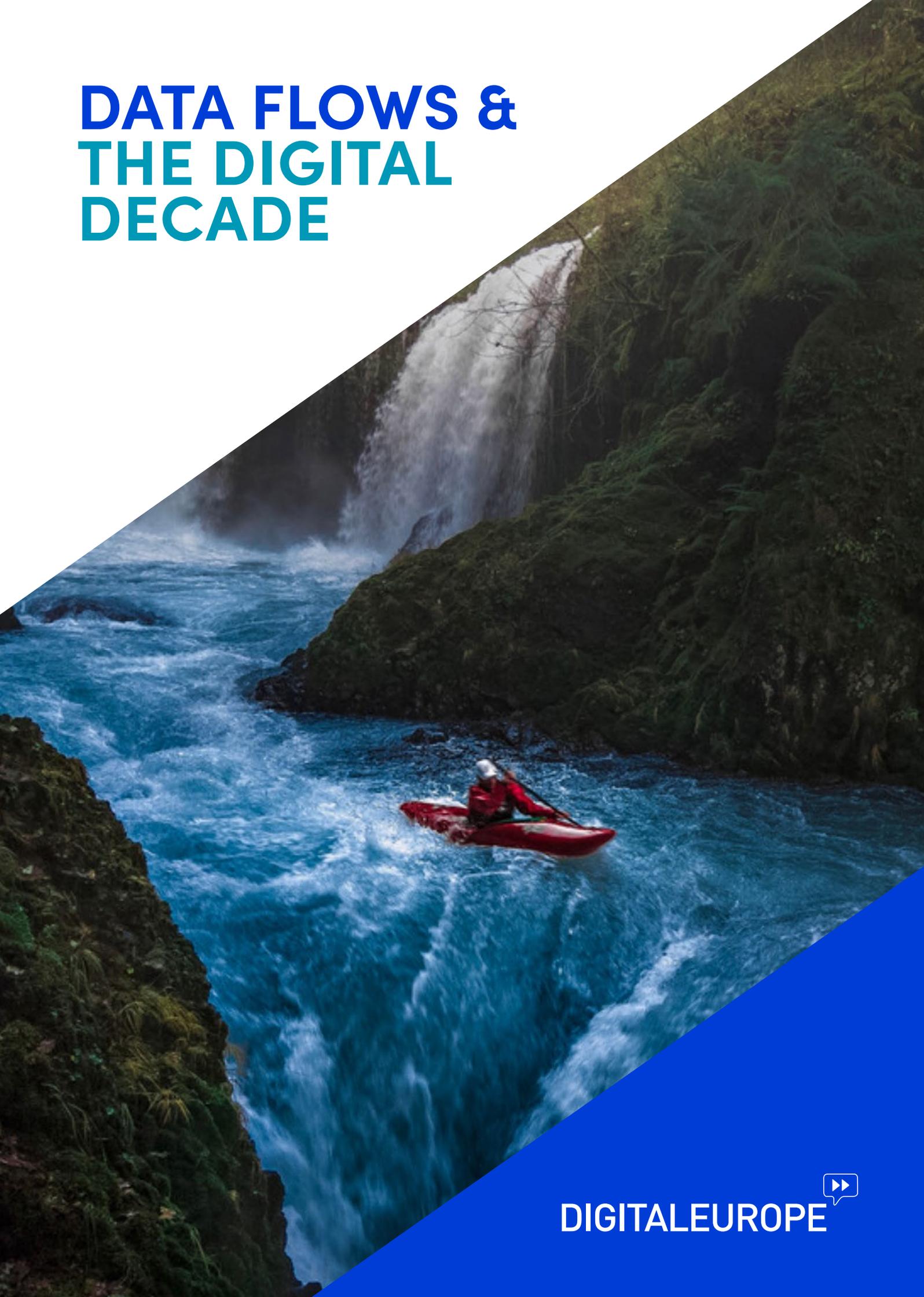


# DATA FLOWS & THE DIGITAL DECADE



DIGITALEUROPE 



# FOREWORD

**International data flows are vital to Europe's economic success. Setting the right framework for data flows now can have a huge positive impact on our economy by 2030.**

The European Commission recently launched its targets for the Digital Decade. Among them were that by 2030:

- ▶ **75 per cent** of European enterprises should have taken up cloud computing services, big data and artificial intelligence.
- ▶ Europe should **double its number** of unicorns.
- ▶ More than **90 per cent of European SMEs** should reach at least a basic level of digital intensity.

Underpinning each of these goals is the need to be able to transfer data smoothly and securely across borders. This study demonstrates that even in a limited assessment – by looking only at international trade – cross-border data transfers can have a huge positive impact on the economy by 2030 if we make the right decisions now.

The growth of the digital economy and the success of European companies is dependent on the ability to transfer data. This is especially so when we note that already in 2024, 85 per cent of the world's GDP growth is expected to come from outside the EU.<sup>1</sup> Our study shows that we could be missing out on around €2 trillion worth of growth by the end of the Digital Decade. This is roughly the same size as the Italian economy any given year.

Restrictions on cross-border data flows affect companies of all sizes and sector. The EU manufacturing sector stands to lose the most in absolute value – indeed, more than half of our total losses from data restrictions.

As SMEs account for almost a quarter of all goods exported from the EU, they will be heavily impacted. Sectors such as media and culture are some of the most impacted in relative terms, losing about 10 per cent of their exports. These are some of the industries that have made Europe what it is today.

A great example is that of our member Airbus. The latest A350 has 50,000 sensors on board collecting 2.5 terabytes of data every day. It shows just how much data has penetrated into traditional industries.

Data transfers are not only a key aspect of international trade, the value of which we have attempted to capture in this research, but are crucial for economic activity more at large. For example, moving HR information from a subsidiary to a parent company, transferring health data for ground-breaking research, or simply being able to use the perfect application for the tasks you need to do. Hampering the data flows behind these business decisions has a negative impact on all companies' economic prospects.

Europe stands at a crossroads. **It can either set the right framework for data transfers, and win the Digital Decade, or it can follow its current trend and move towards data protectionism, and lose.** Our analysis shows that the consequences of these decisions will have a huge impact on exports, jobs and growth, and will ultimately define whether Europe can reach its ambitious industrial and digital goals.

By 2030,

**75%**

of European enterprises should have taken up **cloud computing services, big data and artificial intelligence.**



**Hilary Mine**  
President  
DIGITALEUROPE



**Cecilia Bonefeld-Dahl**  
Director General  
DIGITALEUROPE

<sup>1</sup> Council of the European Union, Trade Policy Review – An Open, Sustainable and Assertive Trade Policy, 2021  
<https://data.consilium.europa.eu/doc/document/ST-6308-2021-INIT/en/pdf>

# Overview of findings



This study commissioned by DIGITALEUROPE and conducted by Frontier Economics shows that our policy decisions on international data transfers now will have significant effects on growth and jobs across the whole European economy by the end of the Digital Decade.

The study identifies sectors in the EU that rely heavily on data, and calculates the impact of restrictions to cross-border transfers on the EU economy up to 2030. These digitising sectors, across a variety of industries and business sizes, including a large proportion of SMEs, make up half of EU GDP. They are crucial to the Digital Decade's goal of enabling the digital transformation of businesses, and to companies' recovery across Europe as part of the EU's industrial strategy.

The study looks at two realistic scenarios, closely aligned with current policy debates.

The first, 'negative' scenario takes into account current restrictive interpretations of the *Schrems II* ruling from the Court of Justice of the EU, whereby data transfer mechanisms under the GDPR are made largely unusable. It also takes into account an EU data strategy that places restrictions on the transfers of non-personal data abroad. Further afield, it considers a situation where major trade partners tighten restrictions on the flow of data, including through data localisation.

In the second, 'optimistic' scenario, we look at what would happen if the EU safeguarded GDPR data transfers and managed to secure an international agreement on data flows at the World Trade Organization (WTO) that would lead to some degree of liberalisation.

## The study shows that:

- ▶ **Overall, Europe could be €2 trillion better off and gain two million jobs by the end of the Digital Decade** if we reverse current trends and harness the power of international data transfers. This is roughly the size of the entire Italian economy any given year.
- ▶ **The majority of the pain in our negative scenario would be self-inflicted.** The effects of the EU's own policy on data transfers, under the GDPR and as part of the data strategy, outweigh those of restrictive measures taken by our major trade partners.
- ▶ **All sectors and sizes of the economy are impacted across all Member States.** Data-reliant sectors make up around half of EU GDP. In terms of exports, manufacturing is likely to be hit the hardest by restrictions on data flows. This is a sector where SMEs make up a quarter of all exports.

## Key findings

In our negative scenario, which reflects our current path, **Europe could miss out on:**

**€1.3**  
trillion

**extra growth by 2030**, equivalent to the size of the Spanish economy in any given year

**€116**  
billion

**exports annually**, equivalent to Sweden's exports outside the EU, or those of the ten smallest countries of the EU combined in any given year

**1.3**  
million jobs

many of which are **highly skilled**

In our optimistic scenario, **the EU stands to gain:**

**€720**  
billion

**extra growth** by 2030, or 0.6 per cent GDP per year

**€60**  
billion

**exports per year**, over half coming from manufacturing

**700,000**  
jobs

The difference between these two scenarios is

**€2** trillion

in terms of **GDP for the EU economy** by the end of the Digital Decade

**25%**

**of input into the provision of healthcare consist of data-reliant products and services.** In this regard, data localisation requirements also hurt sectors that do not participate heavily in international trade

**58%**

**of the EU's export losses** in the negative scenario **come from an increase in its own restrictions** rather than from third countries' actions

**€3** trillion

**is a conservative estimation of what data transfers will be worth to the EU economy by 2030.** This is a conservative estimate because the model's focus is international trade – this excludes, for example, transfers within the same company

**€280**  
billion

**exports by data-reliant manufacturing SMEs in the EU.** In the negative scenario, exports from EU SMEs would fall by €14 billion, while in the optimistic scenario they would increase by €8 billion

**€60** billion

**of annual loss by the manufacturing sector.** Manufacturing is the sector that stands to lose the most. Proportionately, media, culture, finance, ICT and most business services, such as consulting, stand to lose the most – about 10 per cent of their exports. However, **these same sectors are those that stand to gain the most.**

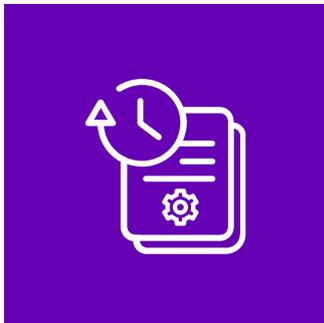
# Policy recommendations

The results of the study outline two very different paths forward. On the one hand, the current trajectory of the EU and its partners, namely a moderately restrictive scenario in which the EU restrains the usability of GDPR transfer mechanisms and introduces further conditions for transfers of non-personal data, and in which trade partners increase their overall

levels of restrictions on cross-border data flows. On the other hand, a positive scenario where the EU and major trade partners adopt measures to facilitate cross-border data transfers. The difference between the two amounts to a cumulative difference of €2 trillion by 2030, or 1.5 per cent of the EU's GDP.

## The EU should:

1



Ensure **GDPR transfer mechanisms** can be relied on for international data transfers

2

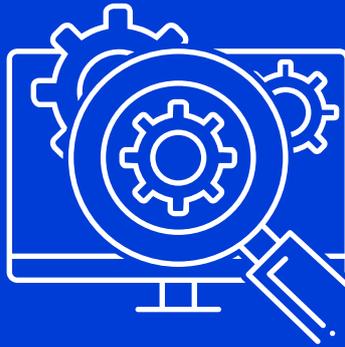


Safeguard international data transfers when implementing the **Data Strategy**

3



Secure a deal on data flows as part of the **WTO eCommerce negotiations**



# Study methodology

The data in this report is based on an econometric study carried out by Frontier Economics based on OECD trading data. The economic impact is calculated by considering data flow restrictions as an increased cost to the international trade of data-reliant industries. Data-reliant industries, as defined by the OECD, represent about half of the European economy. This is a conservative assessment as it does not take into consideration, among other elements, the impacts of restrictions on intra-company data flows (which we know to be significant, but difficult to model) and other policy measures that might accompany data localisation. The study was commissioned by DIGITALEUROPE, and not sponsored by any individual member. The full Frontier Economics study, including an in-depth description of the methodology, can be accessed [here](#).





The EU stands at a crossroads. It can either safeguard international data flows, and win the Digital Decade, or limit them, and lose.

The difference between moderate restriction and a clear framework to safeguard international data flows is equivalent to €2 trillion by 2020, or 1.5 per cent of GDP per year. This also represents the loss of 1.3 million highly skilled jobs.

**The yearly impact is equivalent to about two-thirds of the value of the EU's pre-pandemic data economy.<sup>2</sup>**

**The difference between a moderately restrictive and a moderately liberalising scenario is more than €2 trillion, or about 2 per cent of GDP**

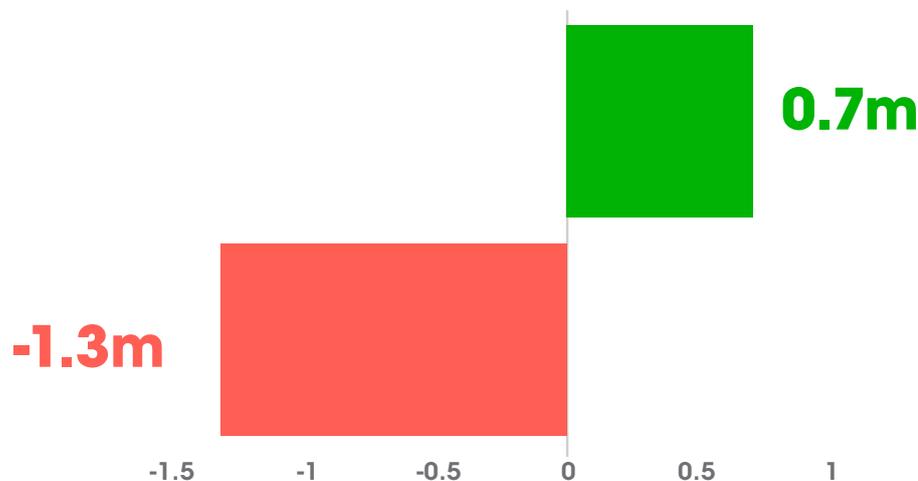
Cumulative GDP impact to 2030 on EU economy (in billions)



Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database  
Note: Figures expressed in 2020 EUR, and include rescaling from 2015 TiVA year to 2019 baseline year

**A moderately restrictive scenario costs the EU 1.3 million high-value jobs - 1 in 7 of Europe's high-tech employees<sup>3</sup>**

Number of employees gained or lost as result of different scenarios (in millions)



Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database and Eurostat NAME\_A64\_E

<sup>2</sup> The value of the data economy in the EU27 was calculated at €325 billion in 2019. See Final Study Report: The European Data Market Monitoring Tool, available at [https://datalandscape.eu/sites/default/files/report/D2.9\\_EDM\\_Final\\_study\\_report\\_16.06.2020\\_IDC\\_.pdf](https://datalandscape.eu/sites/default/files/report/D2.9_EDM_Final_study_report_16.06.2020_IDC_.pdf)

<sup>3</sup> Eurostat, Employment in technology and knowledge intensive sectors, 2020 [https://ec.europa.eu/eurostat/databrowser/view/htec\\_emp\\_nat2/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/htec_emp_nat2/default/table?lang=en)

|                           | Negative  | Optimistic  |
|---------------------------|---|---|
| <b>Description</b>        | Represents the current trend towards moderate increase in restrictiveness   | If the EU and major trading partners adopt measures to facilitate cross-border data transfers   |
| <b>Policy assumptions</b> | This scenario aims to model: <ul style="list-style-type: none"> <li>• Unreliability of GDPR transfer mechanisms</li> <li>• Additional restrictions implemented under the EU's data strategy (e.g. Data Governance Act and Data Act)</li> <li>• No international agreement at the WTO on data transfers</li> </ul> | This scenario aims to model: <ul style="list-style-type: none"> <li>• Safeguarded GDPR transfer mechanisms</li> <li>• Successful negotiation of an enhanced Privacy Shield</li> <li>• Swift agreement at the WTO on eCommerce negotiations</li> </ul> |
| <b>Impact</b>             | Such a scenario leads to a reduction in EU exports by ~4 per cent, and in 1 per cent of GDP per year. Cumulative effect of €1.3 trillion  | EU exports as a whole grow by over 2 per cent per year, adding 0.6 per cent to GDP per year. Cumulative effects to 2030 of €720 billion, in today's money   |

\*All scenarios measured against current situation as baseline, assuming GDPR transfer mechanisms apply.

We also attempted to calculate the overall value of international data flows to the European economy. This was done by modelling what would be the economic impact on EU trade of going to the maximum level of restrictiveness, in both the EU and third countries. While this approach is limited in that it focuses on trade and doesn't account for all the cascading effects of international data

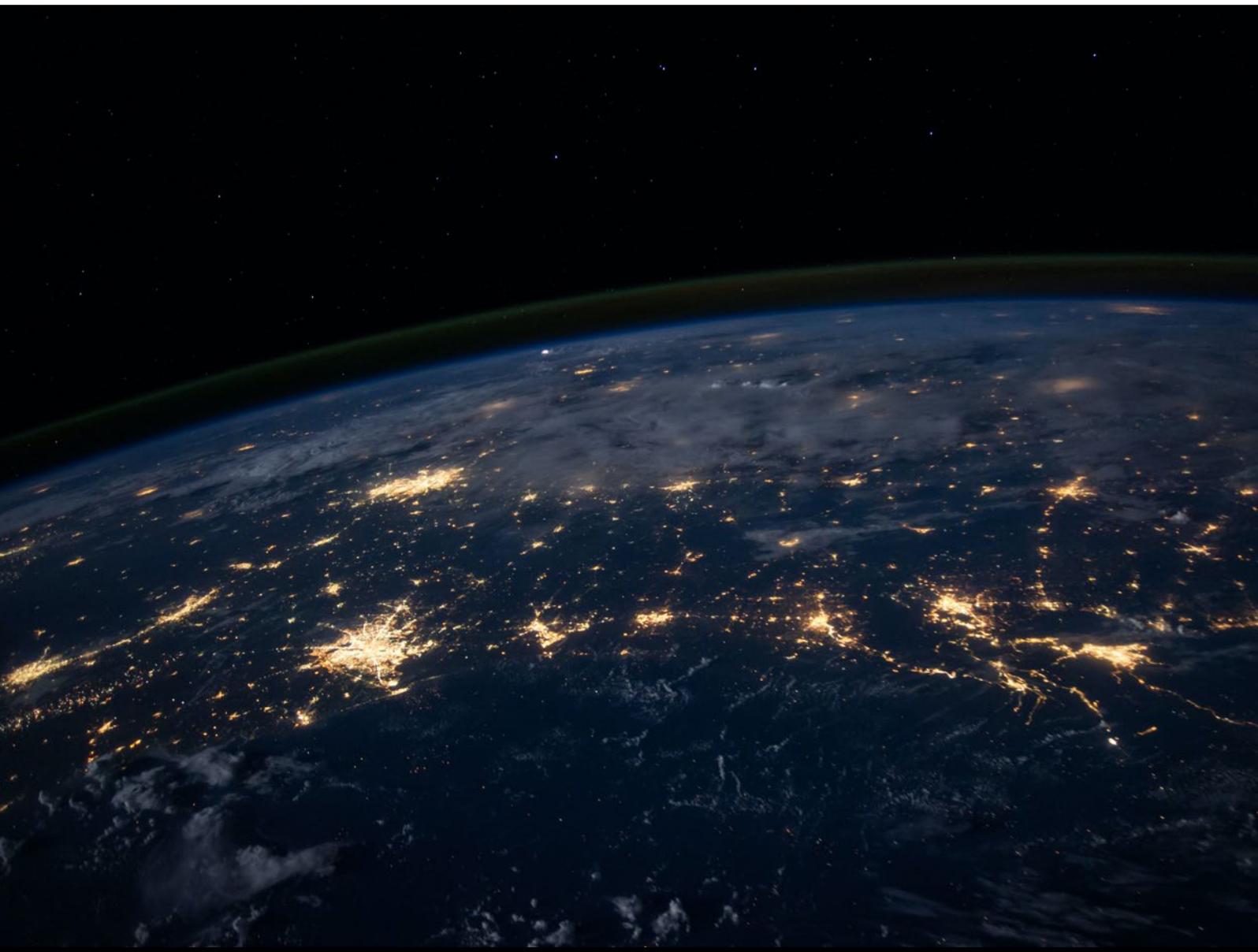
flows on the whole economy, it does give a conservative estimate of how much current levels of cross-border data flows are worth to the EU. This approach suggests that the impact of a loss of cross-border data flows on exports from data-reliant sectors would lead to **an annual reduction in EU GDP worth €330 billion, or around 2.5 per cent of total EU GDP.**



**Even though the figures above are significant, they remain conservative.**

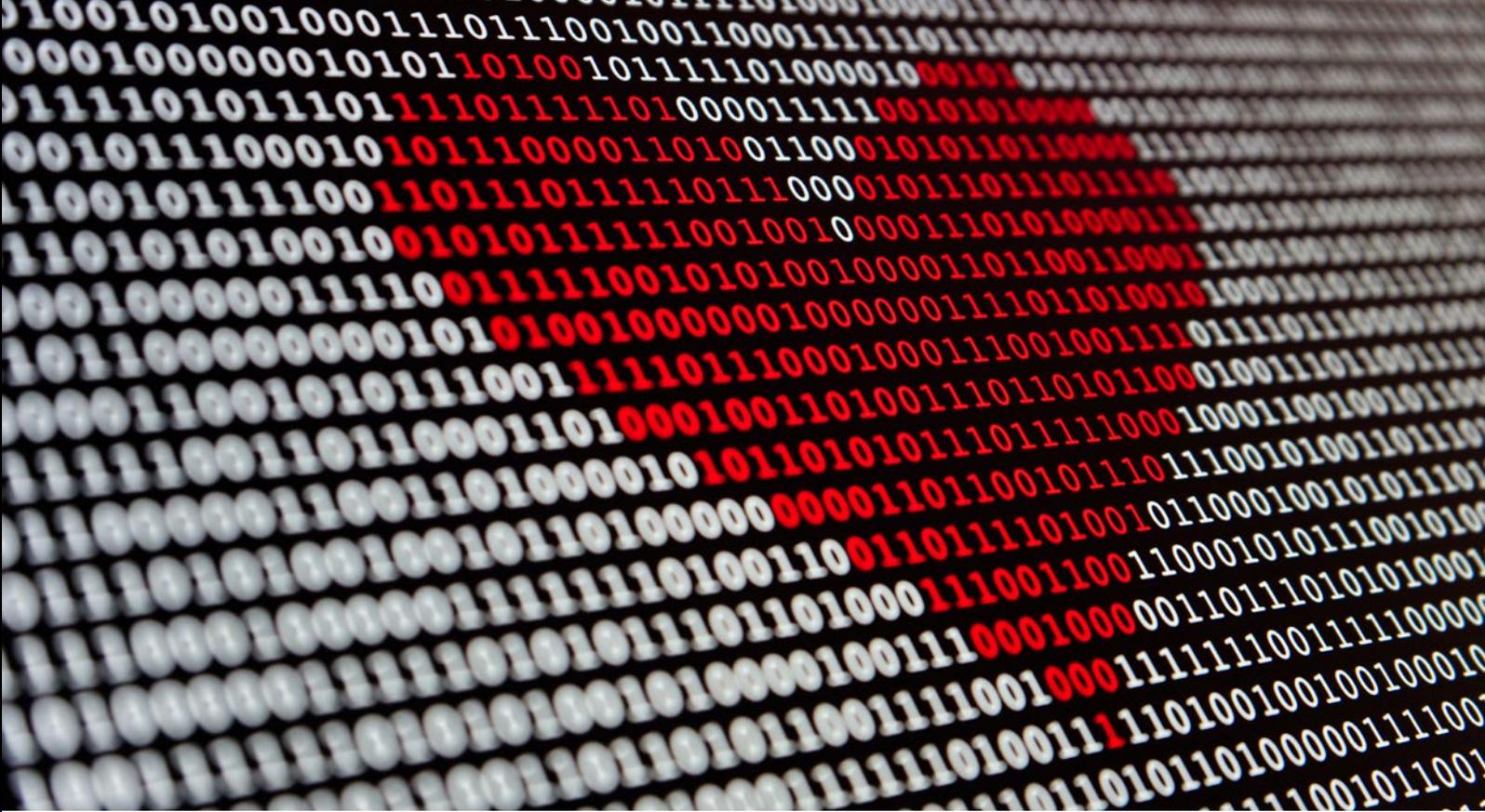
This is because the study:

- ▶ **Calculates the economic impact by analysing transactions between firms.** The significant impacts of data restrictions on internal flows, i.e. intra-company, are therefore not captured.
- ▶ **Does not model all policy measures that affect data flows.** For instance, localisation requirements in terms of business operations, limitation on the legal structure of data providers or ownership restrictions are not taken into account.
- ▶ **Does not take into account the longer-run effects of data restrictions on the EU's innovation capacity or its productivity.** For example, research and development activities and product testing often occur through cross-border value chains that involve large-scale flows of different types of data (industrial, IP and personal data).
- ▶ **Does not take into account that the structure of the EU economy may change or that sectors may become increasingly reliant on data.** The model only looks at the trade impact on data-reliant sectors as they were defined by the OECD in 2015.





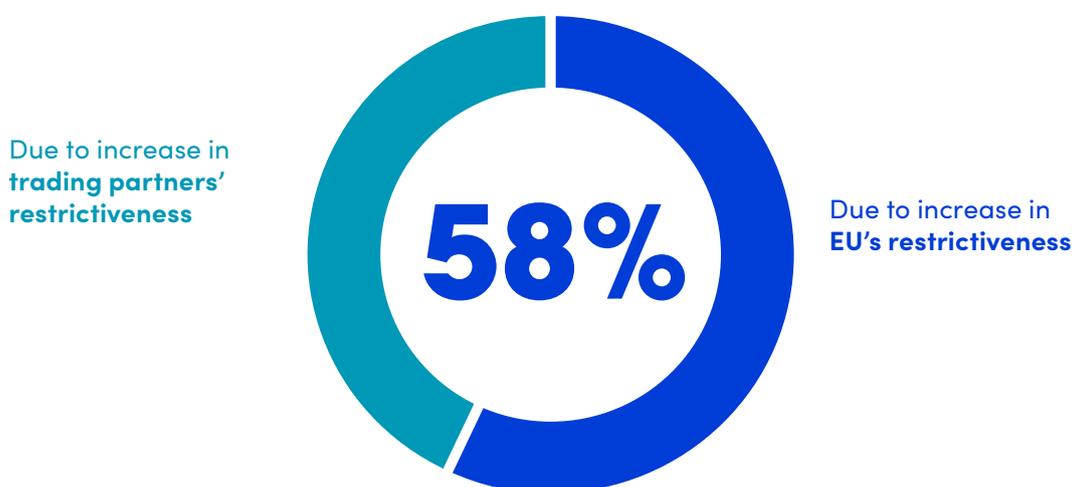
**Most of the pain would be self-inflicted. Adopting restrictive measures in the EU, from GDPR interpretations to data strategy measures, would severely harm the EU's economy.**



The effects of the EU's own restrictions on cross-border data flows play a predominant role compared to measures taken by third countries. This underlines the importance of getting major policy decisions right. Notably, achieving a realistic assessment of what supplementary measures are necessary under GDPR transfer mechanisms, achieving strong adequacy decisions, and making sure that provisions in the Data Governance Act and the Data Act proposals do not impose undue requirements on international data flows.

### Negative impact of EU's own restrictions outweighs third-country measures limiting data flows

Per cent of total GDP impact in negative scenario due to EU's vs trading partners' increase in restrictiveness



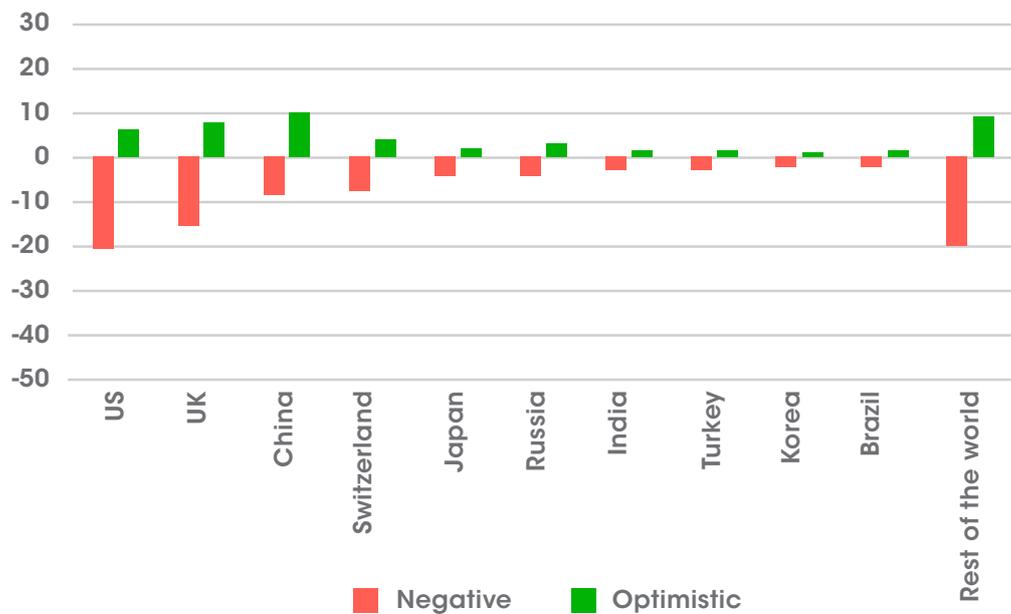
Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database

The study, however, also underlines the importance of securing the right framework for data transfers in international trade agreements with the EU's trading partners. This can be done through a successful definition of data flows language as part of the WTO eCommerce negotiations, and through bilateral agreements.

The top ten countries the EU sends more data to and from are the US, the UK, China, Switzerland, Japan, Russia, India, Turkey, Korea and Brazil. Together they account for about two-thirds of the value of data transfers worldwide.

### EU losses from restrictions to US transfers and wins from relaxed measures in China are considerable

Changes to EU exports by trading partner and scenario (in billion €)



Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database

Note: Figures expressed in 2020 EUR, and include rescaling from 2015 TiVA year to 2019 baseline year

- ▶ **The US is the EU's largest data partner.** It is the partner with whom the EU stands to lose most from increases in restrictiveness. This underscores the importance of a strong negotiation of an enhanced Privacy Shield, and of further transatlantic collaboration on technology and trade. The same is true of the UK, which is a close second.
- ▶ **China is the EU's third largest data partner.** It is also the trading partner with whom the EU stands to gain the most from the establishment of the right international trade framework for data transfers.





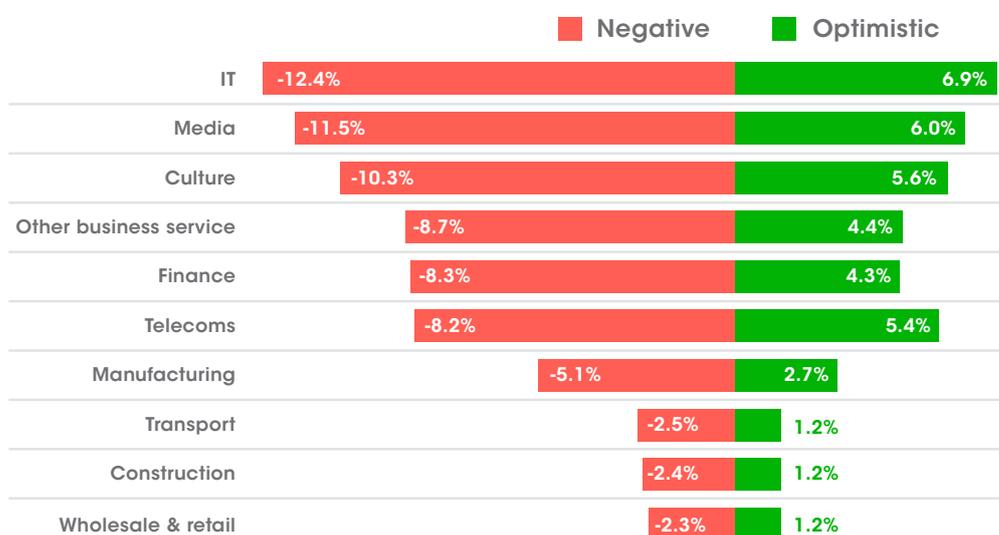
**All sectors and sizes  
of the economy are  
impacted across all  
Member States.**

International data flows are essential across the EU's data-reliant economy: all countries, sectors and firm sizes would be significantly impacted both in the negative and optimistic scenarios.

In absolute terms, manufacturing would be the hardest hit sector, losing €61 billion every year – more than half of total losses. In relative terms, ICT, media, culture, business services, finance and telecoms would be most impacted, losing about 10 per cent of their exports.

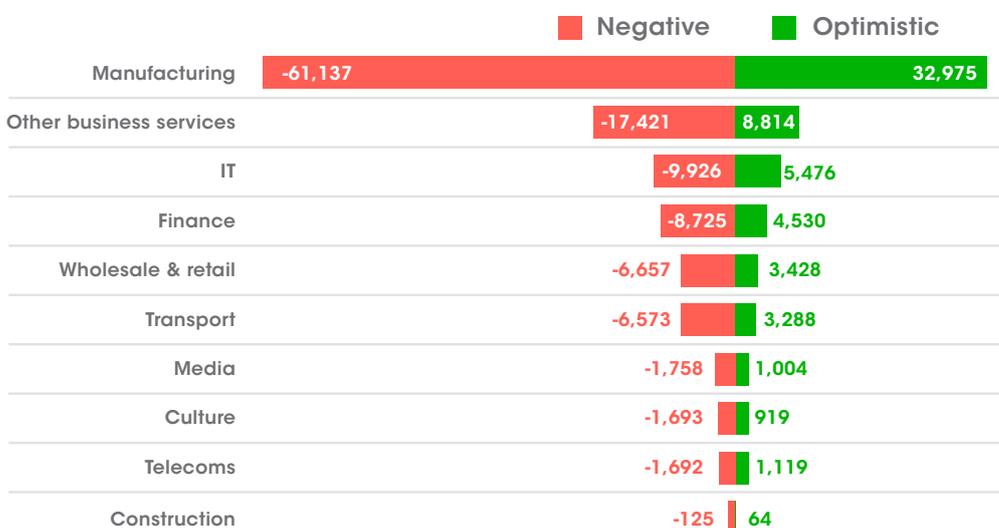
### Critical EU industries are in the line of fire. Manufacturing is hardest hit in absolute terms, while ICT, media, culture, business services, finance & telecoms each lose 10 per cent of their exports

Per cent of decrease/increase of sector exports for negative and optimistic scenarios



Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database

Absolute € value of increase/decrease of sector exports for negative and optimistic scenarios

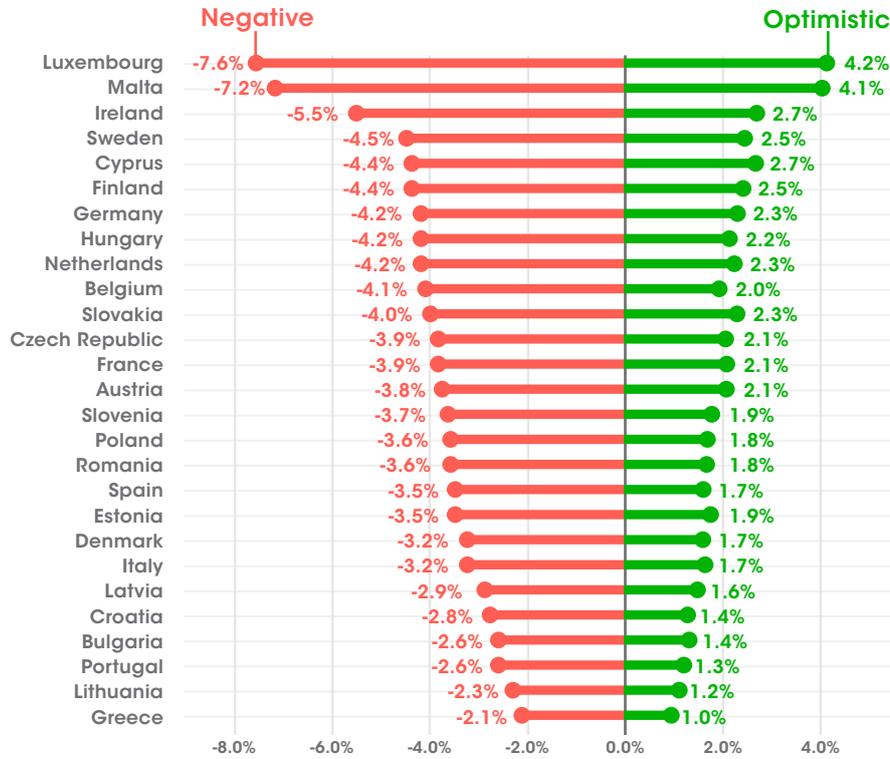


Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database

Note: Figures expressed in 2020 EUR, and include rescaling from 2015 TiVA year to 2019 baseline year

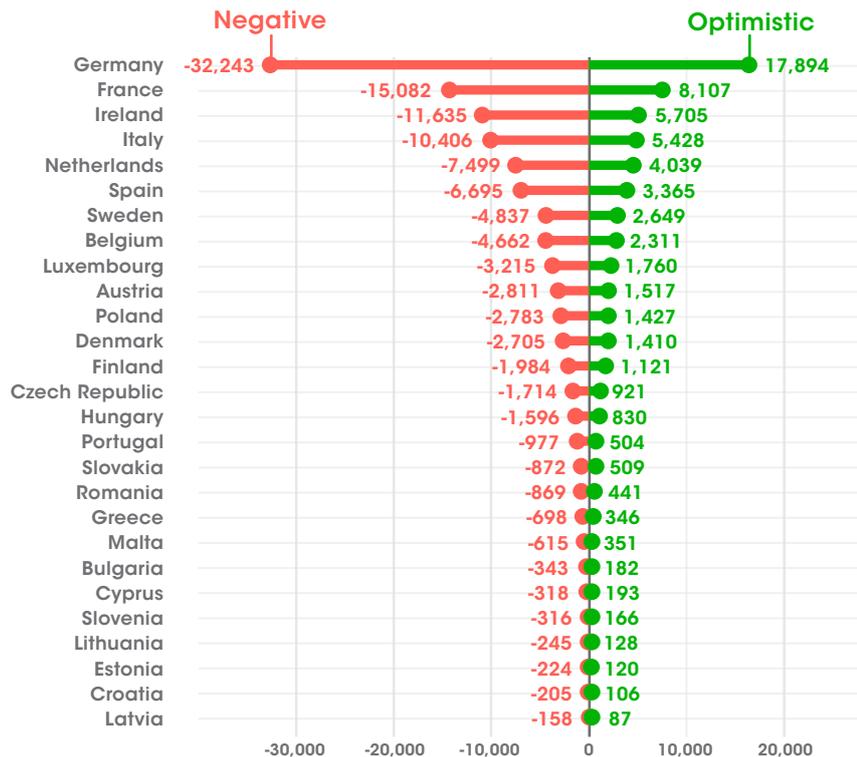
## Data flow restrictions impact all European countries, reducing exports by 4 per cent on average

Per cent of decrease/increase of country exports for negative and optimistic scenarios



Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database

Absolute value in million € of increase/decrease of country exports for negative and optimistic scenarios



Source: Frontier Economics analysis of OECD Trade in Value Added (TiVA) Database

Note: Figures expressed in 2020 EUR, and include rescaling from 2015 TiVA year to 2019 baseline year

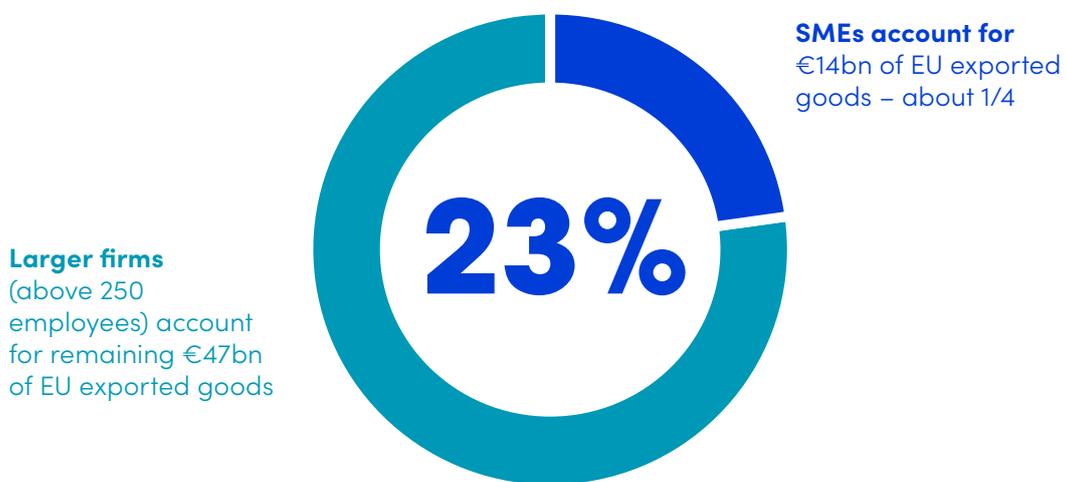
**The effect of data policies on SMEs is also likely to be significant.** This is because data policies often impose fixed costs on businesses, and smaller firms have usually a harder time absorbing those fixed costs than larger companies.

In addition, SMEs account for a significant proportion of the EU's exports from data-reliant sectors.

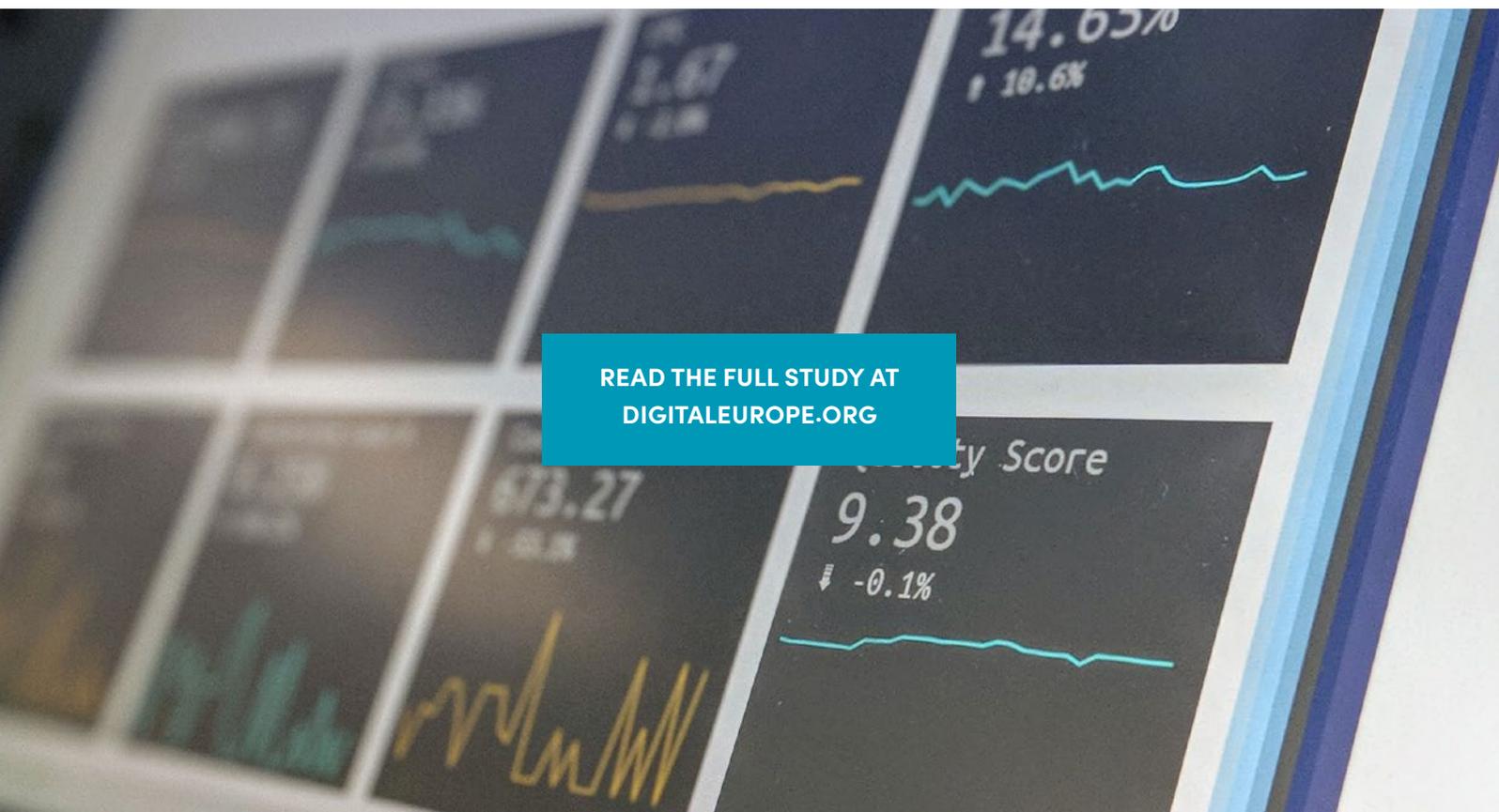
For instance, in the case of manufacturing, SMEs account for 23 per cent of goods exported from the EU.

### **In manufacturing, hardest hit sector by data flow restrictions, nearly a quarter of exports come from SMEs**

Total yearly impact in negative scenario incurred by manufacturing small and medium-sized enterprises (SMEs)



Source: Frontier analysis of Eurostat Structural Business Statistics data



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