

# 2023

## ECONOMIC REPORT

Evolution of the European graphic industry

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INTERGRAF

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**intergraf 2023**

# Introduction

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## Presentation of Intergraf

Intergraf is the European Federation for Print and Digital Communication. It represents 23 national printing federations in 22 countries in Europe. Intergraf's main task is to promote and protect the interests of the graphic industry and to enhance the sector's competitiveness through lobbying, informing and networking.

Intergraf covers a wide range of European policies related to the graphic industry and interacts with the European institutions. Moreover, Intergraf is the source of information for its members regarding the different policies of the European Union affecting the graphic industry. Intergraf has also a comprehensive network at European level covering the entire print value chain as well as at international level. It is active on several platforms and represented in different bodies in order to defend the interests of the graphic industry.

For more information on Intergraf and its member federations, please visit the Intergraf website: [www.intergraf.eu](http://www.intergraf.eu)

## Presentation of the report

This report provides an overview of available data on the European graphic industry, as well as highlights about the economic development of sectors which are relevant to the graphic industry, including supplying industries and print buyers. Data cover when available EU-27, the UK, Switzerland, Norway and Iceland. For trade information, EU-27 data are provided.

For the general economic situation (chapter 1), the report is based on information from the OECD and the European Commission (DG Economic and Financial Affairs). The descriptions and economic data are from both institutions.

Official statistics made available by Eurostat are the main source of information for the chapter on the European graphic industry (chapter 2). Data have been processed by Intergraf. Data are collected from a very large base, which include all sizes of companies including one-person companies. Since 2008, the key indicators extracted from the structural business statistics of the Eurostat database are being compiled on the classification NACE Rev. 2. Comparisons with older figures can still highlight significant breaks in some historical series. Classifications (NACE Rev. 2, PRODCOM and Combined Nomenclature) applicable to the data provided in the reported are explained in annex 6.1.

We are thankful to Smithers for their contribution in chapter 3. Information in the market report (chapter 4) is from Eurostat and from recognised European trade associations (CEPI, EUROGRAPH, EUPIA, FEP).

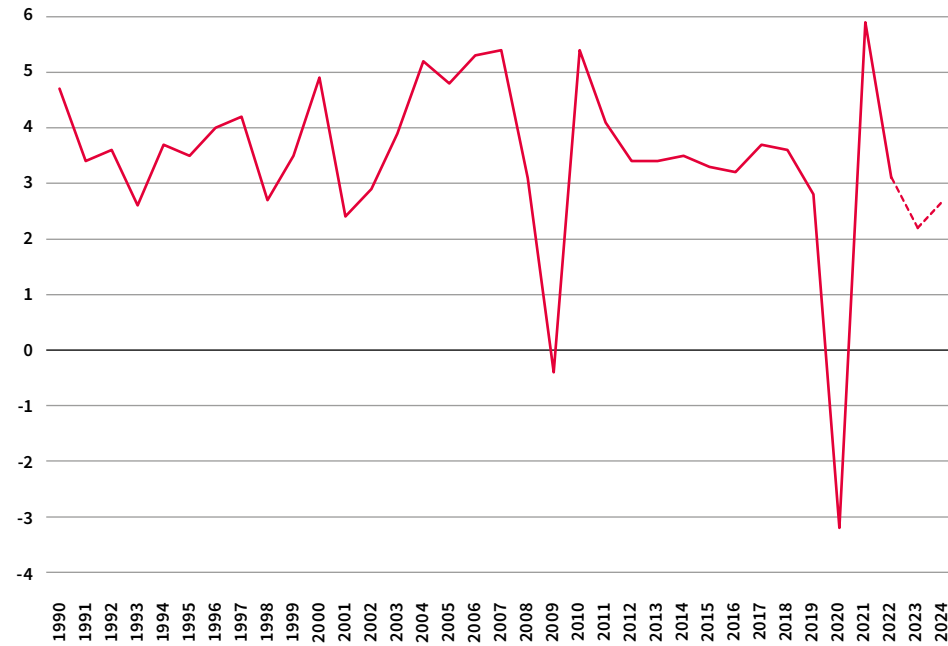
We are grateful to our member federations who contribute with qualitative and quantitative data to the country reports (chapter 5).

Annexes (chapter 6) include the information on classification and the supporting data used in the different chapters.

# 1.1 Global economic situation

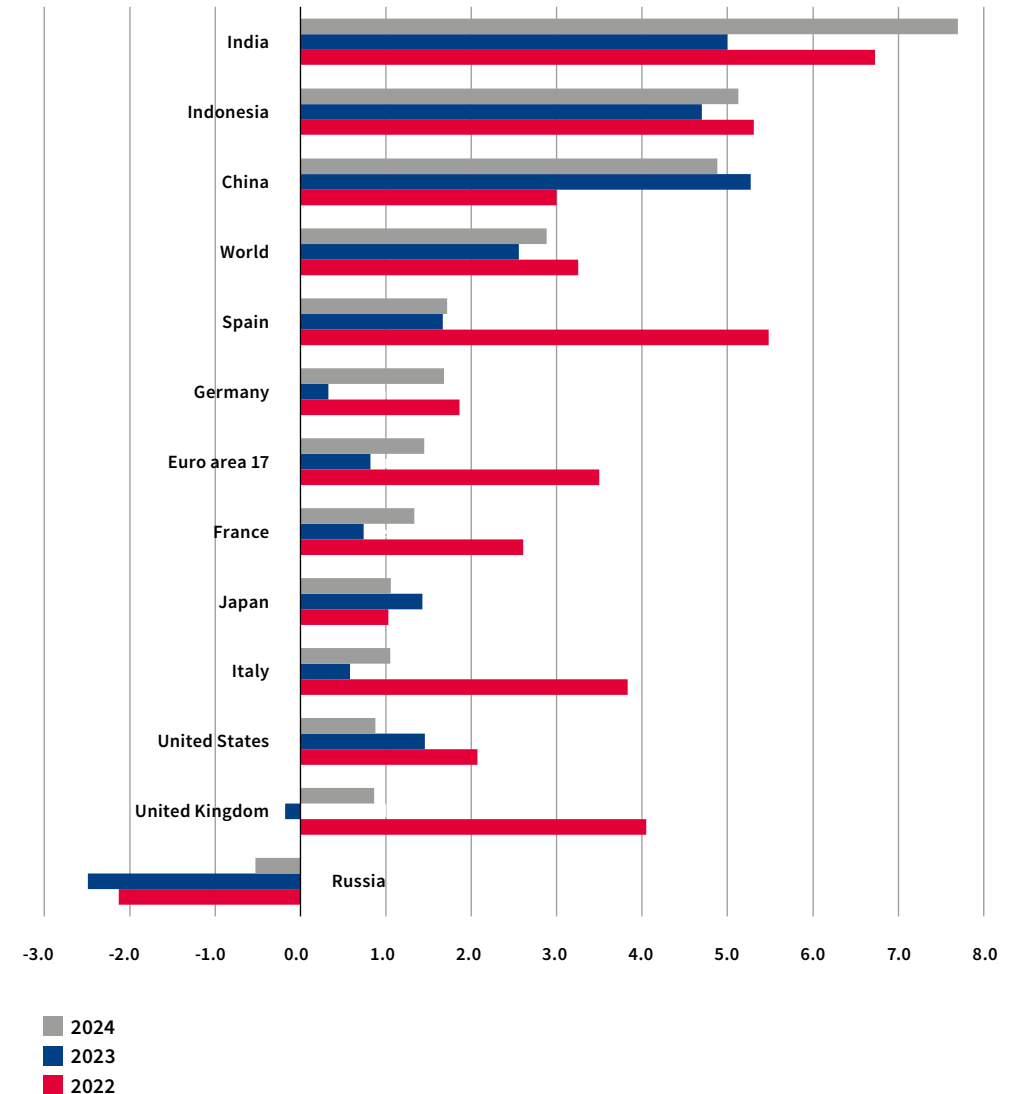
Source: OECD

World gross domestic product, in %-change, 1990-2024 (2023 and 2024 are projections)



- Global growth slowed in 2022 to 3.2%, more than 1 %-point weaker than expected at the end of 2021, mainly weighed down by Russia's war of aggression in Ukraine and the associated cost-of-living crisis in many countries.
- World GDP growth is projected to remain at below-trend rates in 2023 (2.6%) and 2024 (2.9%).

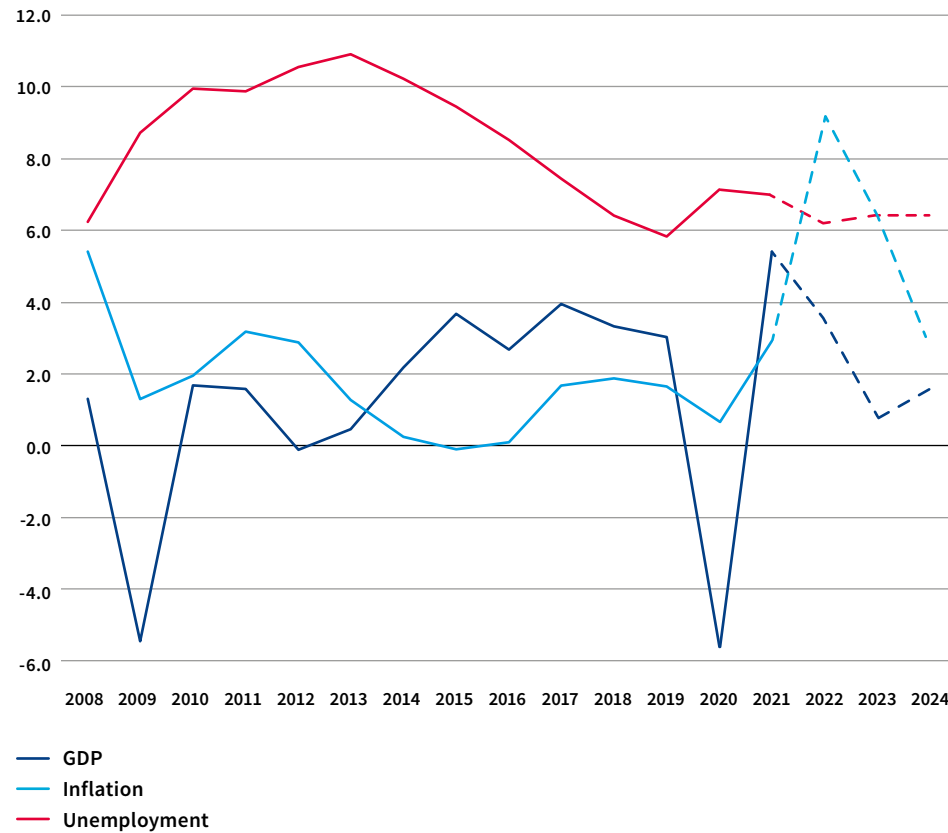
Real GDP growth projections, OECD Economic Outlook, March 2023, year-over-year, %



## 1.2 European economic situation

Source: Winter forecast 2022, European Commission, Economic and Financial Affairs, February 2023

GDP growth, inflation rate, unemployment rate, Europe (EU27), in %, 2008-2024

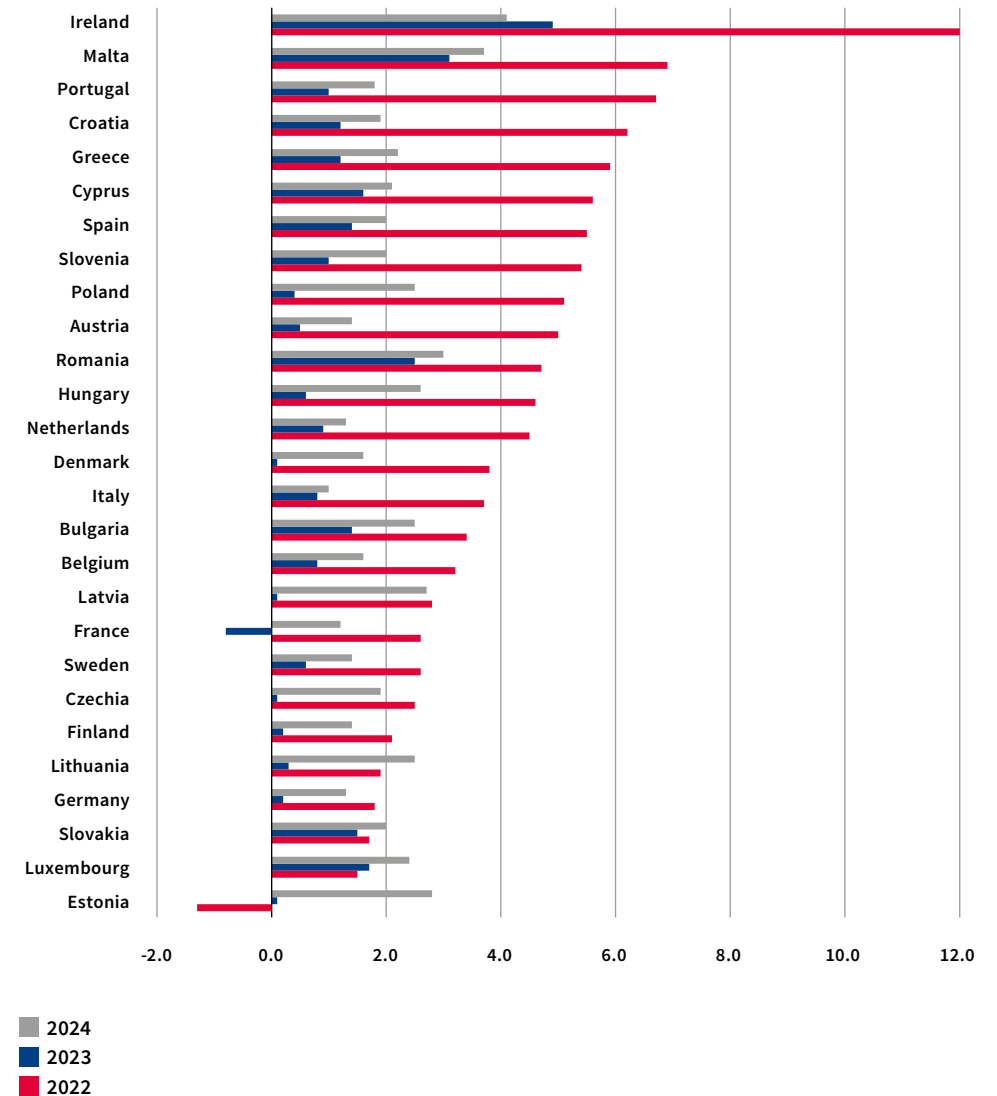


■ EU GDP growth was at 3.5% in 2022 and is expected to slow down to 0.8% in 2023 and 1.6% in 2024.

■ EU inflation rate reached 9.2% in 2022 and is expected to be at 6.4% in 2023 and down to 2.8% in 2024.

■ EU unemployment rate was 6.2% in 2022 and is expected to be at 6.5% and 6.4% respectively in 2023 and 2024.

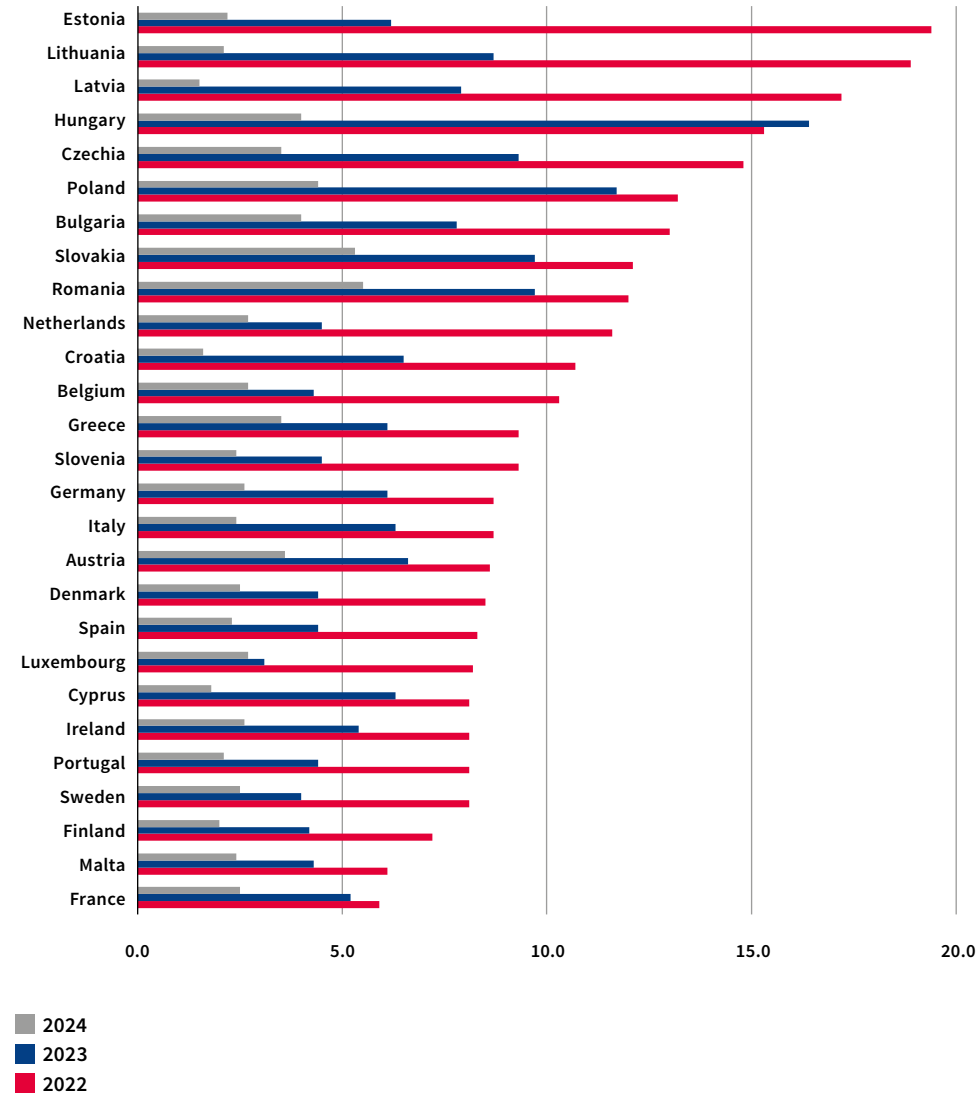
GDP growth rate, 2022-2024, in %



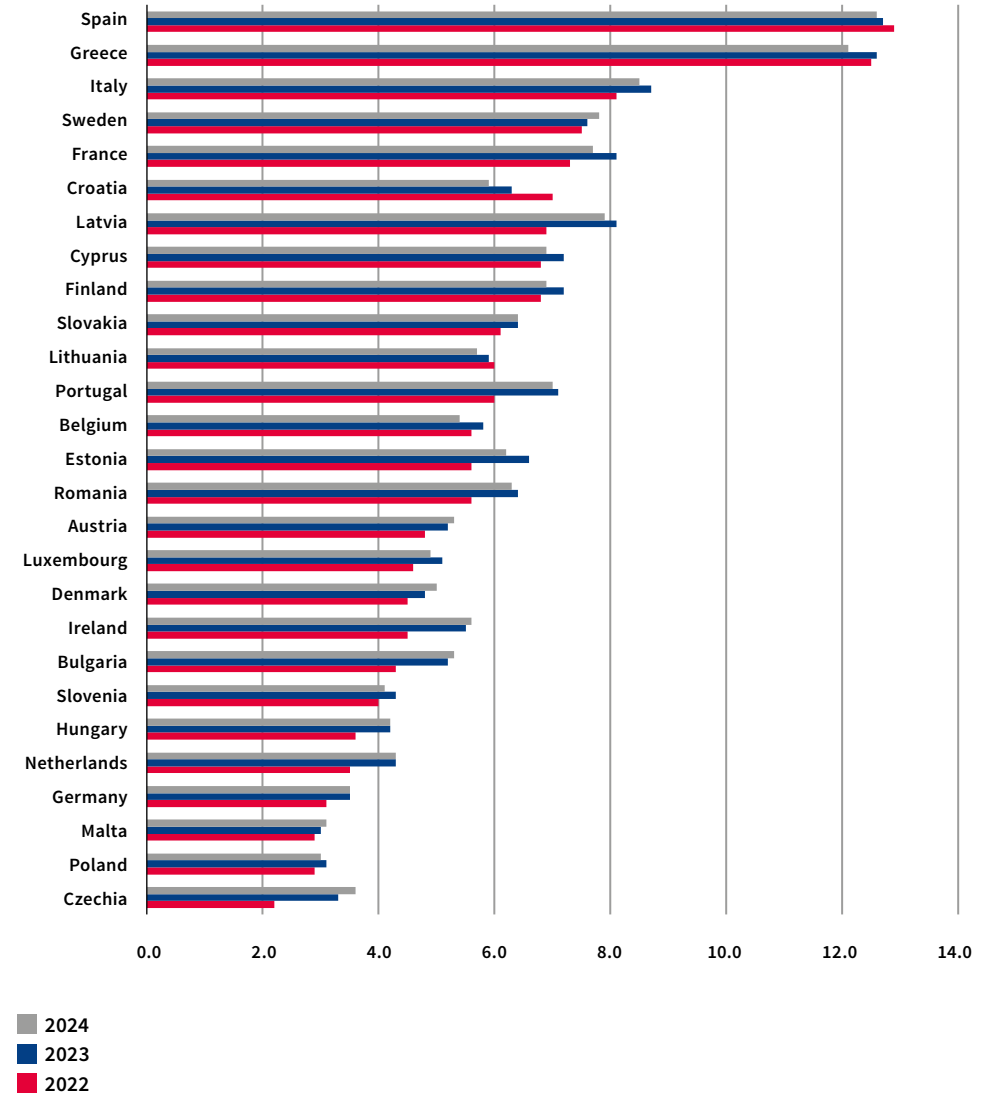
## 1.2 European economic situation

Source: Winter forecast 2022, European Commission, Economic and Financial Affairs, February 2023

Inflation rate, 2022-2024, in %



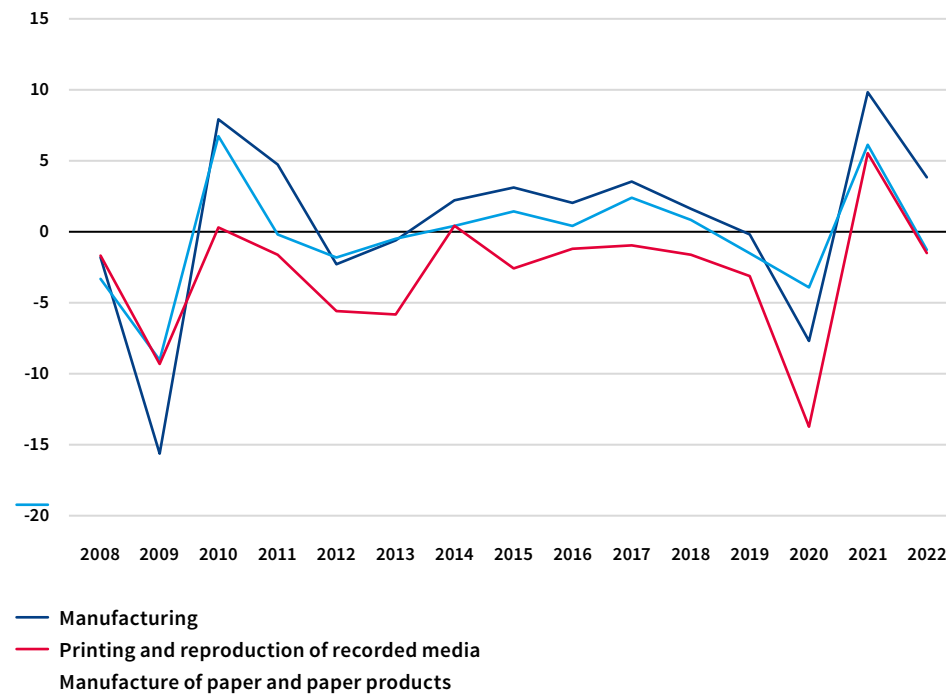
Unemployment rate, 2022-2024, in %



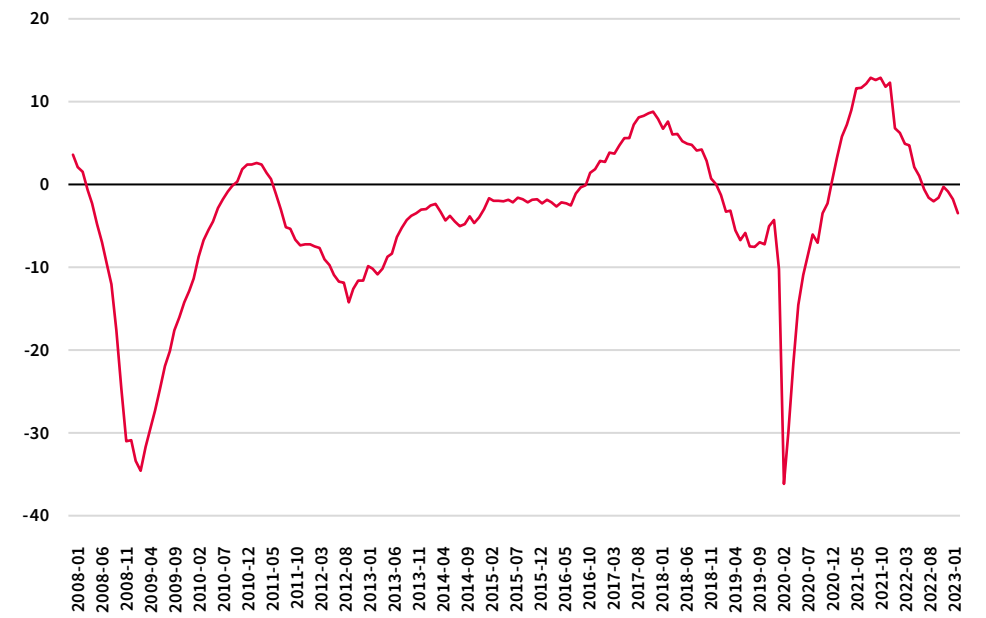
# 1.3 European manufacturing industry

Source: Eurostat; European Commission, DG Economic and Financial Affairs

Industrial production, % change compared to previous year, 2008-2022



Industrial confidence, 2008 - 2023

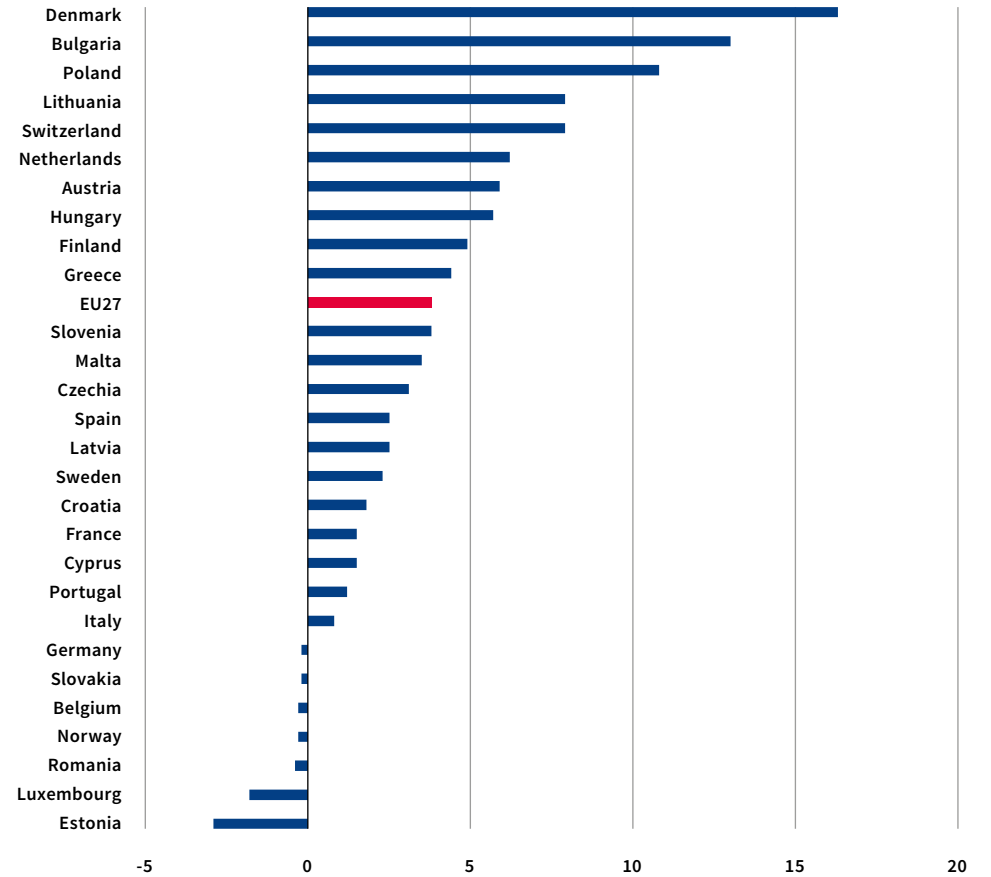


# 1.3 European manufacturing industry

Source: Eurostat; European Commission, DG Economic and Financial Affairs

2022 industrial production in the European manufacturing industry: + 3.8%

Industrial production index, European manufacturing sector, EU27, 2022, % change compared to previous year

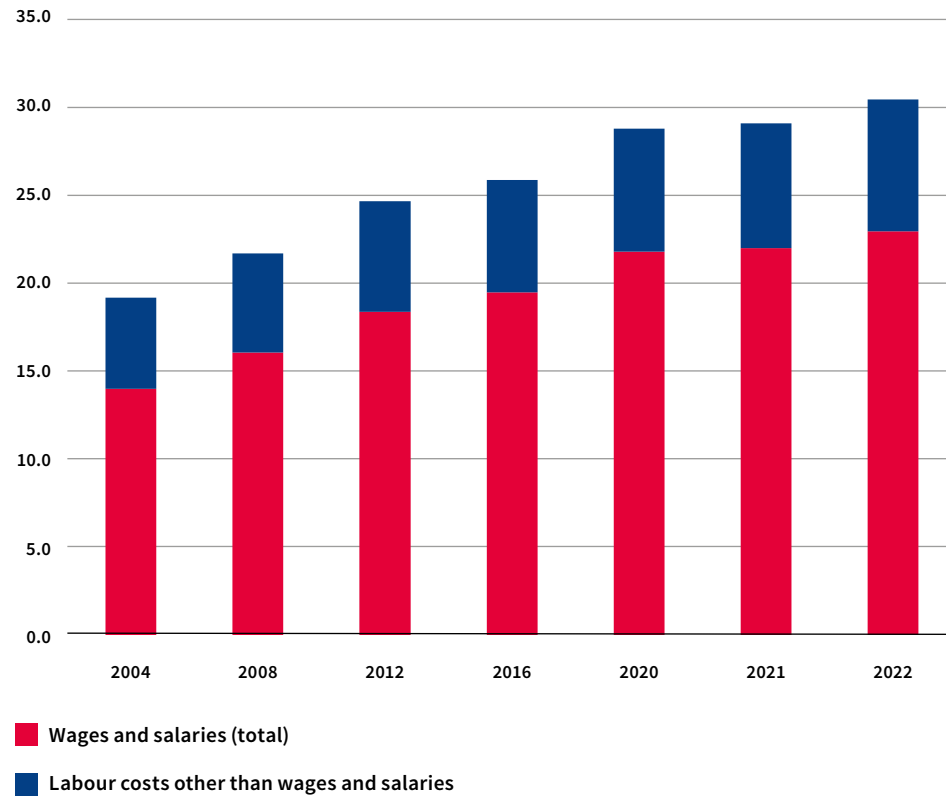




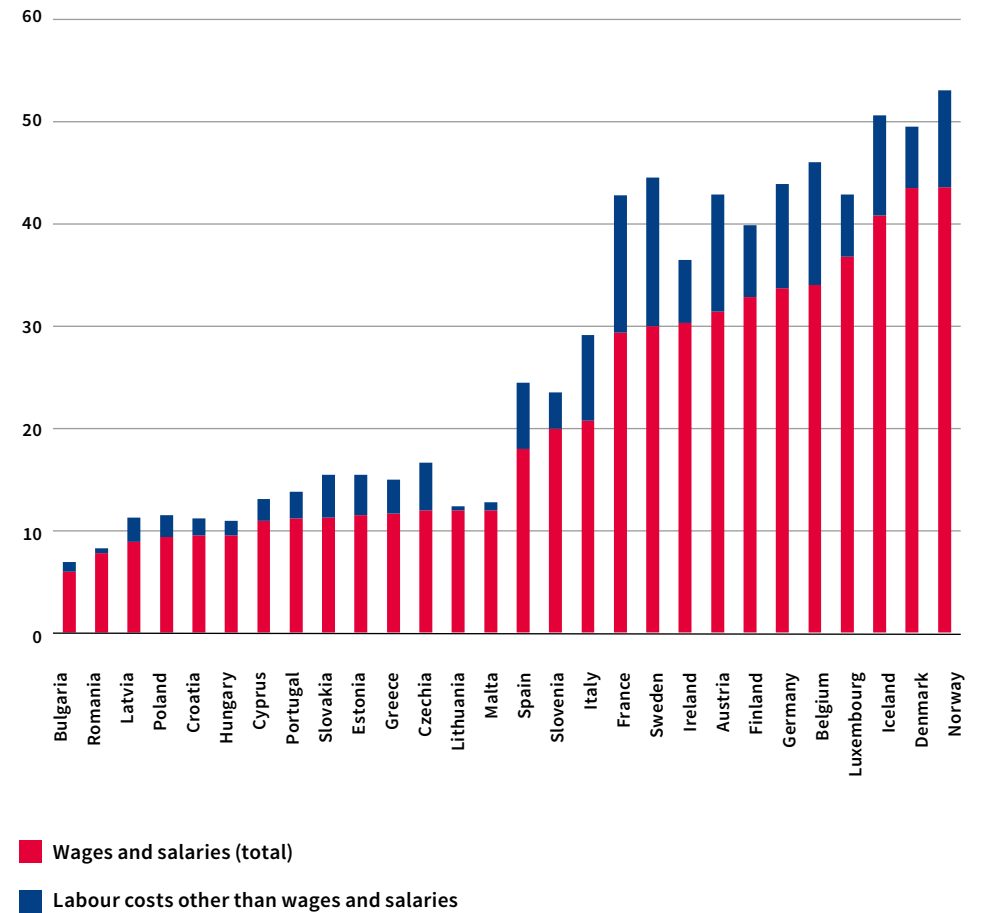
# 1.3 European manufacturing industry

Source: Eurostat; European Commission, DG Economic and Financial Affairs

Hourly average labour costs in the European manufacturing industry, in €, 2004-2022



Hourly labour costs for the European manufacturing industry, 2022



## 2.1 Profile of the European graphic industry

Source: Eurostat

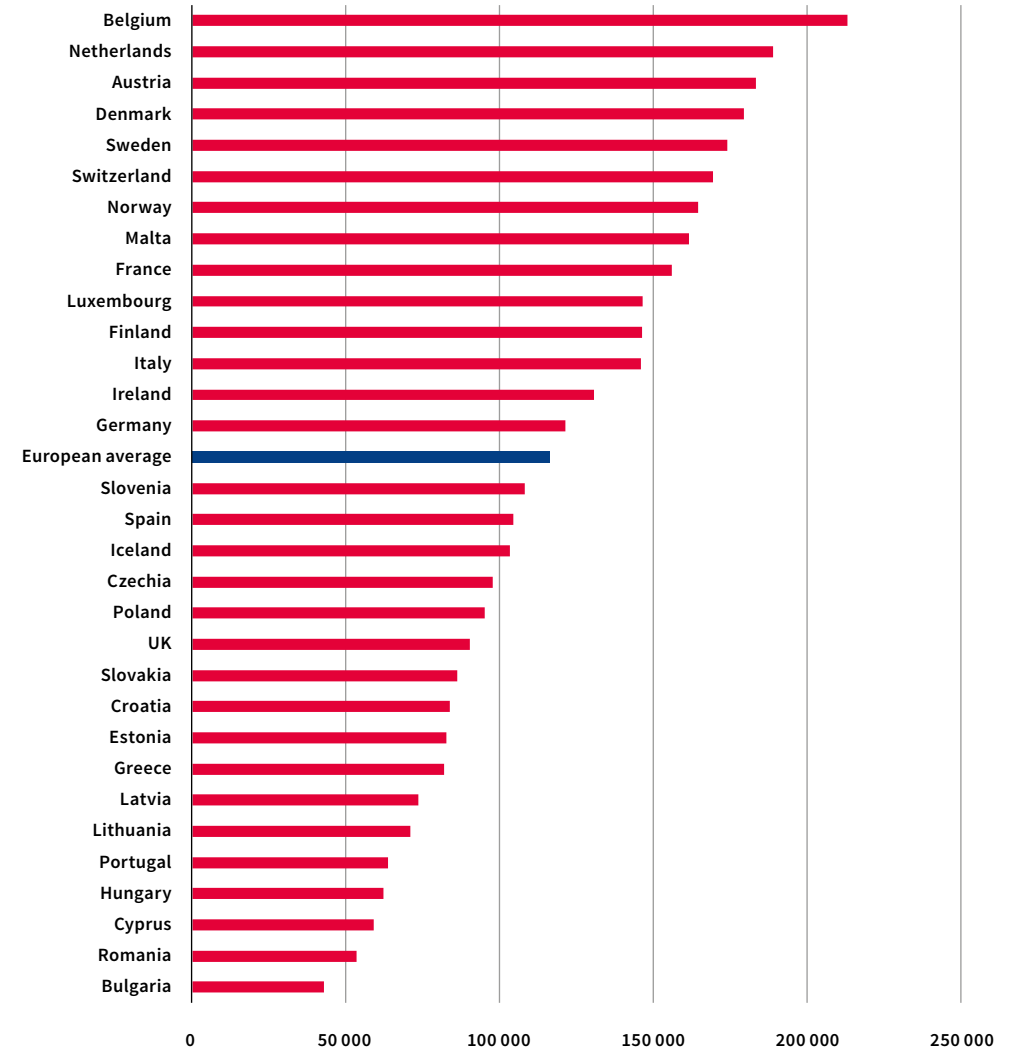
Profile of the European graphic industry, EU27+UK+CH+NO+IS, 2020

 **110.000**  
COMPANIES

 **610.000**  
EMPLOYEES

 **70 billion**  
TURNOVER

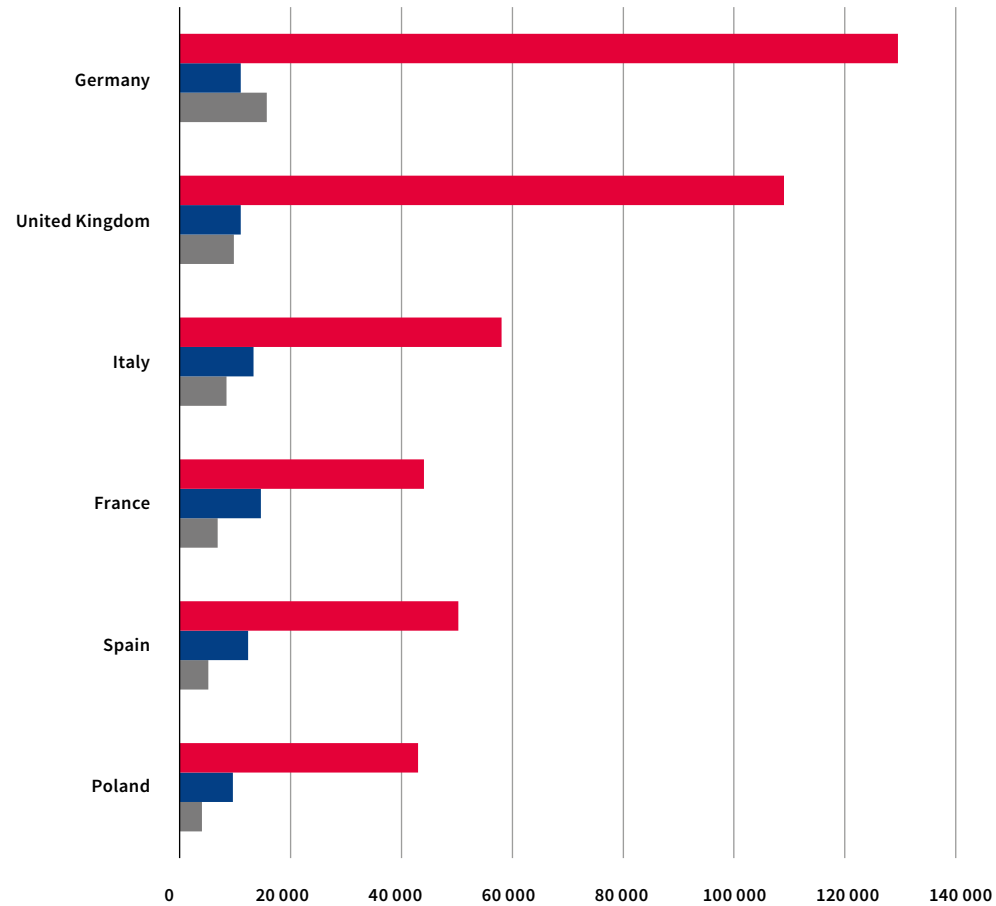
Turnover per employee, in euros, 2020



## 2.1 Profile of the European graphic industry

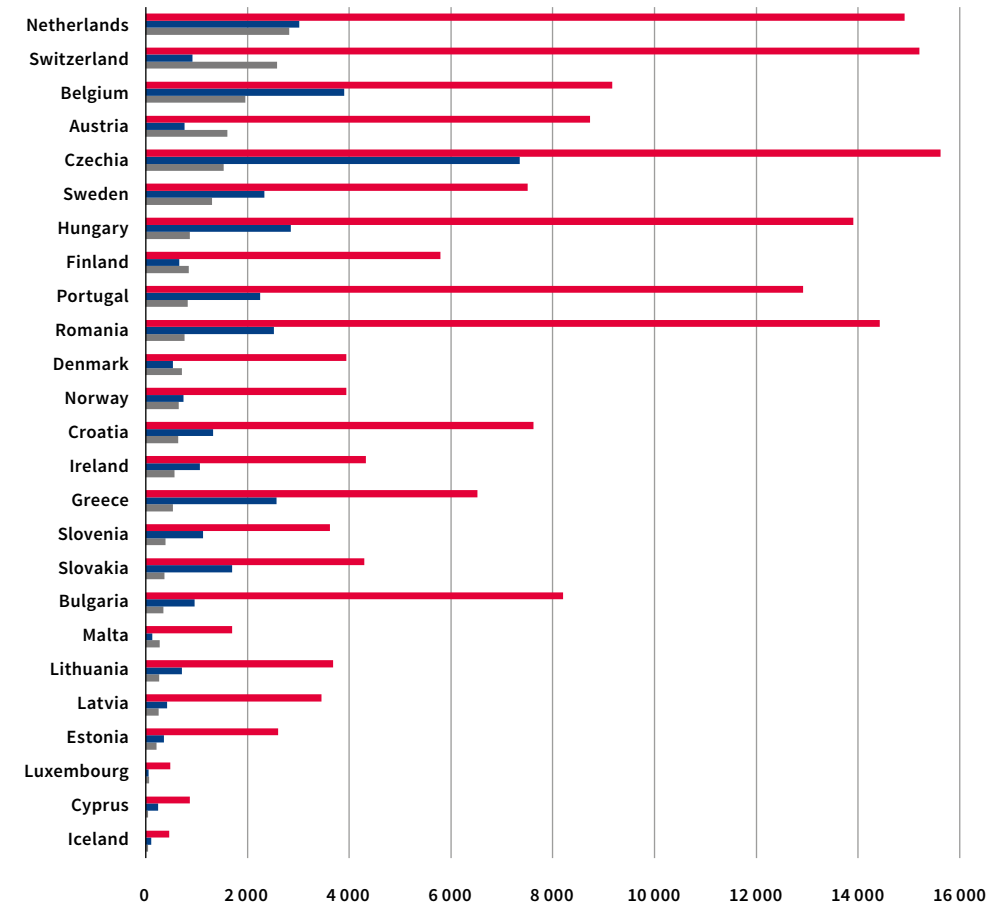
Source: Eurostat

Profile of the European printing industry, large markets, EU27+UK+NO+CH+IS, 2020



■ Employees  
■ Companies  
■ Turnover (million €)

Profile of the European printing industry, EU27+UK+NO+CH+IS, 2020

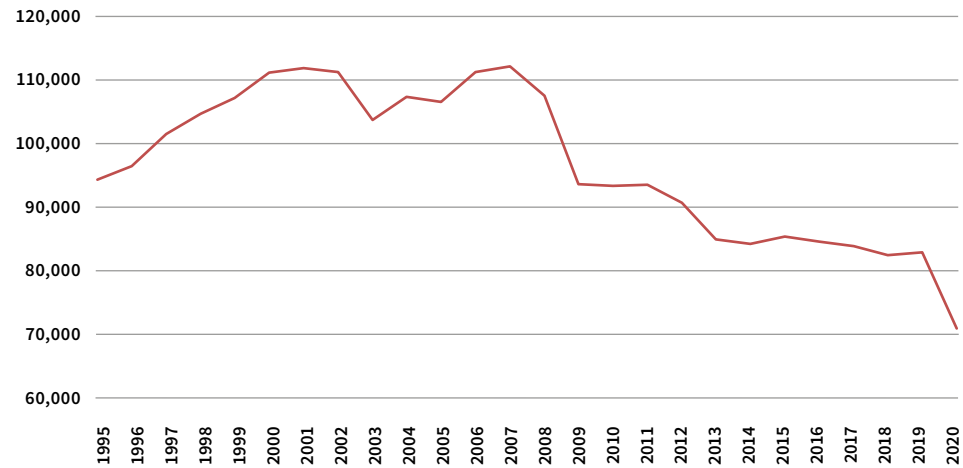


■ Employees  
■ Companies  
■ Turnover (million €)

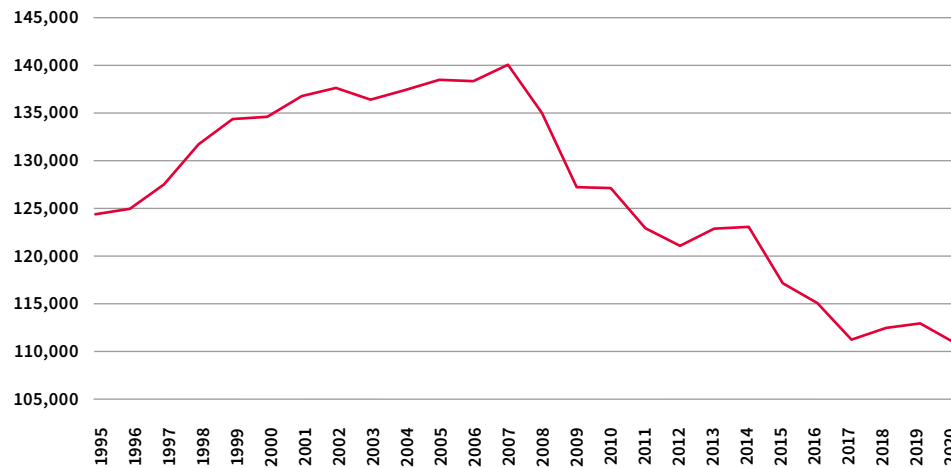
## 2.1 Profile of the European graphic industry

Source: Eurostat

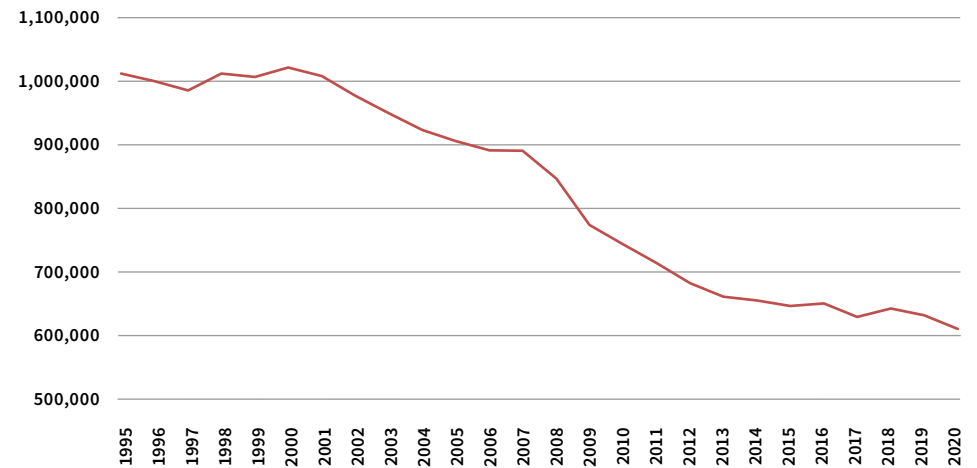
Turnover, EU graphic industry, 1995-2020, in million €



Number of EU graphic companies, 1995-2020



Number of employees in the EU graphic industry, 1995-2020



## 2.1 Profile of the European graphic industry

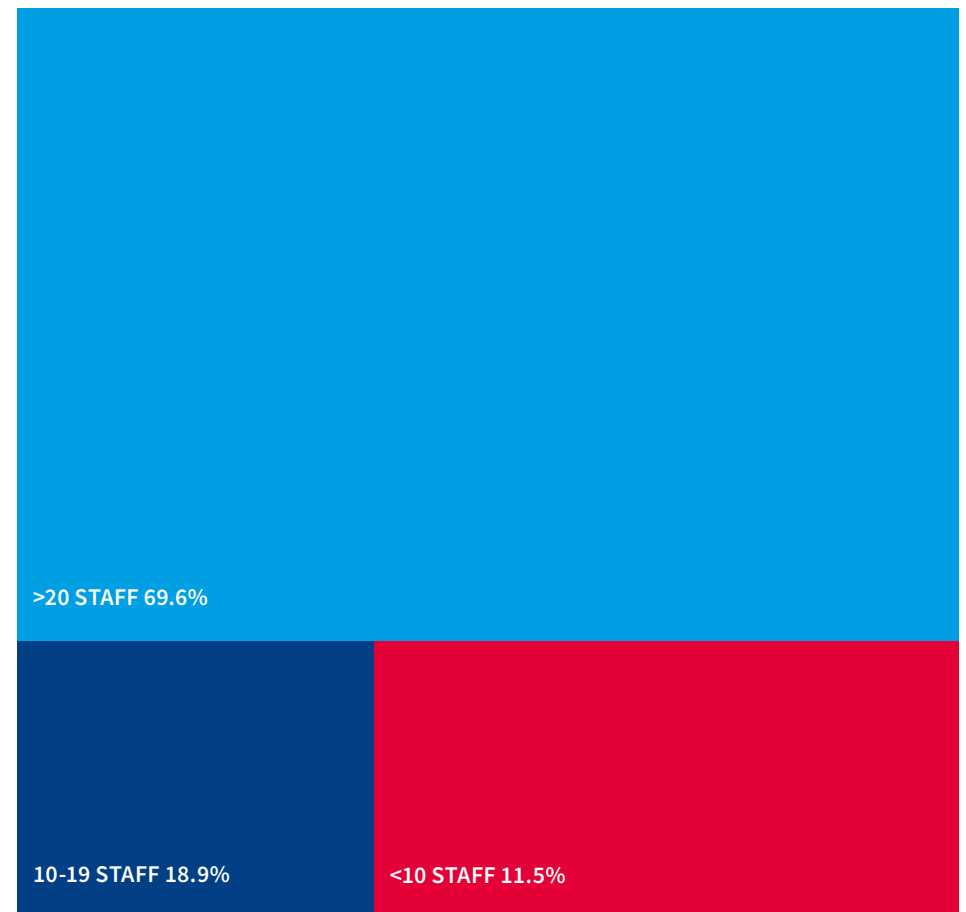
Source: Eurostat

95.5% of European printing companies have less than 20 staff and they generate 88.5% of the industry turnover.

Size of the EU printing industry by number of employees, Europe, EU-27, 2020



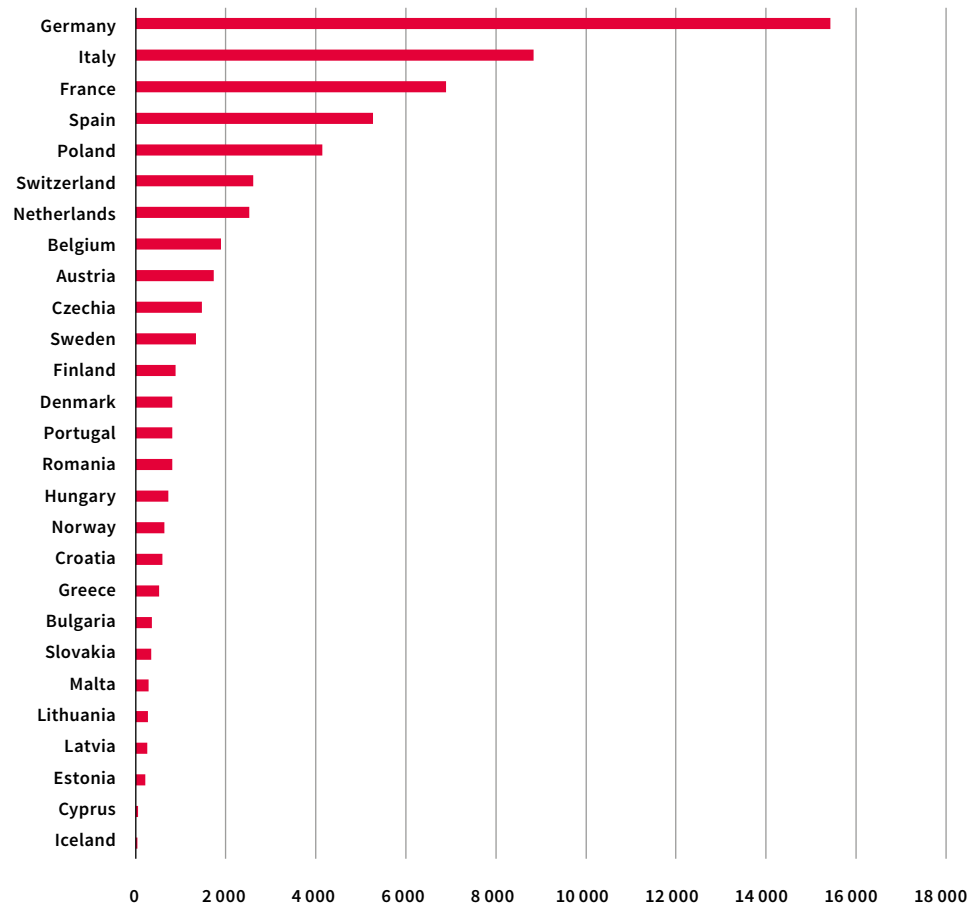
Size of the EU printing industry by turnover, Europe, EU-27, 2020



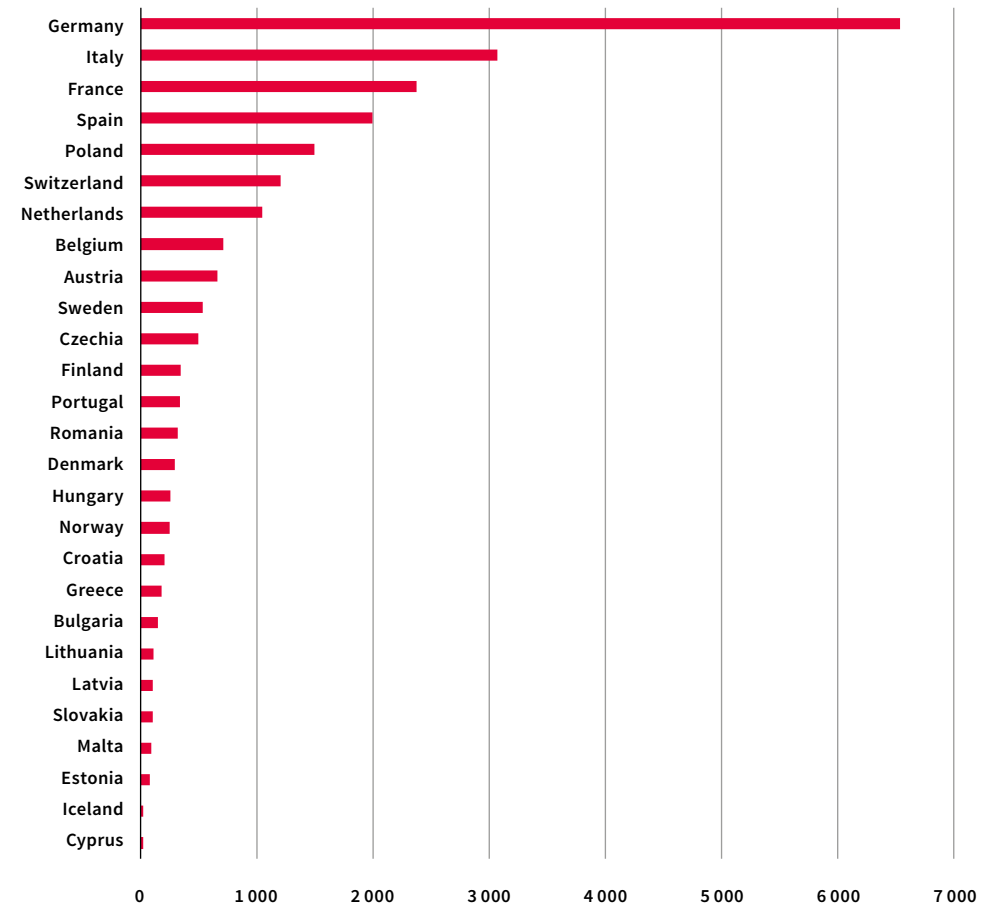
## 2.1 Profile of the European graphic industry

Source: Eurostat

Production value, in million euros, 2020



Value added at factor cost, in million euro, 2020

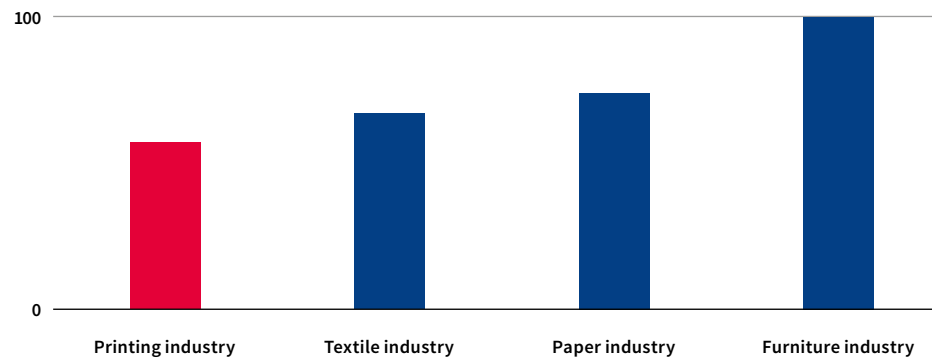


## 2.1 Profile of the European graphic industry

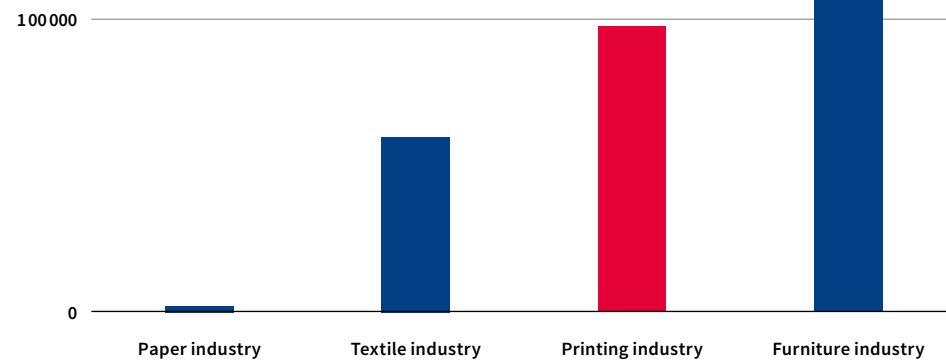
Source: Eurostat\*

Profile comparison of selected manufacturing sectors, EU27, 2020

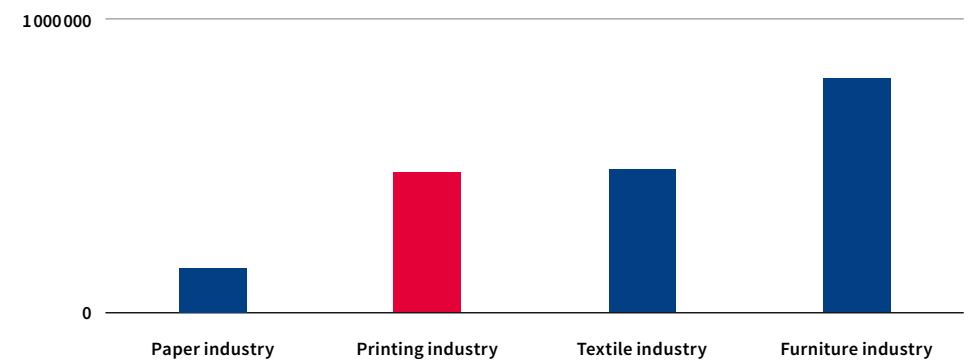
Turnover (in billion €)



Companies



Employees



\* Paper industry: NACE 17.1 (manufacture of pulp, paper and paperboard)

Printing industry: NACE 18.1

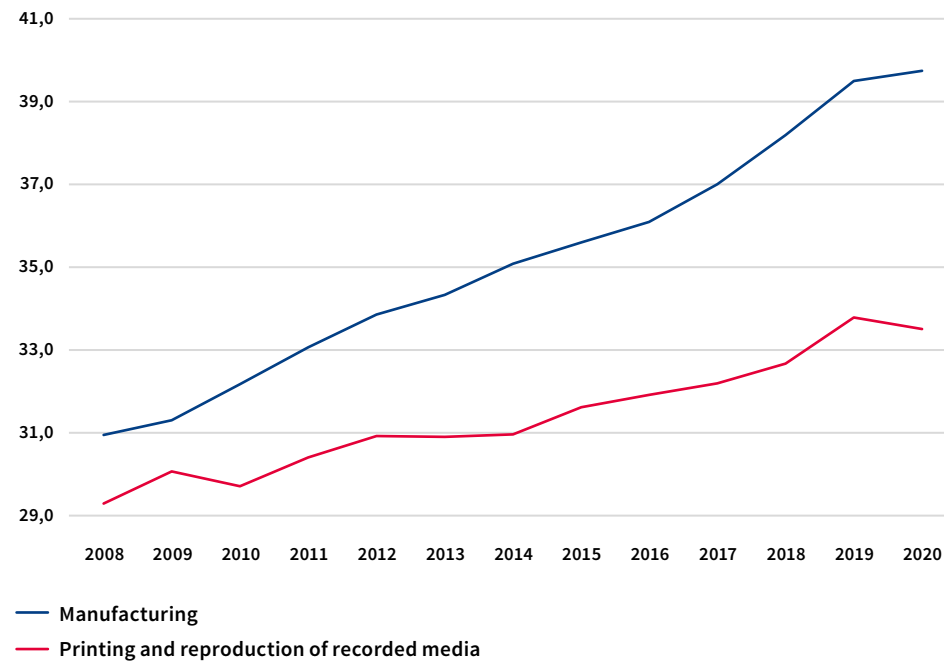
Textile industry: NACE 13

Furniture industry: NACE 31

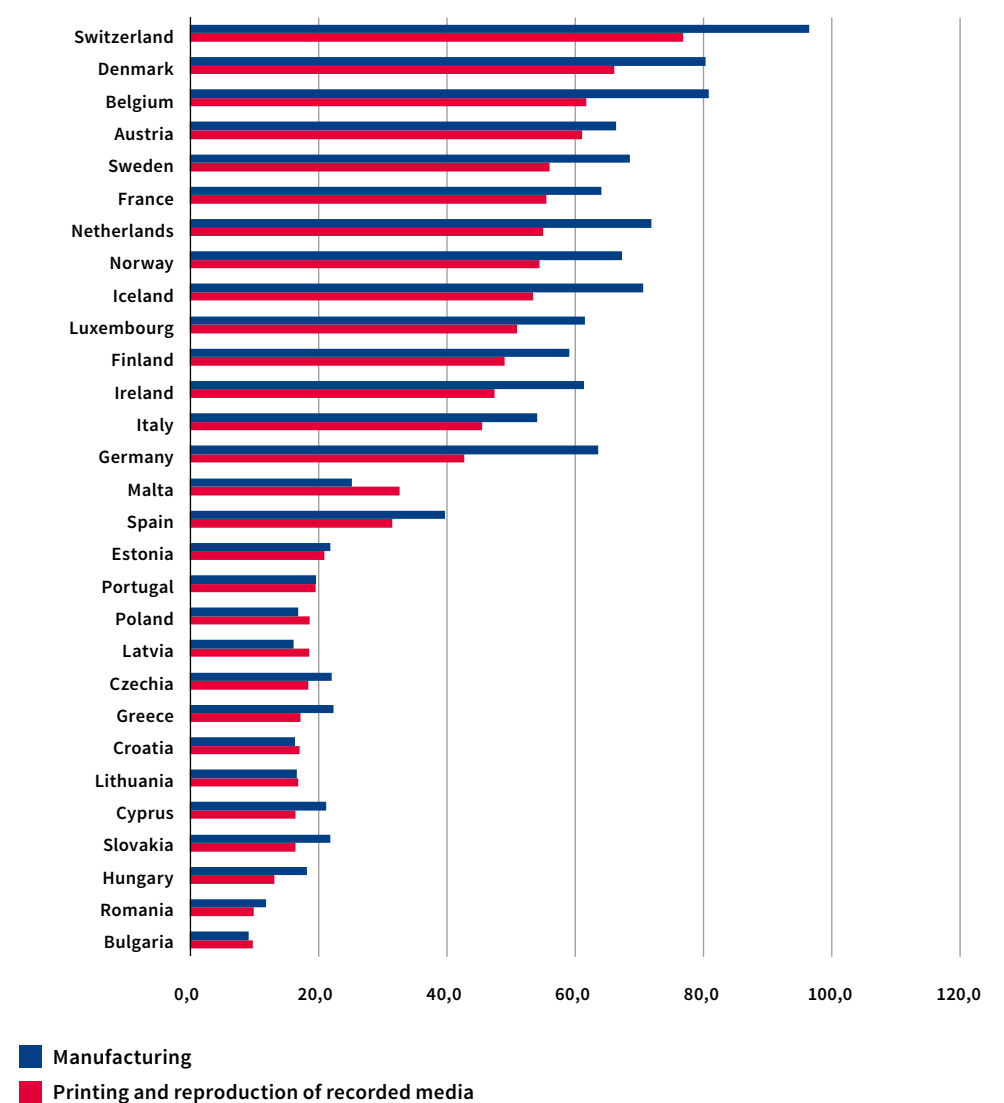
## 2.2 Labour costs

Source: Eurostat

Labour costs per employee full-time equivalent, EU27, in thousand €, 2008-2020



Labour costs per employee full-time equivalent, in thousand €, 2020



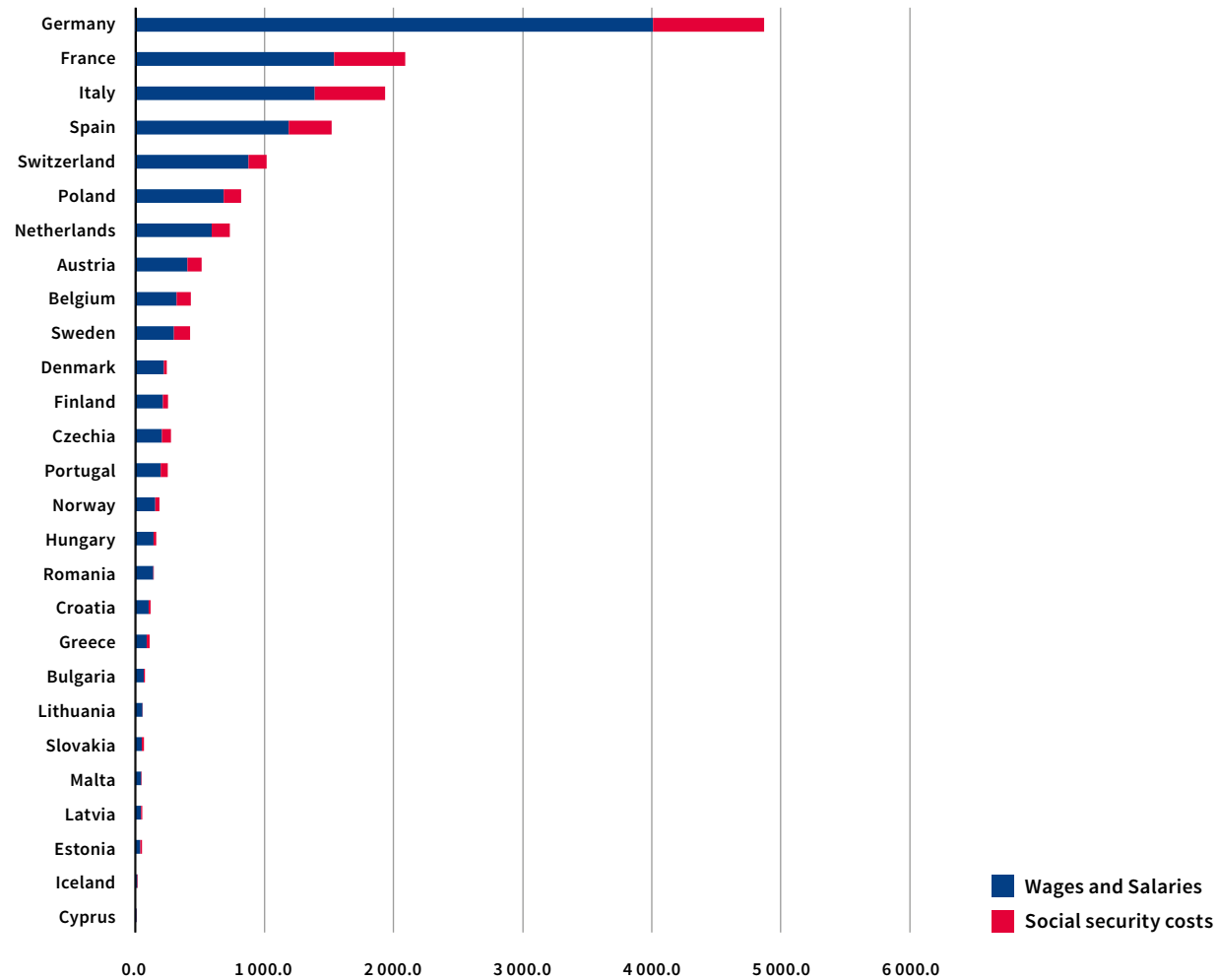
The average labour costs in the overall manufacturing sector are 18.7% higher than the labour costs in the printing industry (and reproduction of recorded media).



## 2.2 Labour costs

Source: Eurostat

Total personnel costs in the printing industry, covering wages and salaries and national social security costs, in million €, 2020

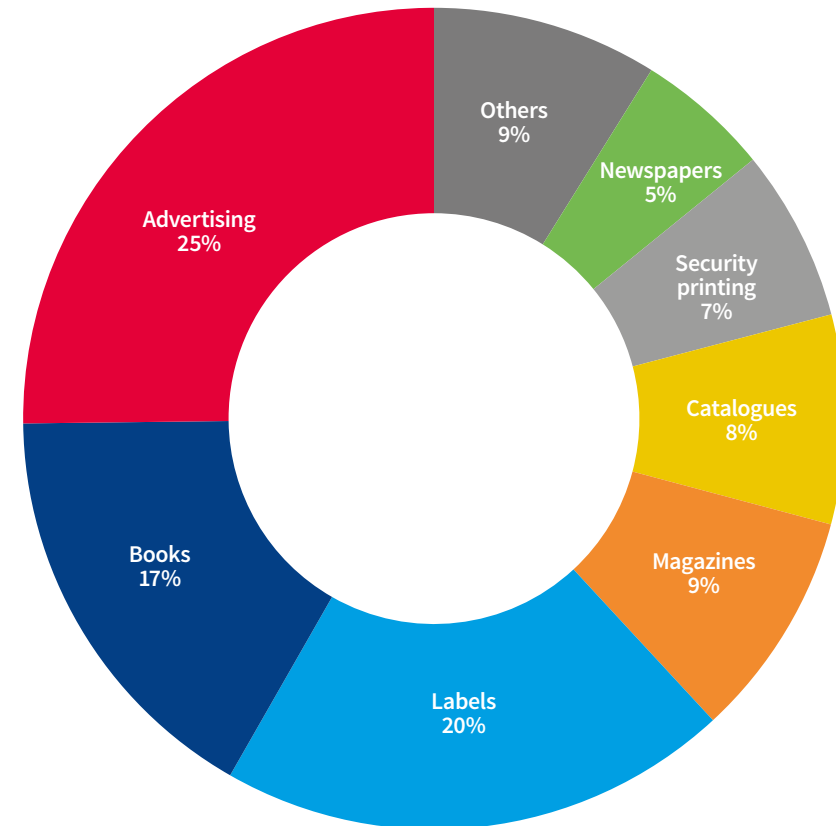


## 2.3 Production value

Source: Eurostat (PRODCOM), figures are in €, by value of sold production

In 2021, approximately €41 billion worth of printed products were produced in the European Union, Iceland and Norway.

Share in production value, 2021, %



## 2.3 Production value

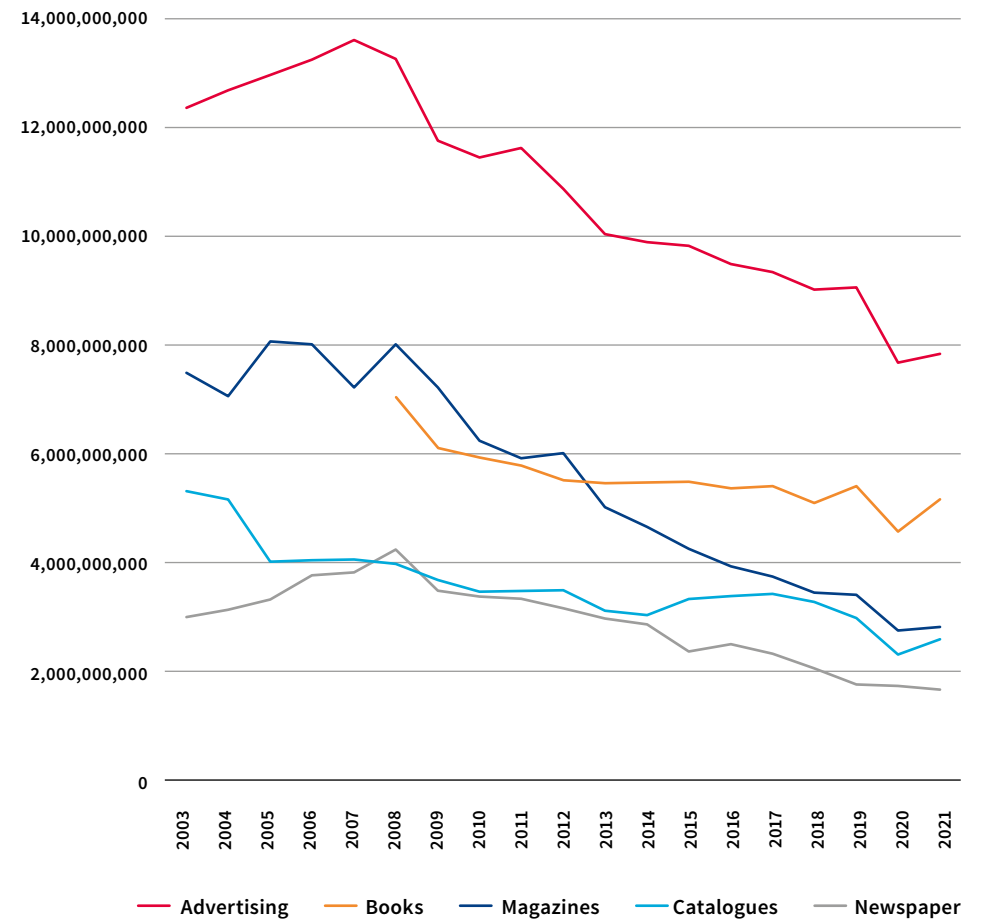
Source: Eurostat (PRODCOM), figures are in €, by value of sold production

Evolution of production value of total printed products, 2008-2021, in €



- The total production of printed products in 2021 increased by 5.9% compared to 2020 but did not reach the 2019 level.
- The total production of printed products overall decreased by 29.1% between 2008 and 2021.

Evolution of production value of selected printed products, 2003-2021, in €



- With the exception of newspapers, printed products registered an increase in production value in 2021.
- Newspapers registered a decrease by 4.3%. Advertising and magazines increased by approximately 2% while books and catalogues registered an increase of over 10%.

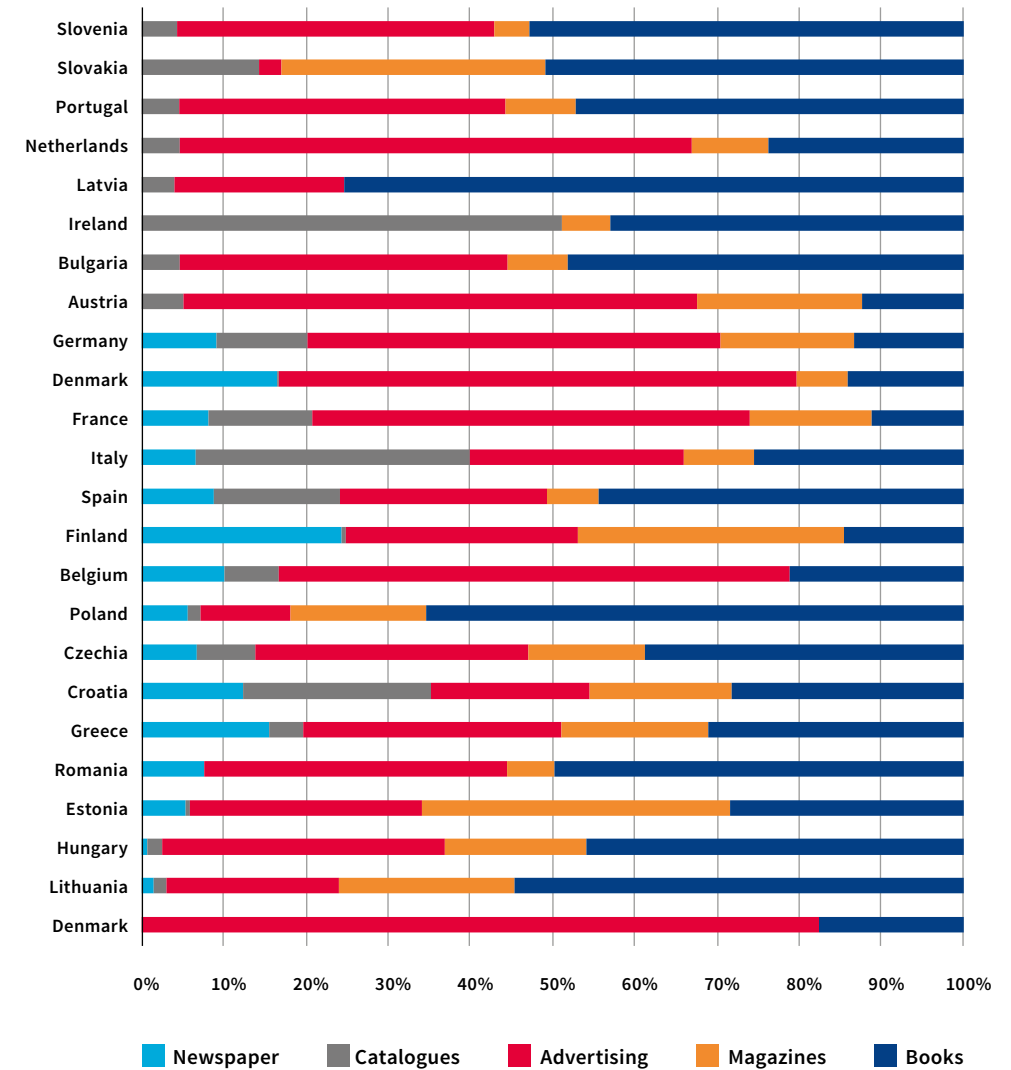
## 2.3 Production value

Source: Eurostat (PRODCOM), figures are in €, by value of sold production

Main producers of printed products, in production value, 2021, in %



Production value by printed product, 2021, %



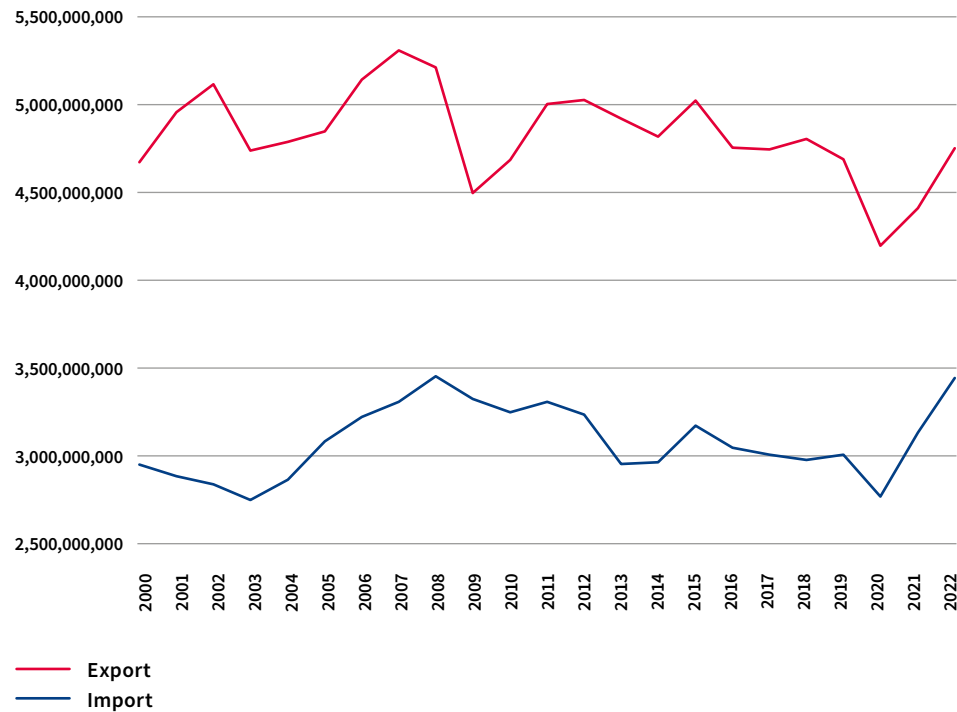
## 2.4 Trade

Source: Eurostat

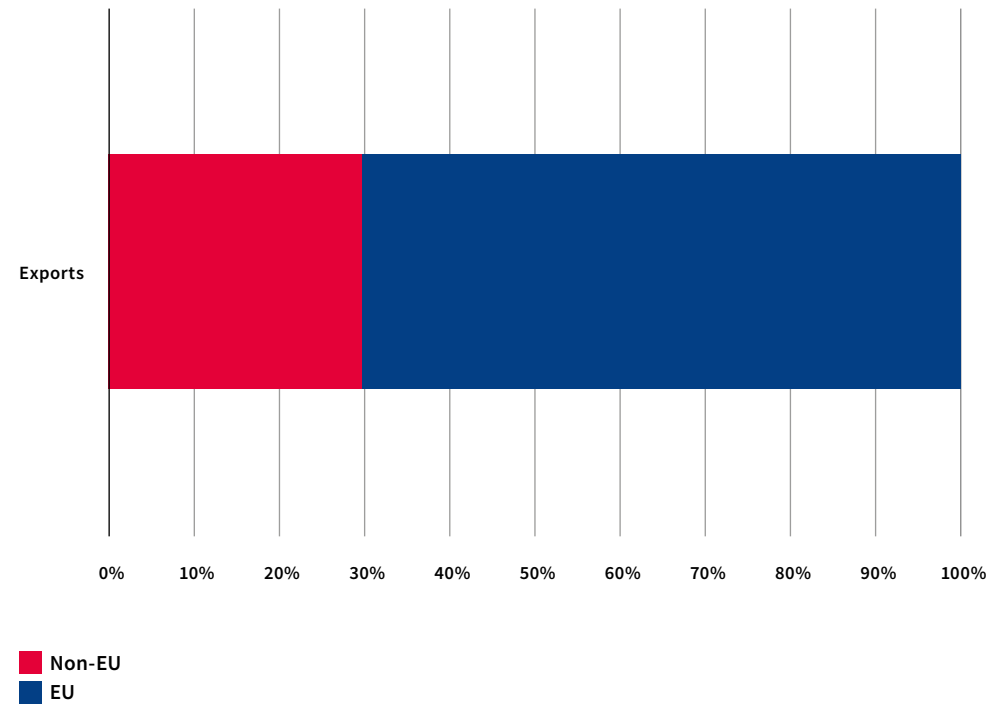
Positive trade balance: €1.3 million

70% of EU trade is intra-EU

EU trade of printed products to non-EU countries, 2000-2022, in €



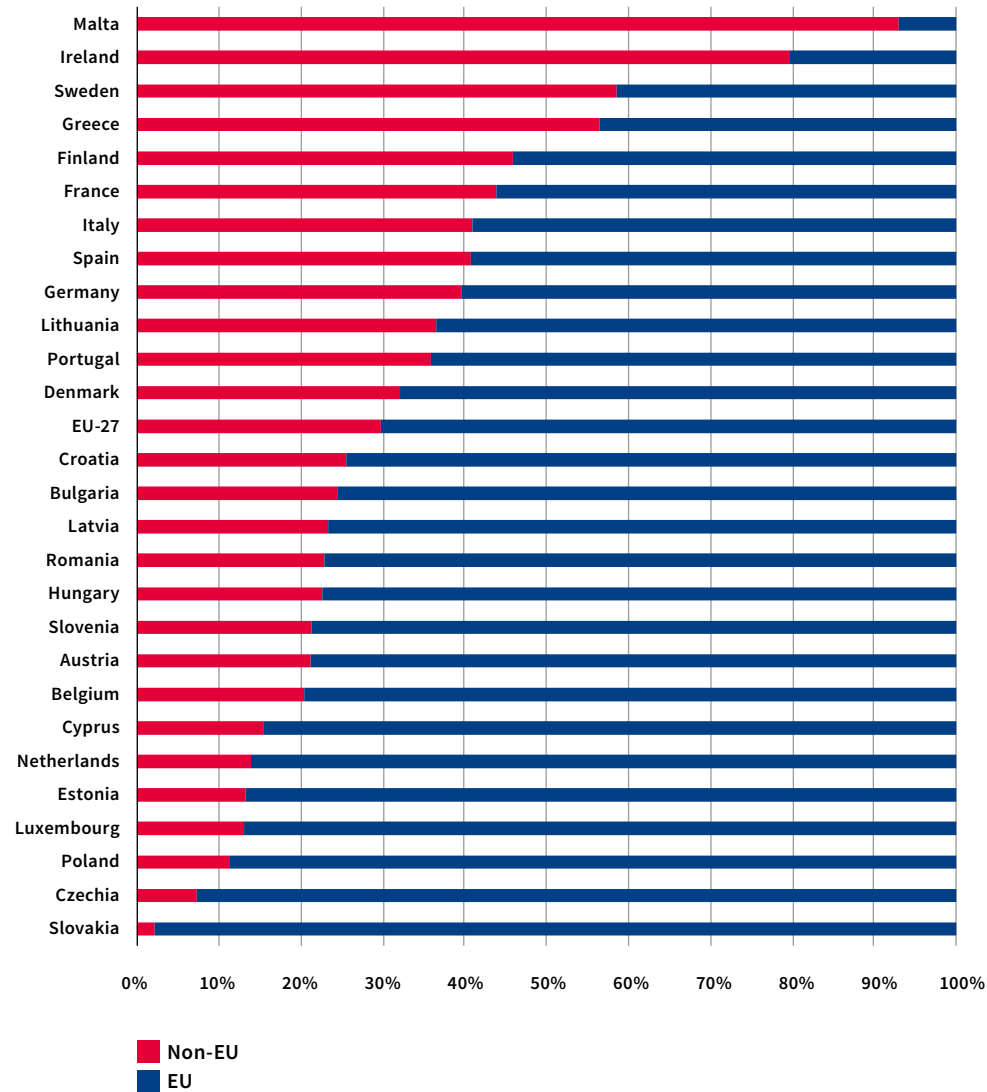
EU trade of printed products, in %, 2022



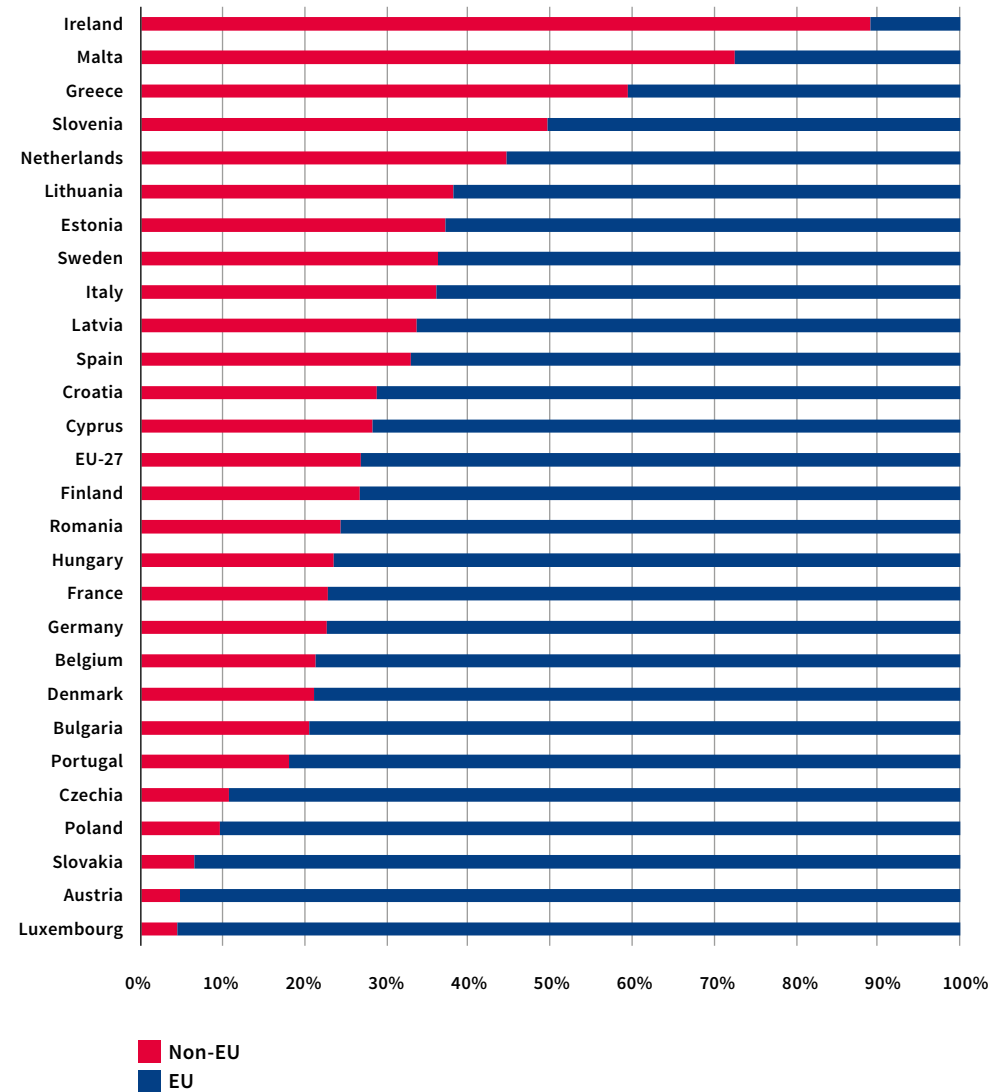
## 2.4 Trade

Source: Eurostat

Share of EU and non-EU trade in exports of printed products, in %, 2022



Share EU/non-EU trade in imports of printed products, in %, 2022



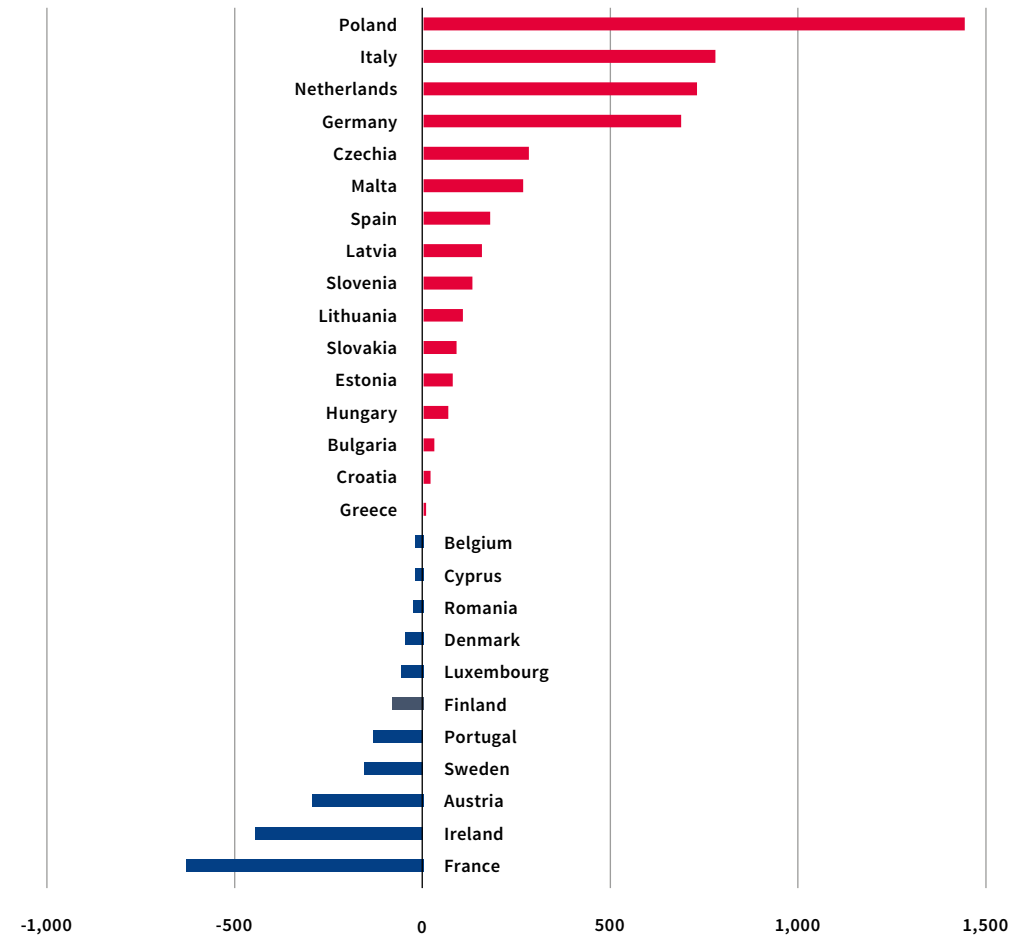
## 2.4 Trade

Source: Eurostat

Considering both intra- and extra-EU trade, the main net exporter of printed products in 2022 was Poland with € 1.4 billion of trade surplus.

With a trade deficit of € 0.6 billion, France was the largest net importer of printed products in 2022.

Trade balance, printed products, intra- and extra-EU, in million €, 2022



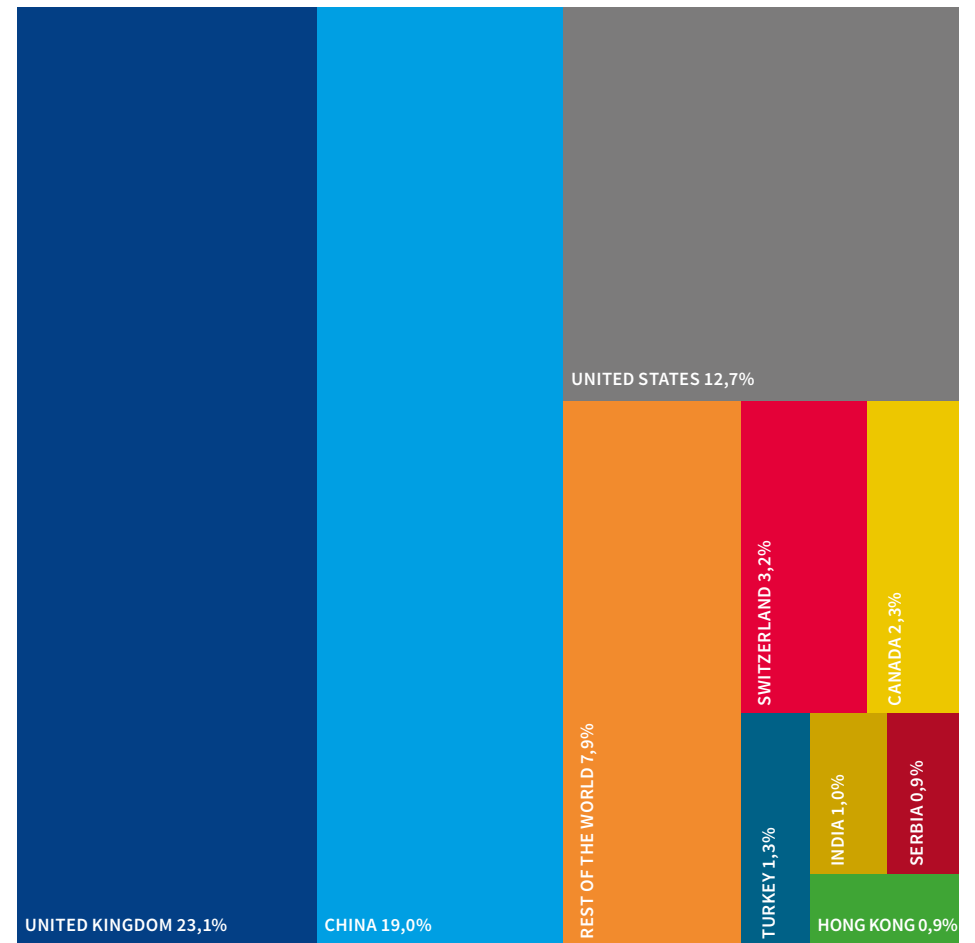
## 2.4 Trade

Source: Eurostat

EU27 trade partners, exports of printed products from the EU, 2022



EU27 trade partners, imports of printed products to the EU, 2022





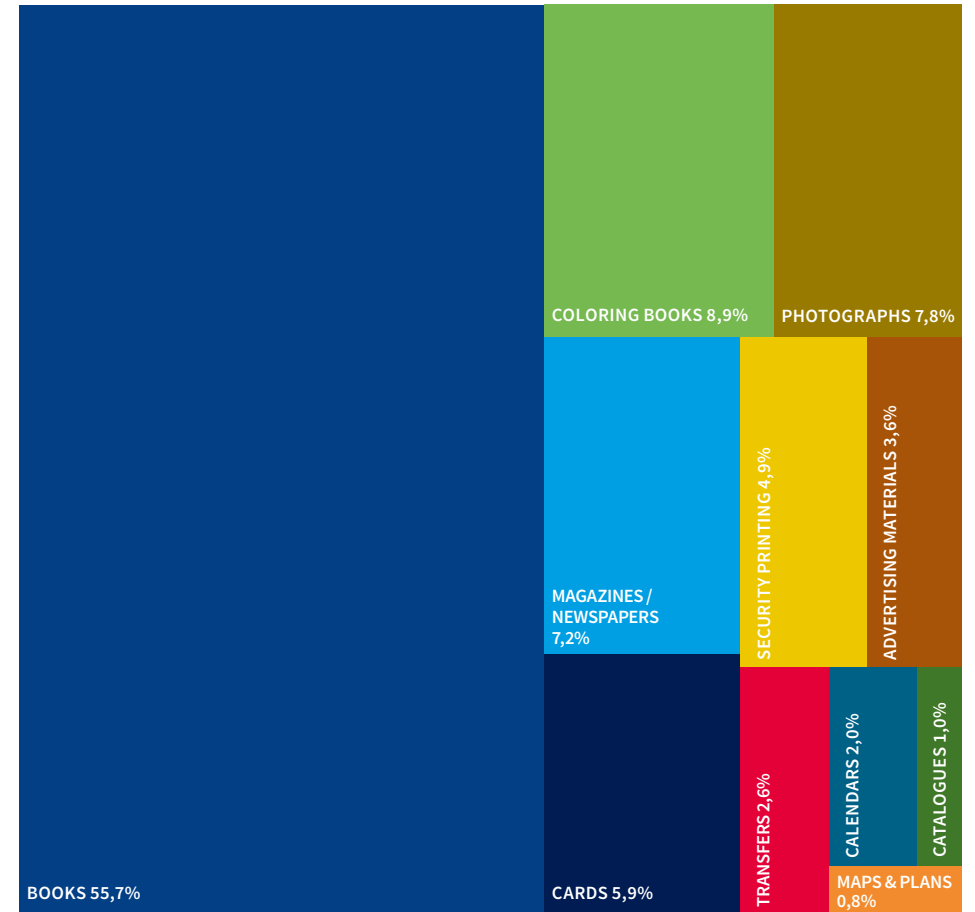
## 2.4 Trade

Source: Eurostat

Most exported printed products from the EU, 2022



Most imported printed products in the EU, 2022

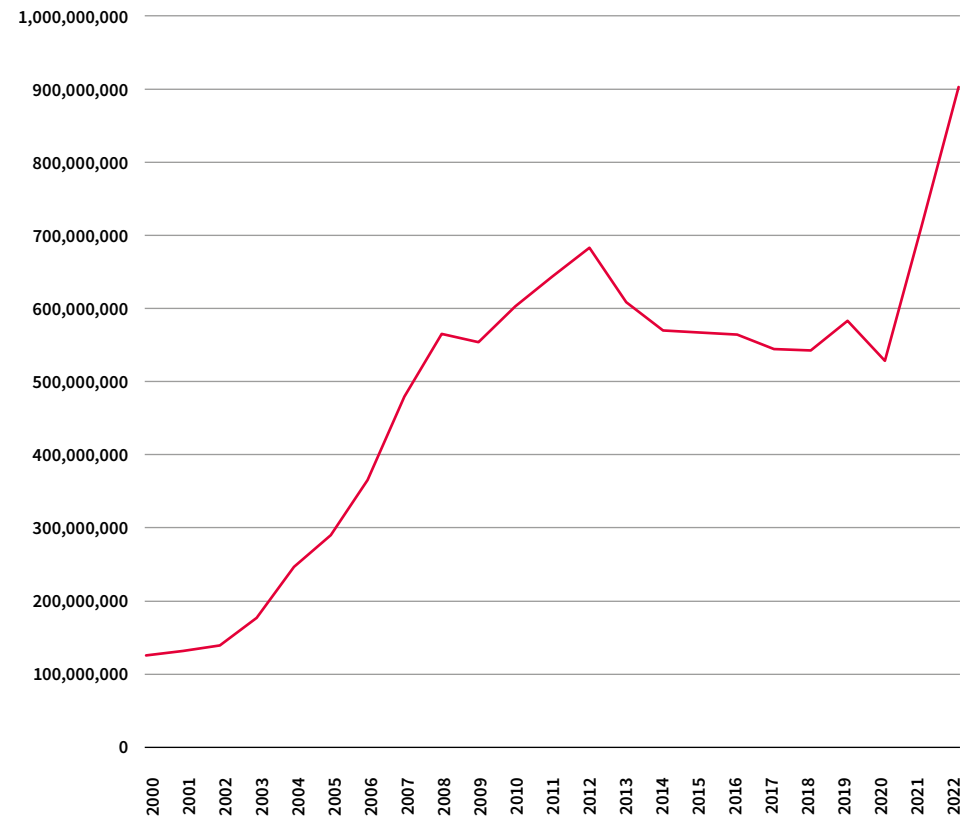


## 2.5 Imports from China

Source: Eurostat

Over € 900 million worth of printed products were imported from China in 2022

Import from China, EU-27, 2000-2022, in €



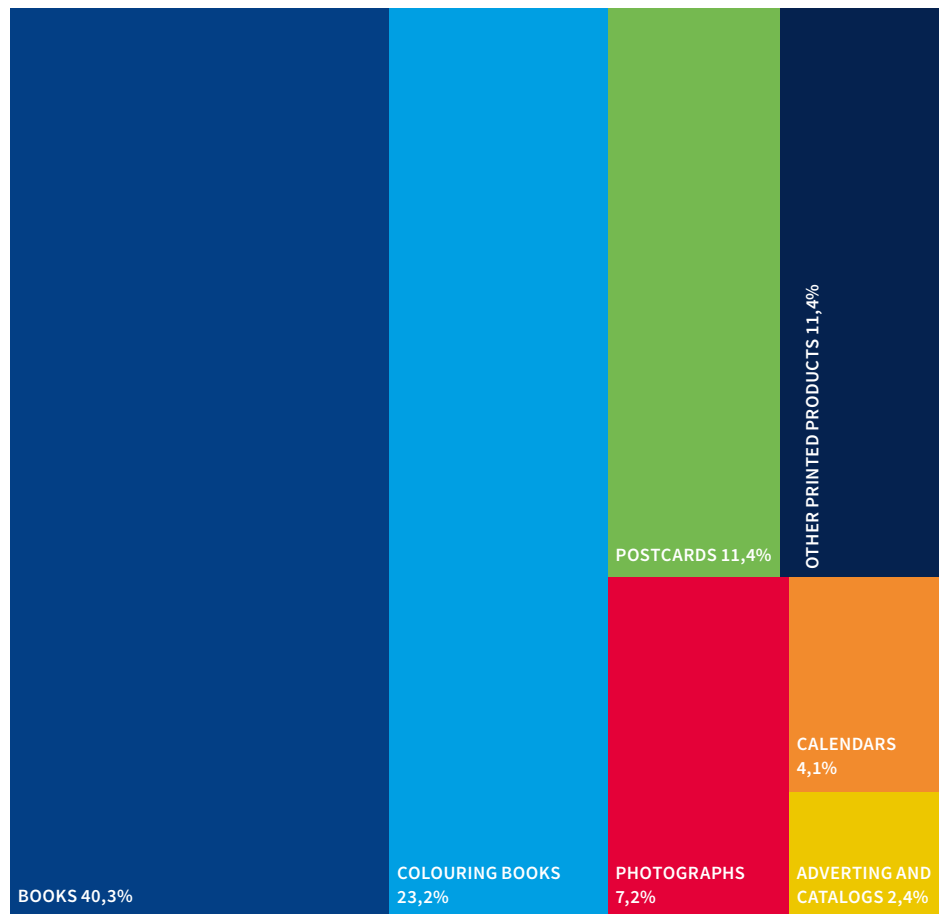
## 2.5 Imports from China

Source: Eurostat

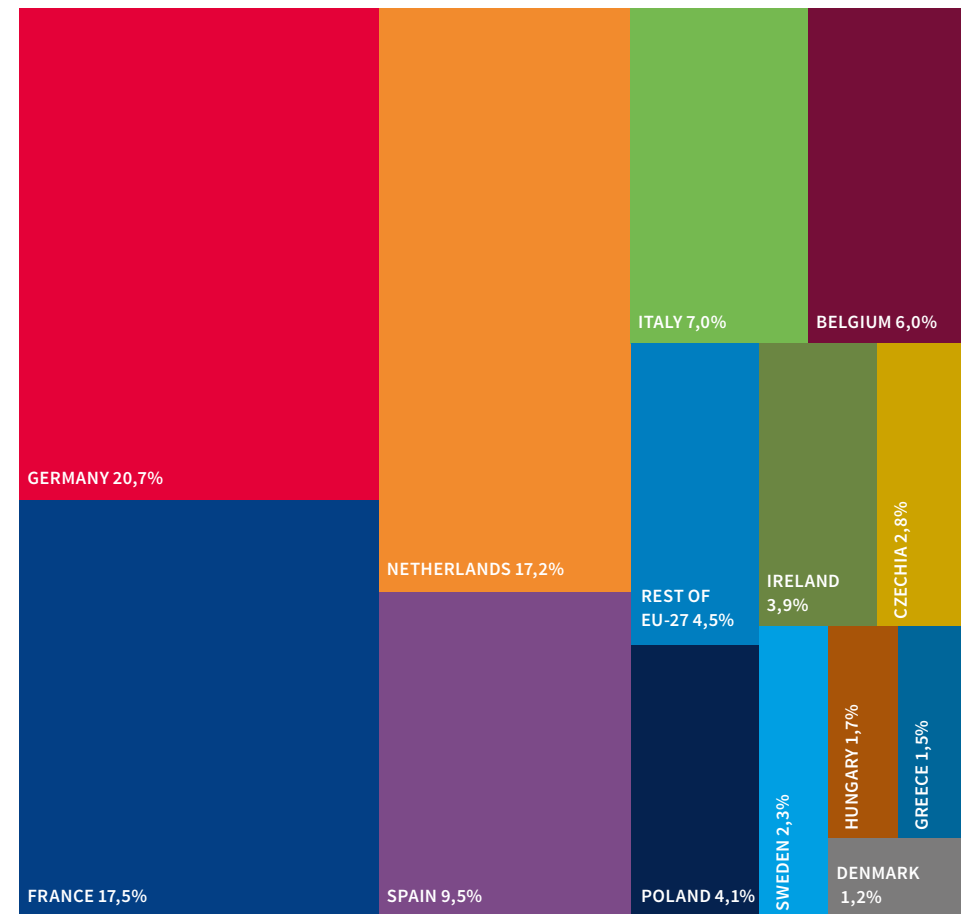
Books accounted for 40% of the total imported printed products to the EU from China in 2022.

In 2022, 20% of Chinese imports were directed to Germany; this corresponds to € 187 million worth of printed products.

Import from China, EU-27, 2000-2022, in €



Main EU importer of printed products from China, 2022



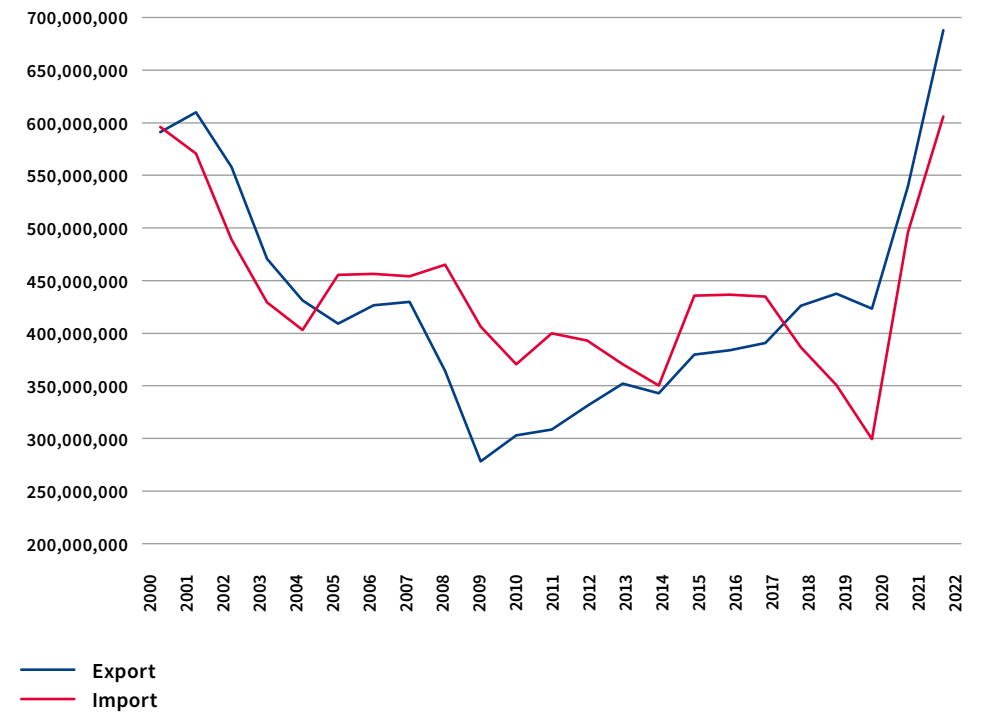
## 2.6 Trade with the US

Source: Eurostat

Since 2018, the EU has a positive trade balance with the US.

In 2022, the EU trade surplus reached € 81 million.

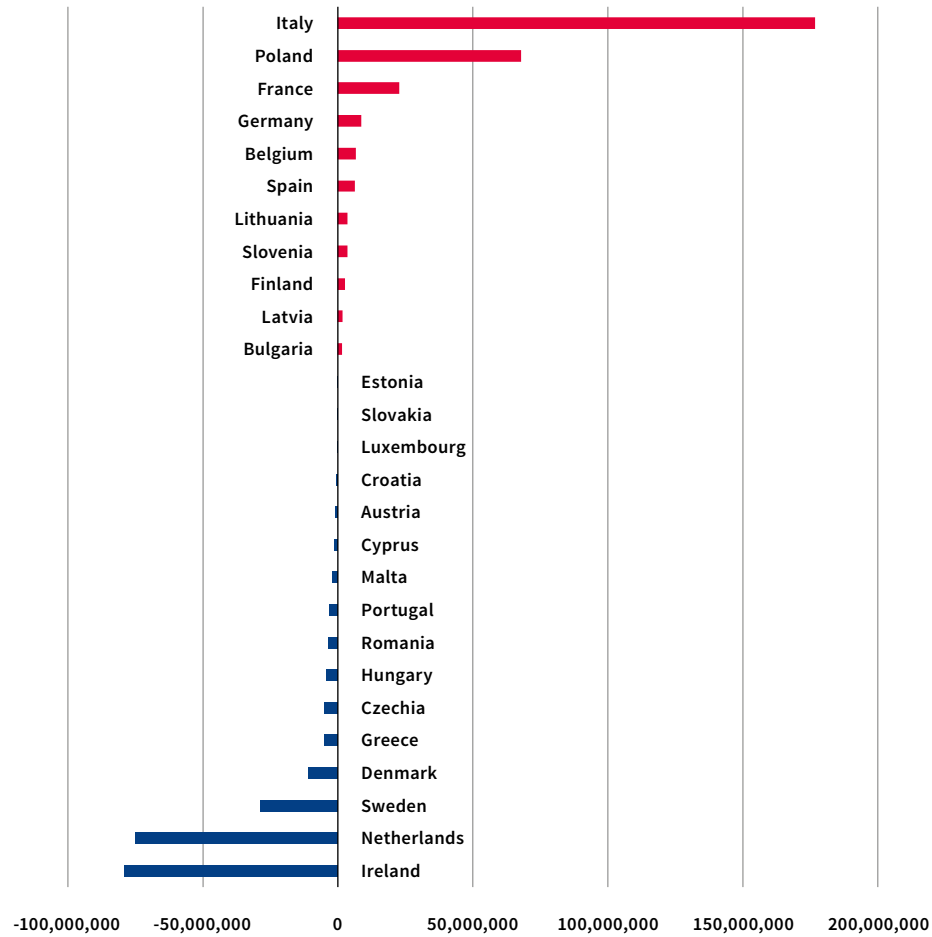
EU27 trade of printed products with the US, 2000-2022, in €



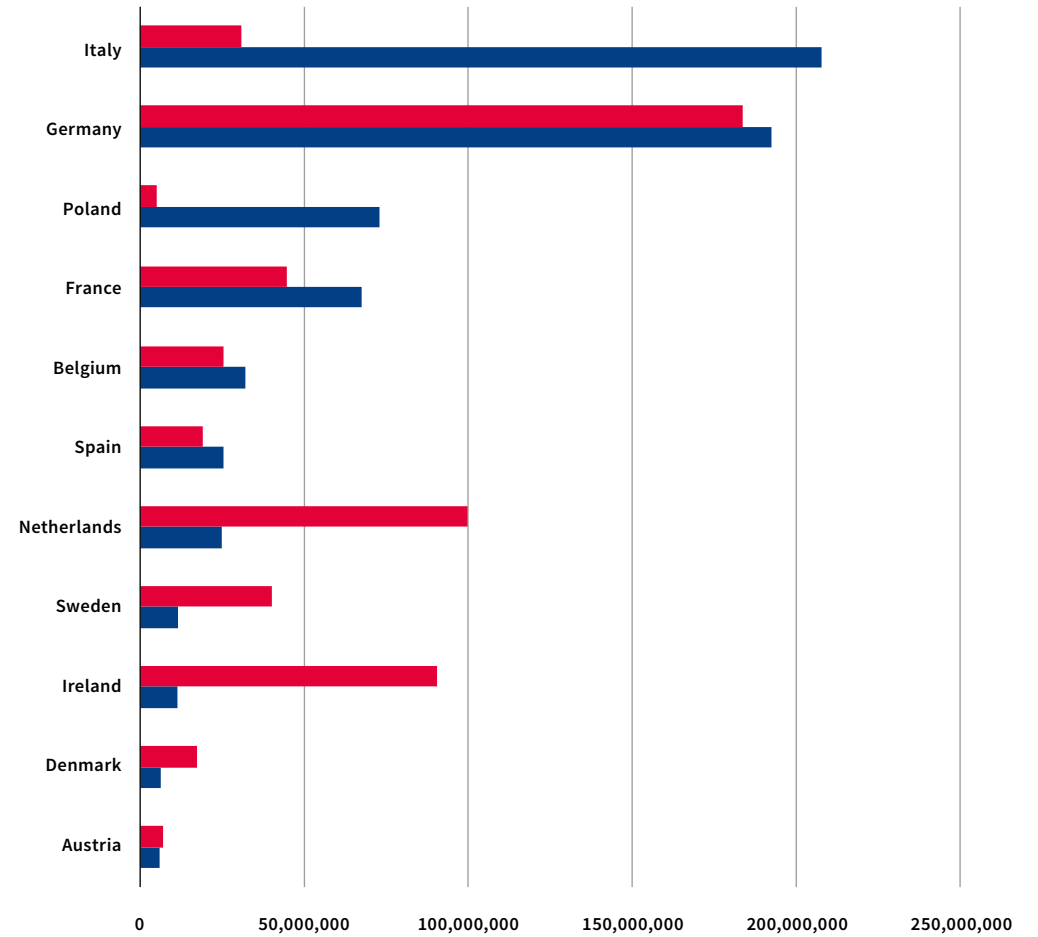
## 2.6 Trade with the US

Source: Eurostat

Trade balances of EU countries with the US, 2022, in €



Main trade partners with the US, 2022, in €



Italy was the main net exporter of printed products to the US and Ireland was the main net importer in 2022.

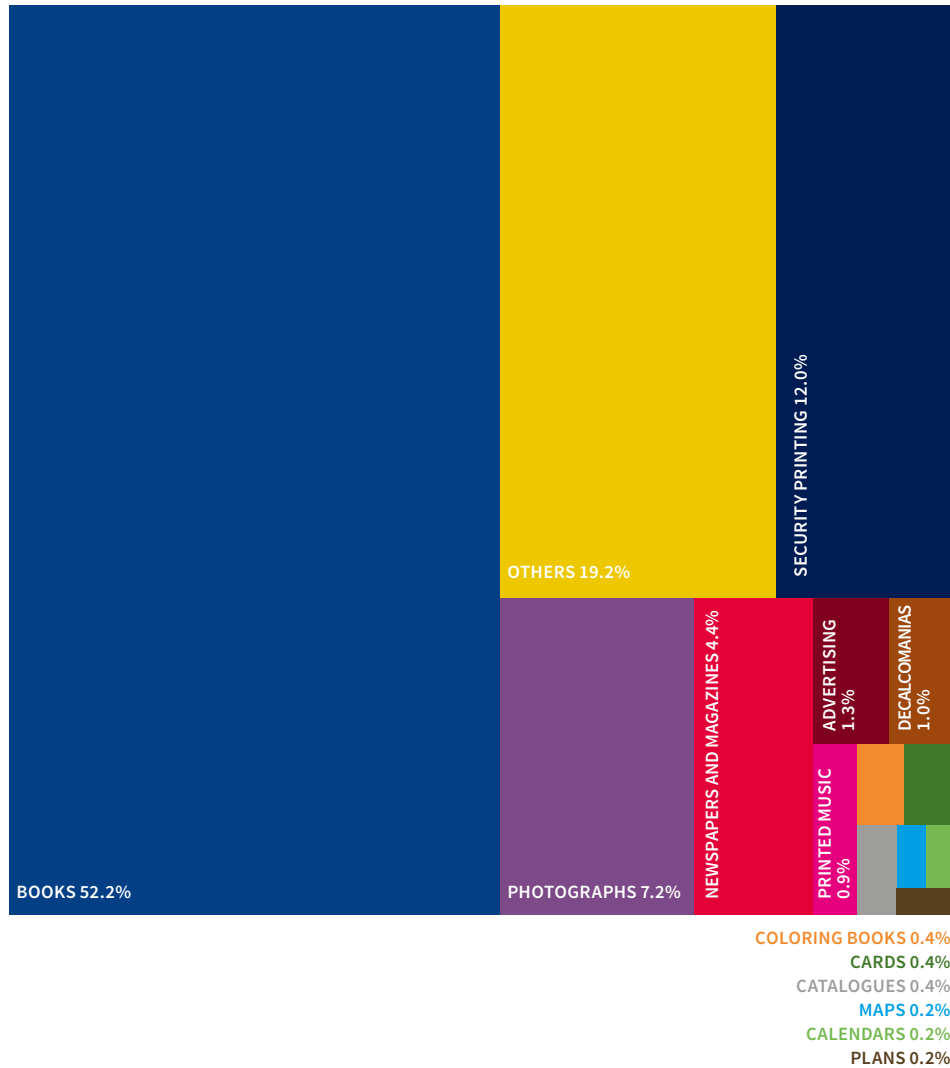
Italy and Germany are the main trade partners with the US in value terms of traded printed products.

Imports  
Exports

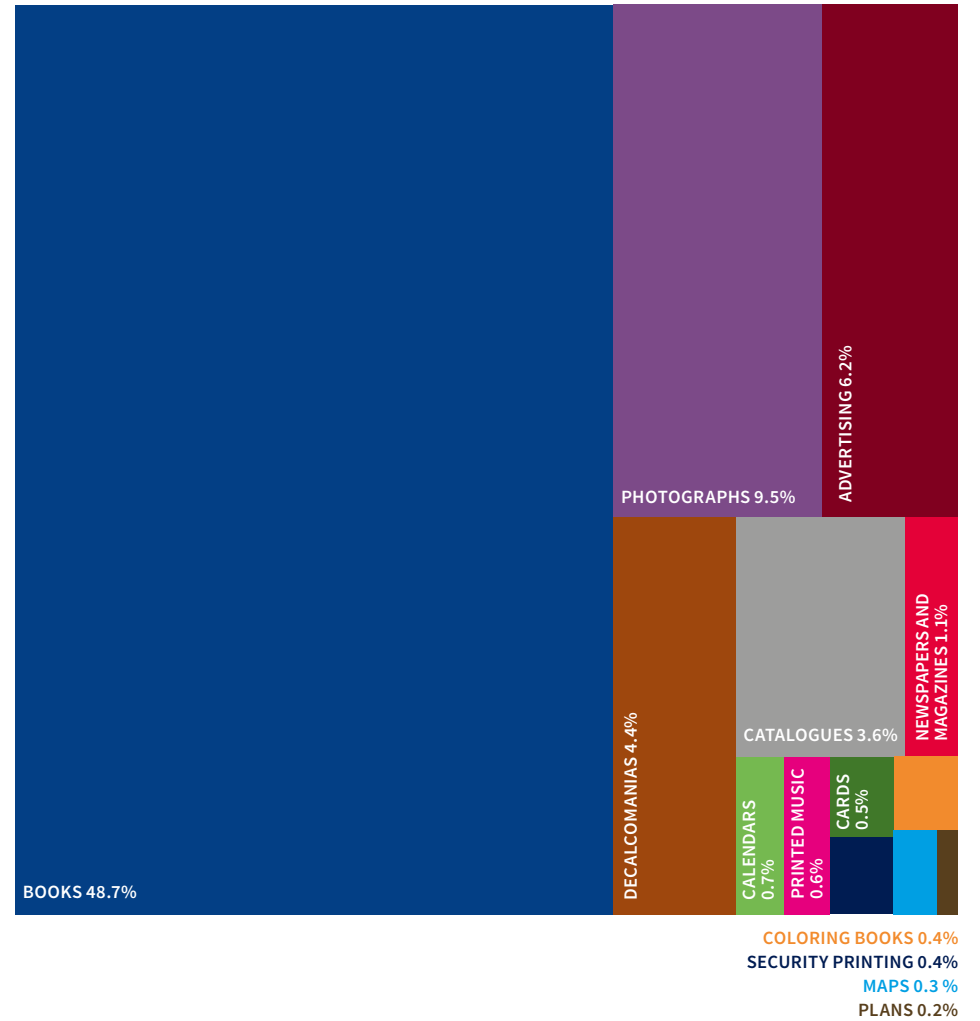
## 2.6 Trade with the US

Source: Eurostat

Most imported printed products from the US, 2022



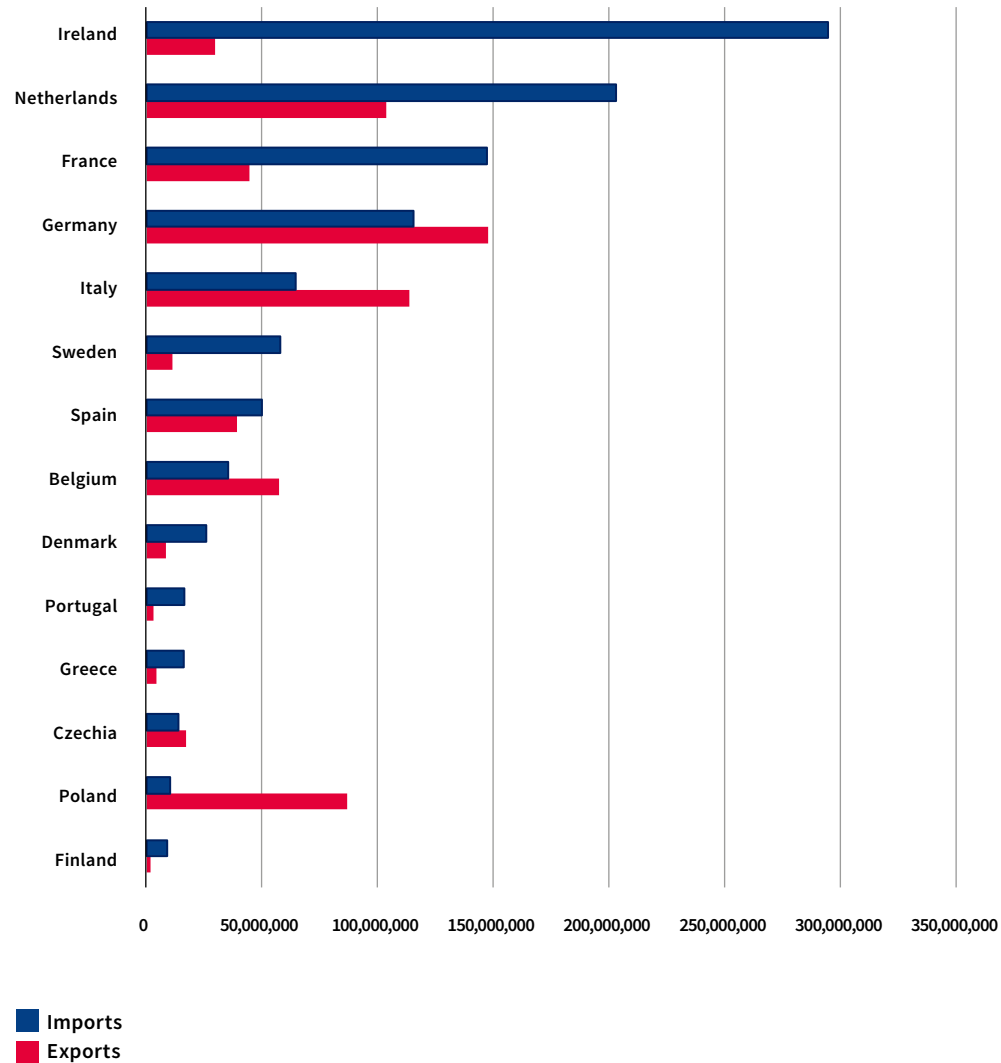
Most exported printed products to the US, 2022



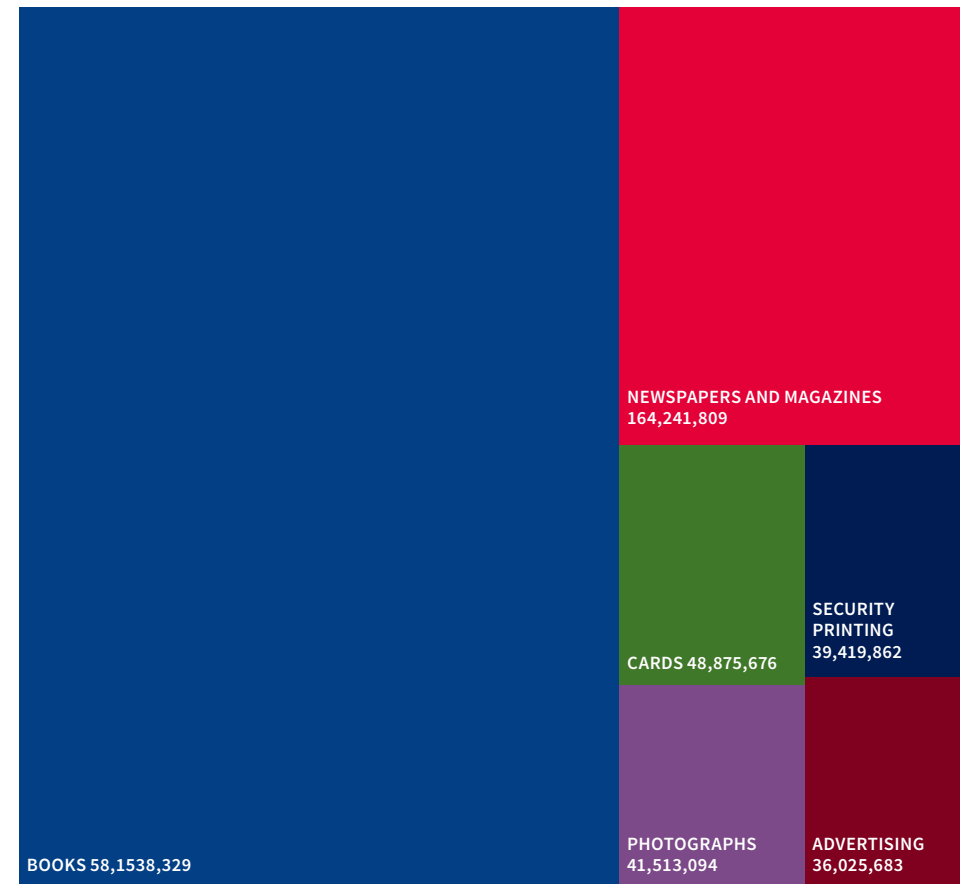
## 2.7 Trade with European partners – UK

Source: Eurostat

Trade of printed products with the UK, EU-27, 2022



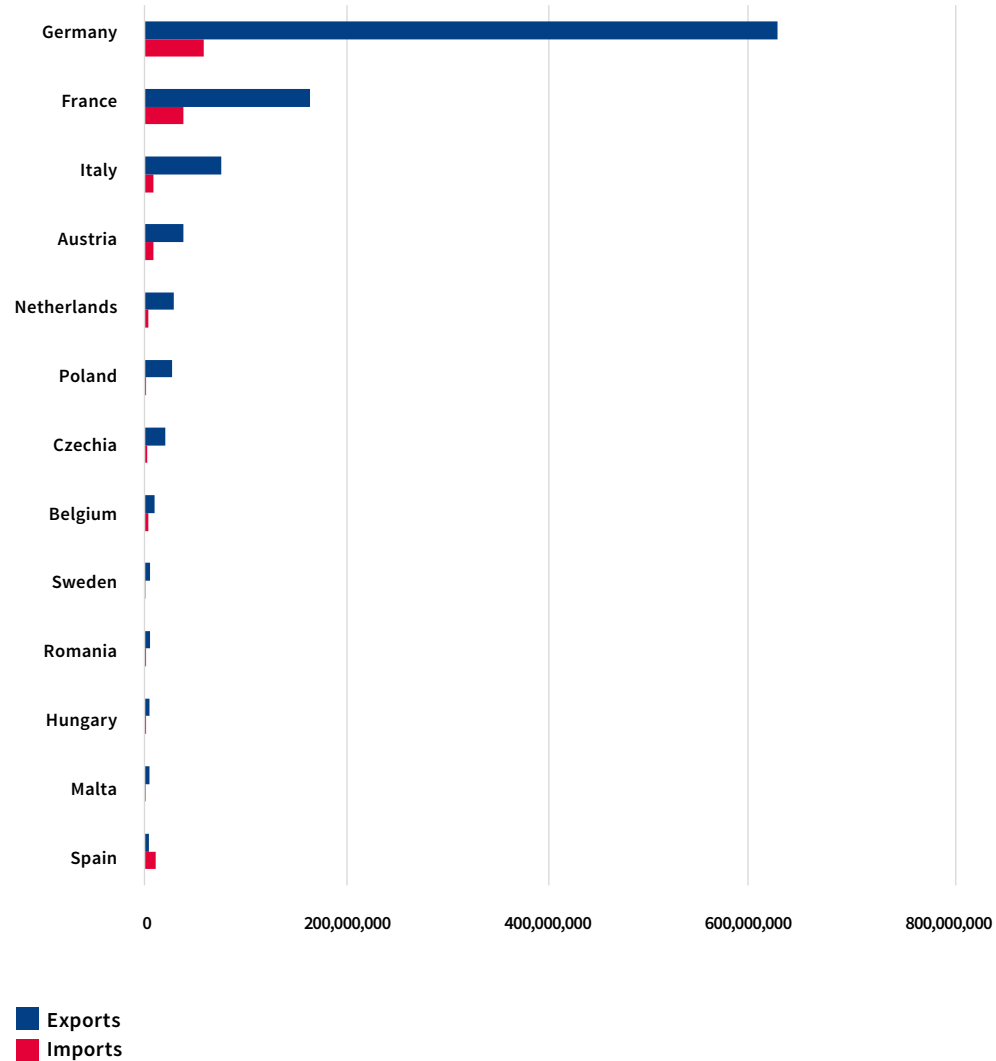
Main printed products imported from the UK, EU-27, 2022



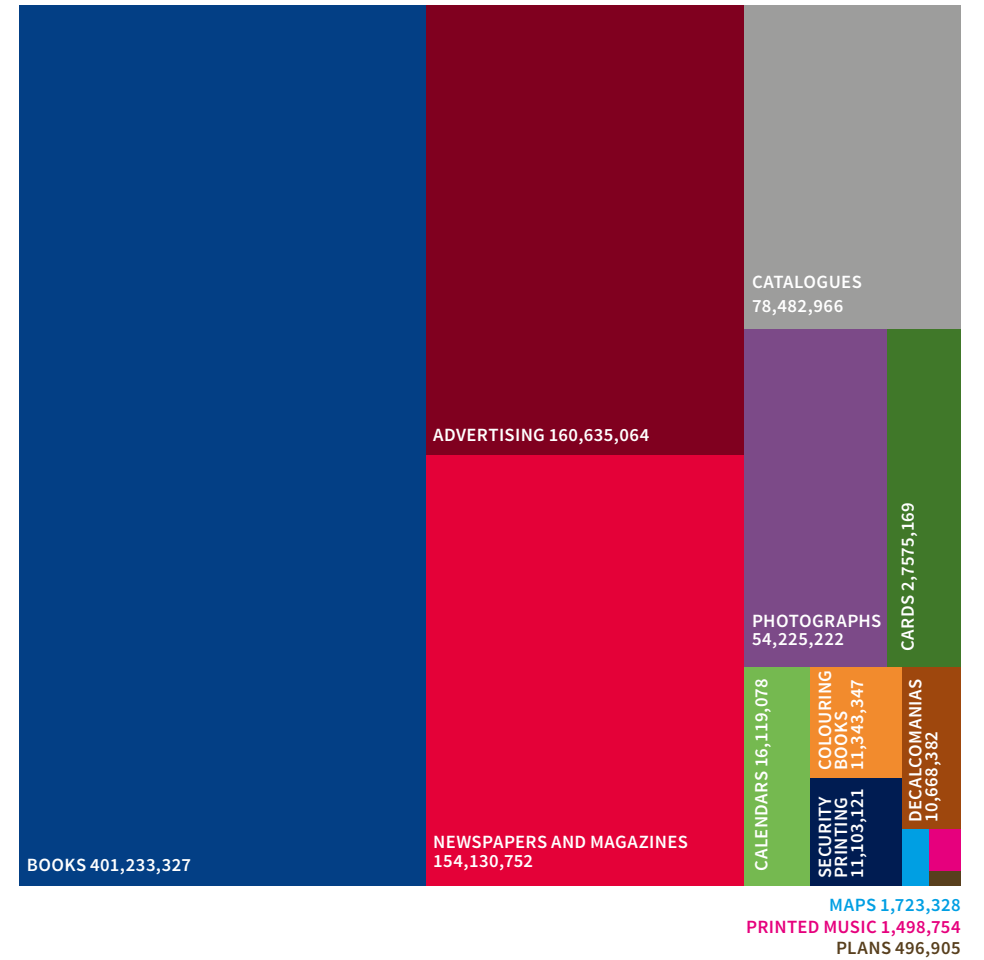
## 2.7 Trade with European partners – Switzerland

Source: Eurostat

Trade of printed products with Switzerland, EU-27, 2022



Main printed products imported from Switzerland, EU-27, 2022

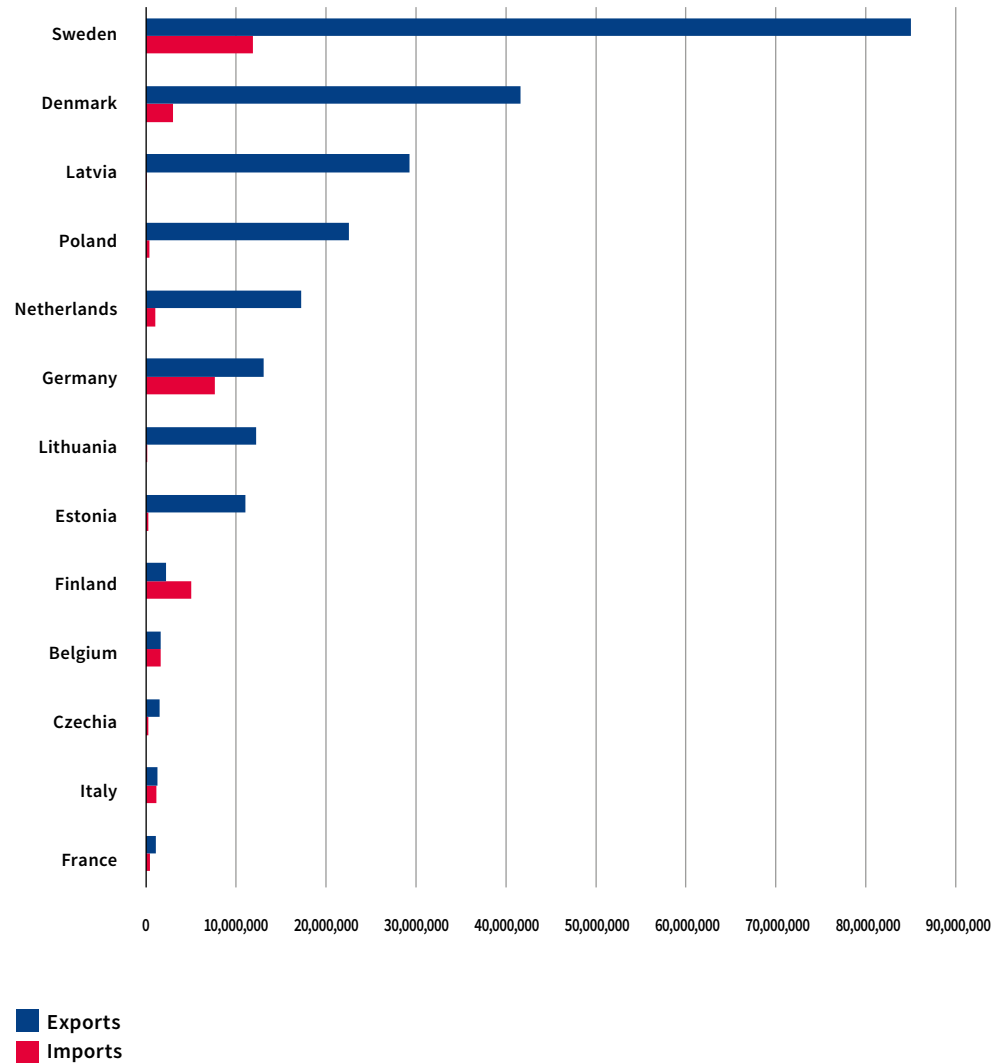




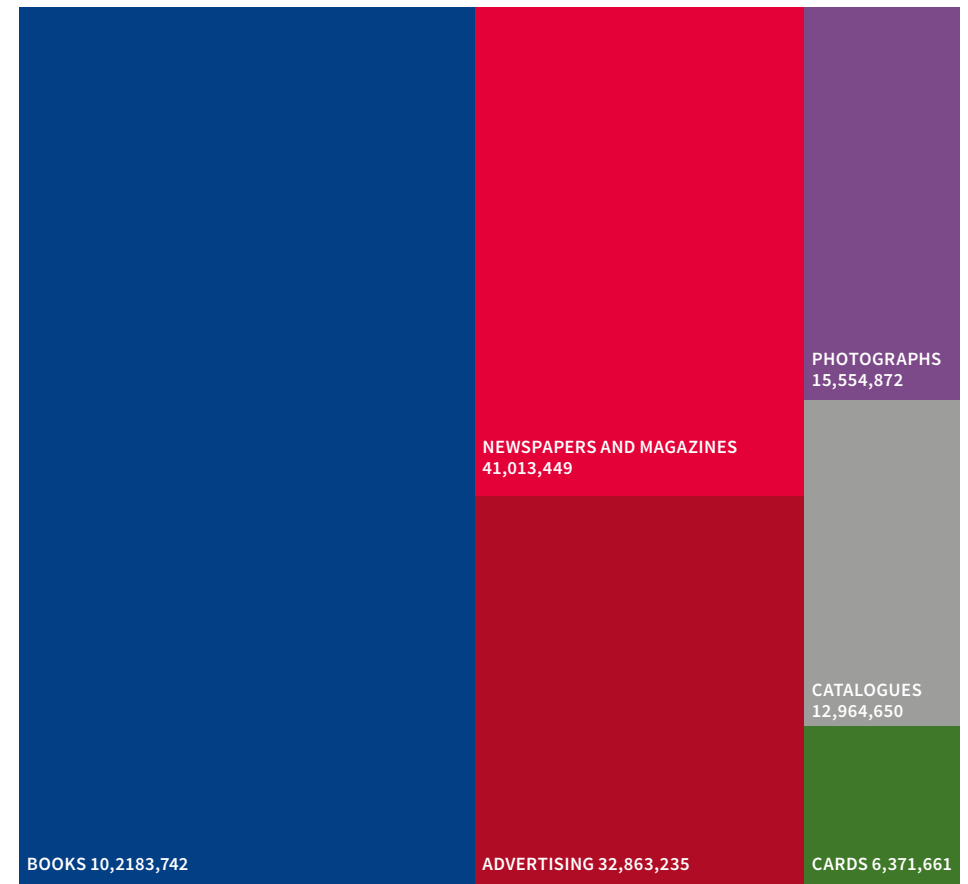
## 2.7 Trade with European partners – Norway

Source: Eurostat

Trade of printed products with Norway, EU-27, 2022



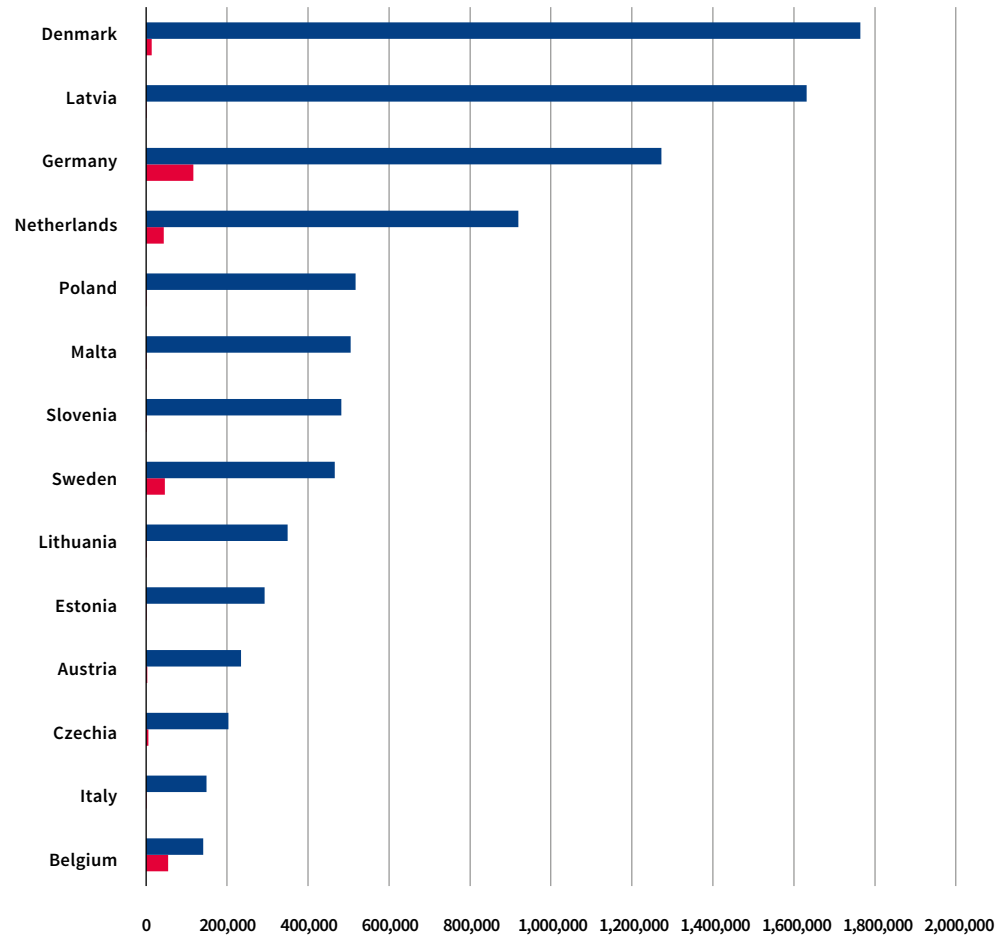
Main printed products imported from Norway, EU-27, 2022



## 2.7 Trade with European partners – Iceland

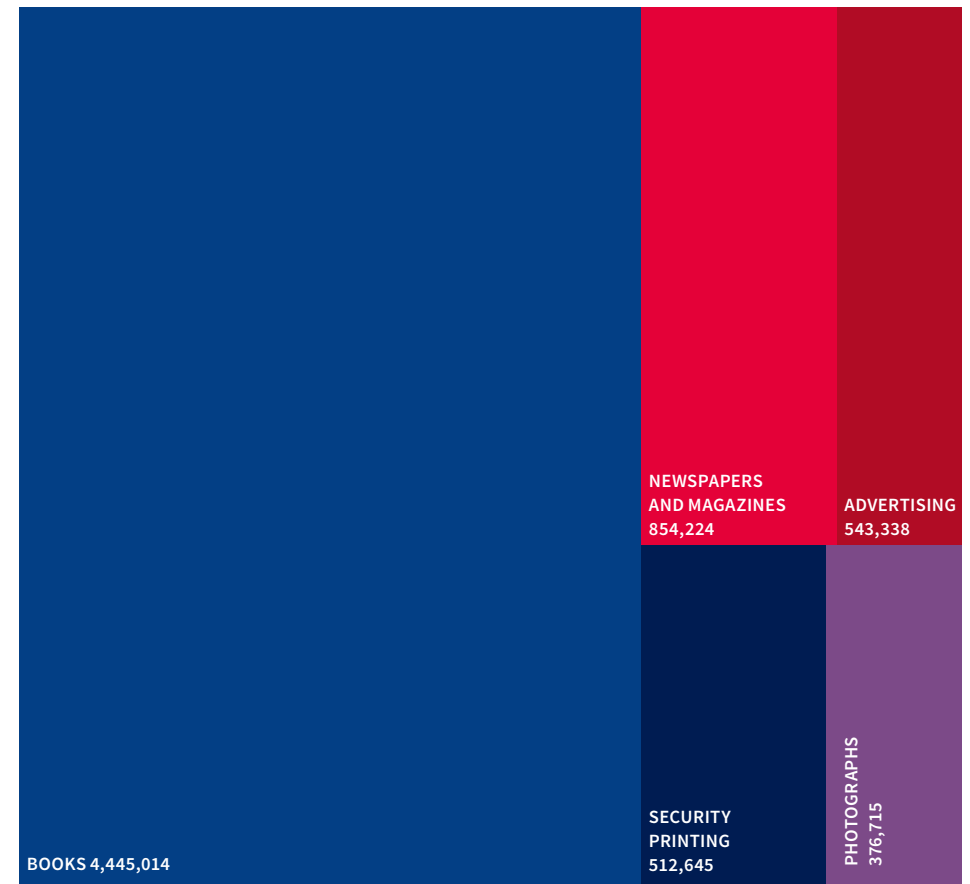
Source: Eurostat

Trade of printed products with Iceland, EU-27, 2022



Exports  
Imports

Main printed products imported from Iceland, EU-27, 2022



## 3.1 European print market review, 2023

Source: Contribution from Smithers, April 2023

### Introduction

In 2022, European printing and printed packaging output grew by 0.4% in real (constant) value terms and by 12.1% in current value terms to €177.6 billion.

Many factors influence demand for print or printed packaging and trends are changing. Both macro and micro economics influence organisational and individual expenditure. Spending on advertising and marketing was curtailed by economic uncertainty following disruption from the pandemic, which effectively stopped events, holidays and travel. Many print campaigns were postponed or abandoned, while advertising spend fell in newspapers, magazines and displays. Lower consumer spending meant lower sales of many non-discretionary items, which depressed demand for print products and packaging. In addition to economics, longer-term trends in demand for print and packaging are in part dependent upon demographics. Population numbers and age ranges help to determine print volumes. While choices made by marketers and retailers determine volumes and types of print produced, the preferences of individual consumers ultimately determine print demand. How consumers choose to spend their work and leisure time will impact upon print consumption. Consumer perception of the impact of print and packaging on the environment is increasingly important, as sustainability drives the behaviour of more people across the globe.

Growth rate forecasts are to decline to 2027, which is bad news for print as consumer spending power and marketing budgets are squeezed.

High inflation in 2022 and interest rate rises caused many consumers to curtail expenditure and reduce discretionary expenditure, as household incomes came under pressure. Historically high energy prices caused some paper providers to cease production.

Print and packaging was impacted in the pandemic and demand fell. As companies moved into survival mode, they cancelled or postponed investment decisions in 2020. There was a rebound in 2021 but not to previous levels. Supply chain issues continued into 2022, but levels of paper and board stock held in mills and warehouses did recover, particularly for packaging and label grades.

Pressure across supply chains resulted in significant price increases for paperboard, inks and coatings, plates and equipment in 2022 – along with transport and labour costs and for many commodities outside printing in 2022. In early 2022 a prolonged strike by Finnish paper workers at UPM led to major shortages of many grades, particularly in labels.

Many suppliers applied surcharges on paper, board, plates and inks in 2021 and 2022. It is not clear whether this is a permanent or temporary situation until supply chains rebalance, but there are reports of significant investments in board mills to meet growing demand.

Once again packaging revenues (incl. labels) and graphic print revenues stayed ahead at similar rates in 2022, with the graphic print sector declining by 1.2% in real value terms. While package & label printing output exceeded 2019 levels. It should be said, however, that the figures presented here for 2022 are provisional and may be subject to change as official data is published later in the year.

### The European Print Market

#### *Basis of presentation*

Smithers undertakes ongoing research into European and global print markets, and maintains a database of print market information covering printed output by print product, printing process and industry sector, as well as data on the key supply markets of new printing equipment, inks/colourants, paper/other substrates and prepress consumables. Much of the data here is based on data developed during the autumn of 2022 ahead of the publication of our report on the Future of European Printing to 2027, but this has since been reviewed and amended into 2023 especially in regard to inflation adjustments following the publication of the IMF's latest economic forecasts in April of this year.

We continue to consult with a wide number of secondary sources, including official sources and also printing and related, publishing and packaging trade associations. We also undertake regularly primary research projects including surveys of printers in addition to more wide-ranging discussions with key players in supply industries. This is backed up by a variety of other information on the operating environment for print, including economic, demographic, literacy, advertising and postal data, as well as data on trends IT and communications. Major research projects undertaken in 2022 and through into early 2023 have covered prospects for European print markets in the medium term (Future of European Global Printing), inkjet printing for corrugated packaging, long term prospects for digital print, analogue vs digital print, inkjet printing more generally and prospects for water-based vs solvent inks, in addition to other one-off projects and an ongoing prepress consumables syndicate.

We continue to consult Eurostat data when putting together our figures on trends in printing output, machinery, inks, paper and other elements. We also look at the original national statistics data sources from which the data is drawn, which generally provide an indication as to any changes in the respondent base and degree of error in reporting, and consequently enables us to assess whether data is comparable from one year to the next. It is true that accurate comparisons cannot be made in some cases, but in other instances there is genuinely useful data that is especially valuable in an industry that is difficult to track and define. On the matter of definition, it is also important to note that Eurostat data focuses on the commercial printing industry and excludes various printing undertaken by some in-house printing operations, packaging companies and business support

## 3.1 European print market review, 2023

Source: Contribution from Smithers, April 2023

services such as some transactional printers and direct mail publishing houses. Furthermore, often the practise of classification into product segments on the part of companies submitting revenue data can vary from one company to the next, with 'other printing' often including data on products classified separately elsewhere. Nevertheless, as one becomes more acquainted with the data, it becomes easier to establish that data that is consistent and provides a useful indication on printing trends.

Given that there is no single official source that surveys print output in all its forms from all types of companies engaged in printing activities, ultimately, almost all available data on print is indicative. The key is to undertake as much research as possible and ensure that final figures are consistent with key data, especially relating to inks consumption and paper/other substrate consumption. In terms of Smithers data on printing output – including for digital print – this is given at ex-factory prices, whereby the design and prepress work billed by the print supplier is included, along with the substrate value (unless supplied by the customer), and any printing/convertng and finishing. We are concerned with the invoice value to the print buyer rather than the final retail value of the product, and we do not include delivery costs, or any local taxes or VAT.

For companies offering mailing services the data handling, mail sorting (to obtain postal discounts) and inserting are included, but the postage costs are not. For in-plants, where the print supplier is a part of the buyer group, costs are apportioned at commercial rates rather than trying to follow the range of inter-company costing and transfer pricing. The value data includes substrates where there is more than one type of print process; in hybrid manufacture or two-pass overprinting, part of the value is apportioned to the digital production and part to the other processes in developing the final report data. The costs of the packaging substrates are included in the figures.

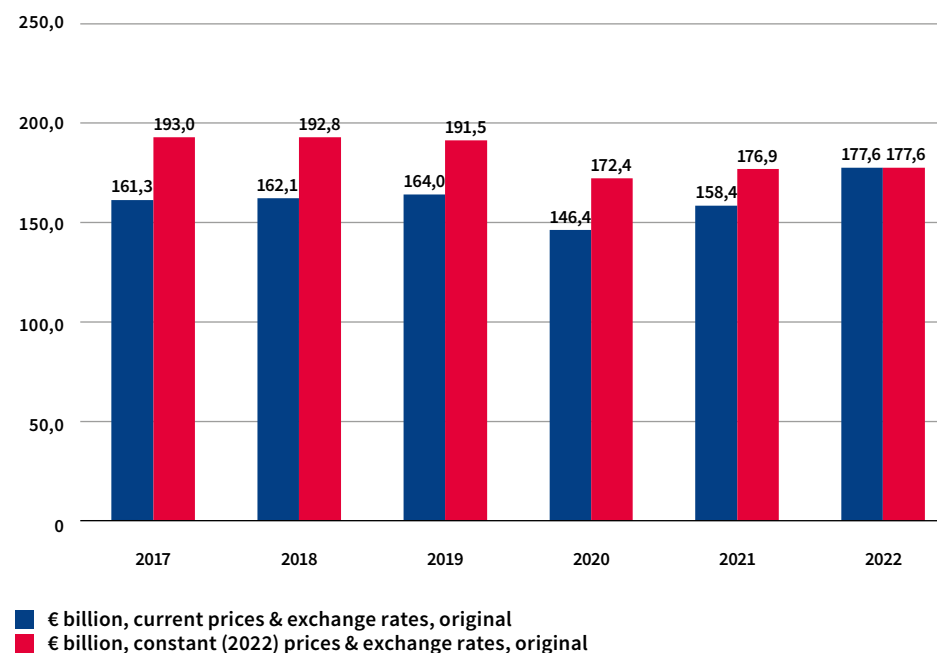
We cover all materials produced by specialist converters that are sold for profit, and estimates of values are provided for materials produced internally by in-plant operations, e.g. for in-house billing and statement applications. We do not distinguish between output from high-volume, industrial production equipment and low-cost, low-volume systems when sold for profit or used to pack or label goods produced by the user.

For the purposes of this publication, value data has been converted into Euros. In some cases, data is presented in terms of constant 2022 prices and exchange rates to reflect real changes in demand after the effects of inflation (as measured by the consumer prices index) and exchange rate movements. Volume data is generally presented in terms of tonnages unless otherwise stated.

### The market in 2022 and beyond

European printing output, including package printing output, grew by 12.1% in current terms and by 0.4% in real terms (excluding the effects of inflation and exchange rate movements) to €178 billion in 2022. Graphic print and package & label printing had contrasting fortunes (down 1.2% in real terms for graphic print and up 1.6% by the same measure for package & label printing); this highlights the much worse performance of graphic print in 2022, and the trend is expected to continue in 2023.

### European Printing & Printed Packaging Output, 2017-2022 (€ billion)



**Note:** Constant price values show market data at 2022 prices, removing impact of inflation and exchange rate fluctuations from one year to the next.

## 3.1 European print market review, 2023

Source: Contribution from Smithers, April 2023

Euro-Graph statistics for 2022 pointed to a rather sluggish performance in paper industry activity, complicated by a difficult supply situation, following the backlash from volatile energy pricing and the conflict between Ukraine and Russia. European graphic paper sales fell by 10.2% in 2022 to 17.76 million tonnes after a small recovery of 3.5% in 2021. Newsprint demand fell by a further 6.4% (down 3.5% in 2021) with SC-magazine demand down 14.6% (1.7% down in 2021). Across other grades, demand for coated mechanical reels fell by 21.2% (2.9% increase in 2021); coated woodfree paper demand fell by 8.9% (8.0% increase in 2021); other uncoated mechanical papers (including improved newsprint) dropped by 11.7% (rise of 5.1% in 2021); and uncoated woodfree paper demand fell by 4.9% after a 6.9% increase in 2021. Even after the negative effects of COVID, we still see a considerably sharp decline in performance across all graphic paper industries, exemplified by the poor performance of magazines and newspapers.

### Supply chain issues

Covid-19 demonstrated the potential dangers of a just-in-time manufacturing strategy as widespread disruption led to shortages of many supermarket lines, with consumers in panic-buying mode. Lockdowns and travel bans caused disruption and shortages, while resultant bar and hotel closures meant a rapid switch away from out-of-home to retail consumption of food and beverage products.

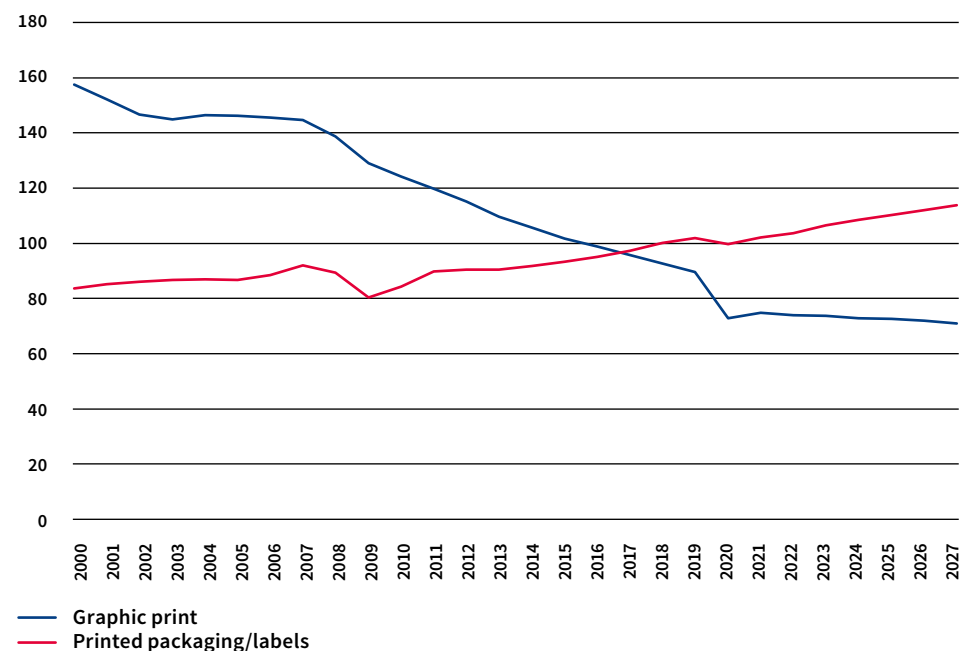
Ordering patterns reported by print and packaging suppliers changed as organisations reacted to fluid market conditions, with forecasts and plans updated on a daily basis. Rapid response and agile supply are increasingly important tools for print and packaging providers to help solve customer problems.

The Russian invasion of Ukraine dominated Europe in 2022. It resulted in five million refugees migrating to other European economies. The effect on Europe is the same as the impact on each European country – massively increased commodity prices, supply-side disruptions, fuel inflation, falling real wages and falling business profits. Therefore, overall GDP growth for the region was muted. Europe’s policymakers will feel the economic burden of imposing measures to help struggling households and firms, of increasing energy security by securing new infrastructure and pipelines and of combating rapidly falling real wages. The war will have long-term socio-economic and political consequences as the region rebuilds Ukraine and their own struggling nations.

### Market forecasts

Going forward, we expect package/label printing revenues to grow by 1.6% per annum in real terms over the next five years to reach €113.8 billion by 2027, with graphic print falling by more than one per cent per annum on average to €70.9 billion by 2027. The overall value of the European print market will amount to €185 billion by the end of the period, up from €178 billion in 2022.

Trends in European Printing & Printed Packaging Output, 2000-2027f (€ billion, constant 2022 prices & exchange rates)



Note: Constant price values show market data at 2022 prices, removing impact of inflation and exchange rate fluctuations from one year to the next.

### National markets

Out of overall estimated printing revenues of €177.6 billion in 2022, Western European countries contributed €146.8 billion, led by Germany (€35.5 billion), the UK (€24.1 billion) and France (€20.4 billion). Of the €30.9 billion in Eastern European printing revenues in 2022, Russia and Poland between themselves accounted for over half of the total at €9.6 billion and €8.5 billion respectively. It should be said that it is extremely difficult to predict what will happen in Russia and especially Ukraine over the coming years, but is clear that sanctions will take a major toll on the Russian market and it will take some years for the situation to return to normality in Ukraine.

## 3.1 European print market review, 2023

Source: Contribution from Smithers, April 2023

European Printing & Printed Packaging Output by Country and by Region, 2017-2027 (€ billion, current prices & exchange rates; constant\* 2022 prices & exchange rates)

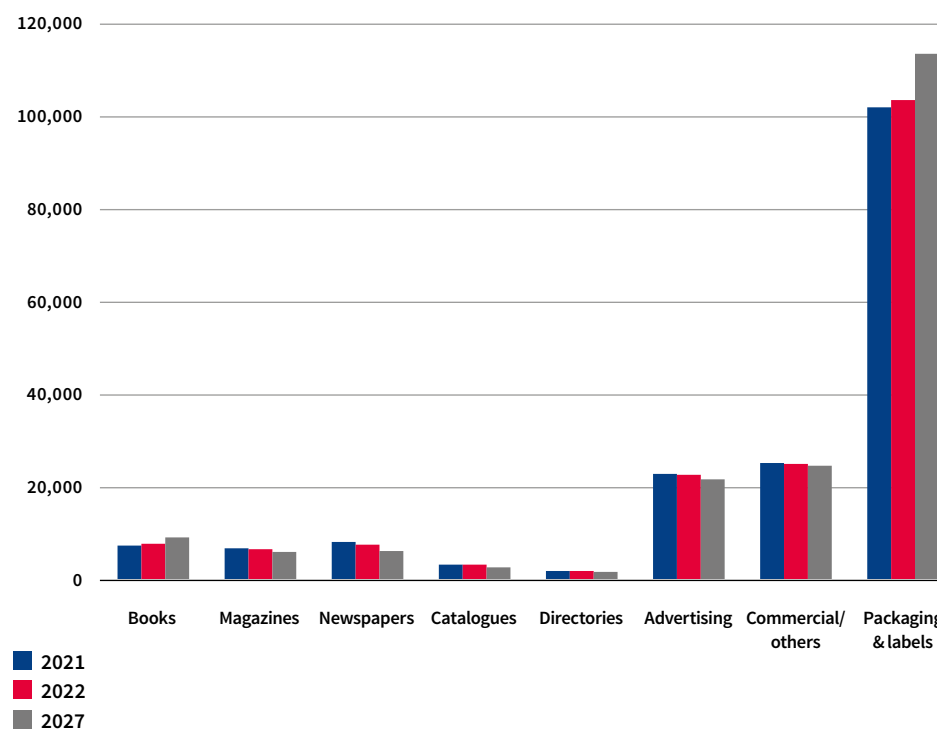
Country	Current prices & exchange rates				Constant (2022) prices & exchange rates*			
	2017	2021	2022E	2027F	2017	2021	2022E	2027F
<b>Western Europe</b>	<b>135.7</b>	<b>132.1</b>	<b>146.8</b>	<b>171.1</b>	<b>160.7</b>	<b>144.7</b>	<b>146.8</b>	<b>149.4</b>
Germany	33.4	32.2	35.5	40.7	40.0	35.3	35.5	35.9
UK	20.7	21.0	24.1	29.6	25.8	23.5	24.1	24.4
France	19.1	18.7	20.4	23.2	21.8	20.1	20.4	20.7
Italy	16.9	16.1	18.2	20.5	20.1	18.1	18.2	18.0
Spain	10.8	10.7	11.7	14.2	12.4	11.3	11.7	12.6
Netherlands	5.9	6.1	6.8	7.9	7.3	6.7	6.8	7.0
Belgium	4.8	4.7	5.2	5.8	5.8	5.2	5.2	5.3
Switzerland	4.9	4.5	5.1	6.1	5.7	5.0	5.1	5.1
Austria	3.9	3.7	4.2	5.1	4.7	4.1	4.2	4.4
Sweden	4.0	3.4	3.7	4.0	4.3	3.7	3.7	3.8
Denmark	2.2	2.5	2.7	3.4	2.5	2.7	2.7	2.8
Finland	2.0	1.8	2.0	2.3	2.3	2.0	2.0	2.0
Greece	1.7	1.7	1.8	2.1	1.9	1.8	1.8	1.9
Portugal	1.6	1.5	1.7	2.0	1.8	1.6	1.7	1.7
Norway	1.8	1.4	1.6	1.6	1.9	1.5	1.6	1.5
Ireland	1.4	1.3	1.5	1.8	1.6	1.4	1.5	1.6
Others	0.7	0.6	0.7	0.8	0.7	0.7	0.7	0.7
<b>Eastern Europe</b>	<b>25.6</b>	<b>26.3</b>	<b>30.9</b>	<b>40.6</b>	<b>32.3</b>	<b>32.2</b>	<b>30.9</b>	<b>35.3</b>
Russia	8.7	7.9	9.6	10.3	10.9	10.8	9.6	9.8
Poland	6.5	7.3	8.5	11.8	8.0	8.3	8.5	10.1
Czechia	2.3	2.6	3.2	4.7	3.3	3.2	3.2	3.8
Hungary	1.4	1.5	1.7	2.4	1.6	1.7	1.7	2.1
Romania	1.2	1.3	1.5	2.2	1.5	1.5	1.5	1.8
Slovenia	0.7	0.8	0.9	1.1	0.9	0.9	0.9	1.0
Bulgaria	0.5	0.6	0.7	0.8	0.7	0.6	0.7	0.8
Ukraine	0.9	1.0	0.7	1.2	1.3	1.2	0.7	1.1
Others	3.4	3.3	4.1	6.0	4.1	4.0	4.1	4.9
<b>Europe</b>	<b>161.3</b>	<b>158.4</b>	<b>177.6</b>	<b>211.7</b>	<b>193.0</b>	<b>176.9</b>	<b>177.6</b>	<b>184.7</b>

Note: \*Removes impact of inflation and exchange rate fluctuations from one year to the next.

### Print products

While 2022 saw a strong performance for books and also packaging & labels, magazines, newspapers, catalogues and directories posted declines of mid-single digit declines while others such as advertising print and commercial print also declined but not as sharply. There was little evidence of the post-2020 COVID rebound continuing, with many major retailers cutting back on catalogue and promotional printing. Package & label printing's continued strong performance was attributed in part to sustained growth in metal can and corrugated package printing.

European Printing & Printed Packaging Output by Print Product, 2021-2027f (€ million, constant 2022 prices & exchange rates)



Note: Constant price values show market data at 2022 prices, removing impact of inflation and exchange rate fluctuations from one year to the next.

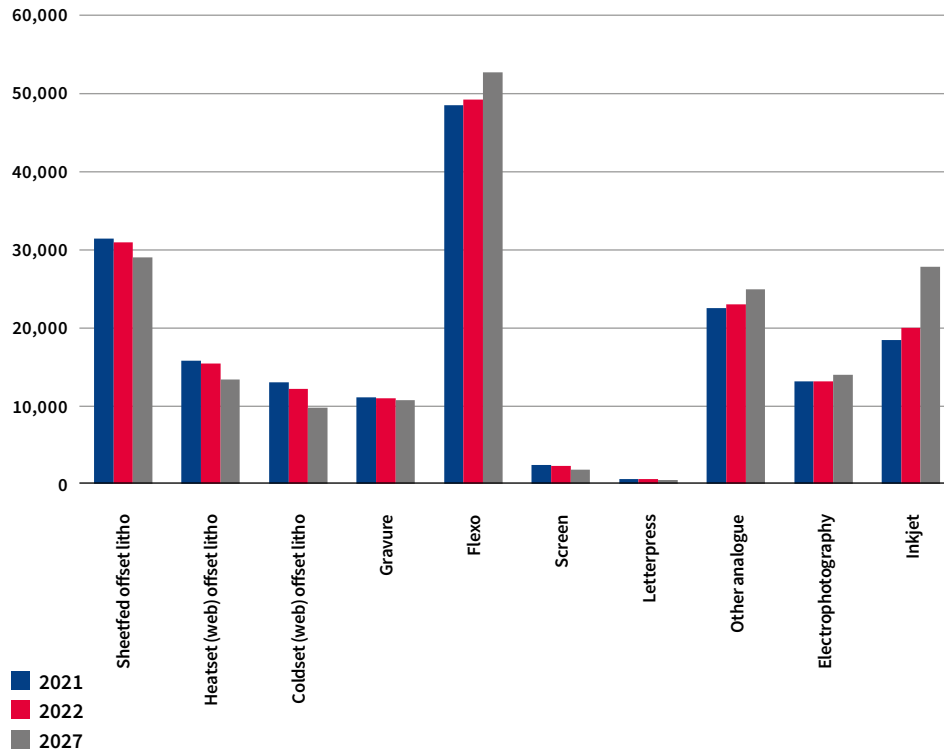
# 3.1 European print market review, 2023

Source: Contribution from Smithers, April 2023

## Printing processes

In 2022, flexo sustained its position as the single largest printing process sector with output rising by 1.5%, broadly in line with the growth in package & label printing areas. Digital printing, however, continues to be the fastest growing area with inkjet printing revenues rising at 8.1% during the year. The aggressive performance in the market of inkjet comes at the expense to some extent of electrophotography, up just 0.4% in comparison to more significant growth rates in earlier years.

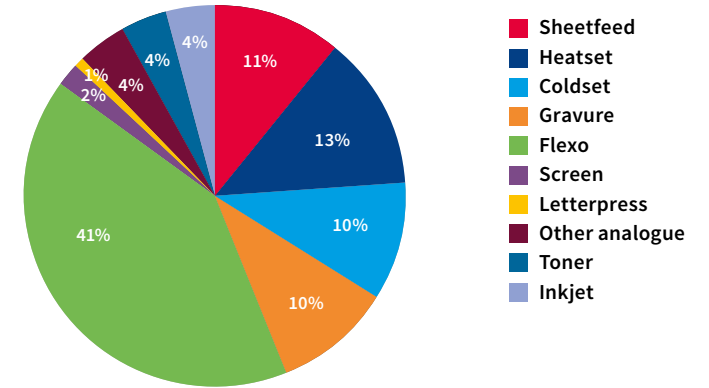
European Printing & Printed Packaging Output by Process, 2021-2027f (€ million, constant 2022 prices & exchange rates)



Note: Constant price values show market data at 2022 prices, removing impact of inflation and exchange rate fluctuations from one year to the next.

European Printing Inks Consumption by Type, 2022 (% share by volume)

Total printing inks & colourants consumption: 721,000 tonnes

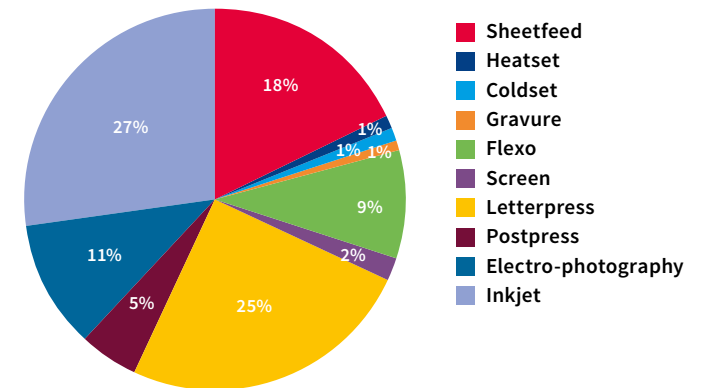


## Printing equipment

Printing equipment sales declined by 1.6% in 2022 and remain well below 2019 levels. Digital printing accounted for 38% of sales at €1.60 billion.

European Sales of New Printing Equipment by Type, 2022 (% share by value)

Total sales of new printing equipment: €4.25 billion



## 3.1 European print market review, 2023

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Source: Contribution from Smithers, April 2023

### Summary

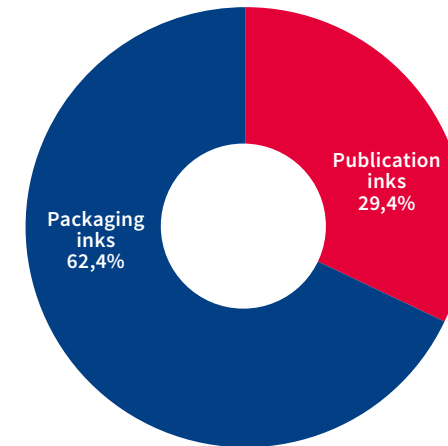
It appears to the case that Europe seems to have overcome the main economic impacts of COVID-19. However, the European economic climate is presented with new impacts with volatile energy prices, high levels of inflation and the continued conflict in Ukraine and Russia. In addition, it appears that there has been a permanent change in printing demand after changes to consumers' daily routines and business/print capacity impacts during COVID, although we would still expect there to be some pockets of recovery over the coming years as societal habits begin to return to normal in most countries, at least outside of Ukraine. There is though a higher than usual degree of uncertainty about forecasts given the mix of economic and political upheaval, and this should be borne in mind when looking ahead.



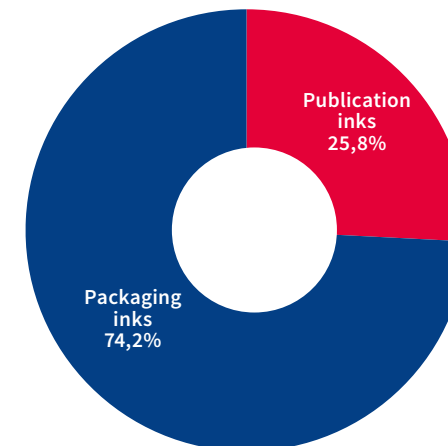
## 4.1 Ink market

Source: Eurostat  
EuPIA (European Printing Ink Association)\*

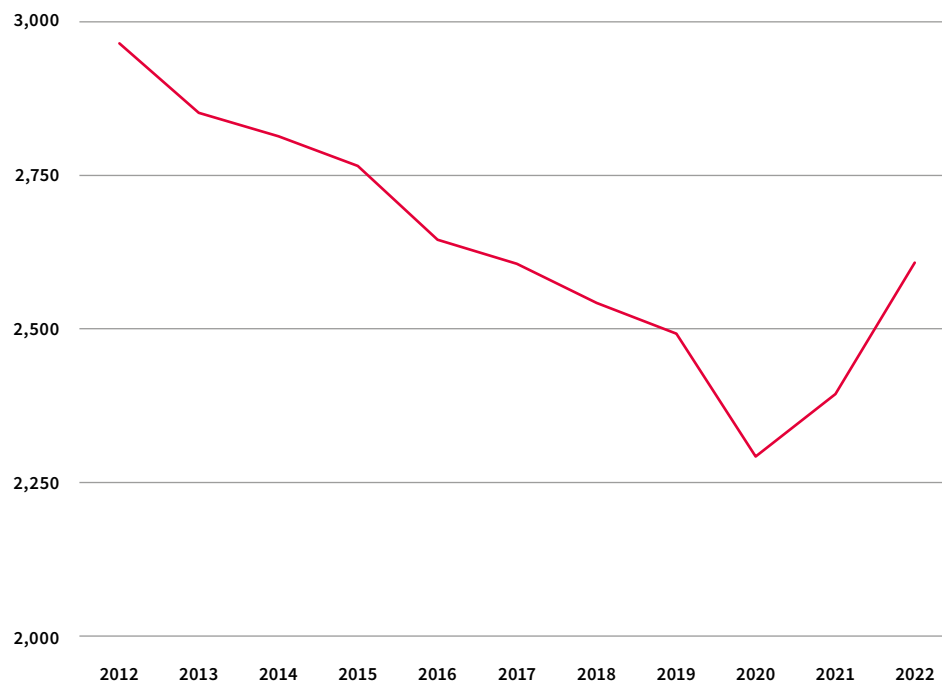
Sales volume, in tonnes, 2022



Sales value, in million €, 2022



Sales value of printing inks, Europe+UK+Switzerland+Norway, 2012-2022, in million €



\*EuPIA data are provided for the following global ink categories:

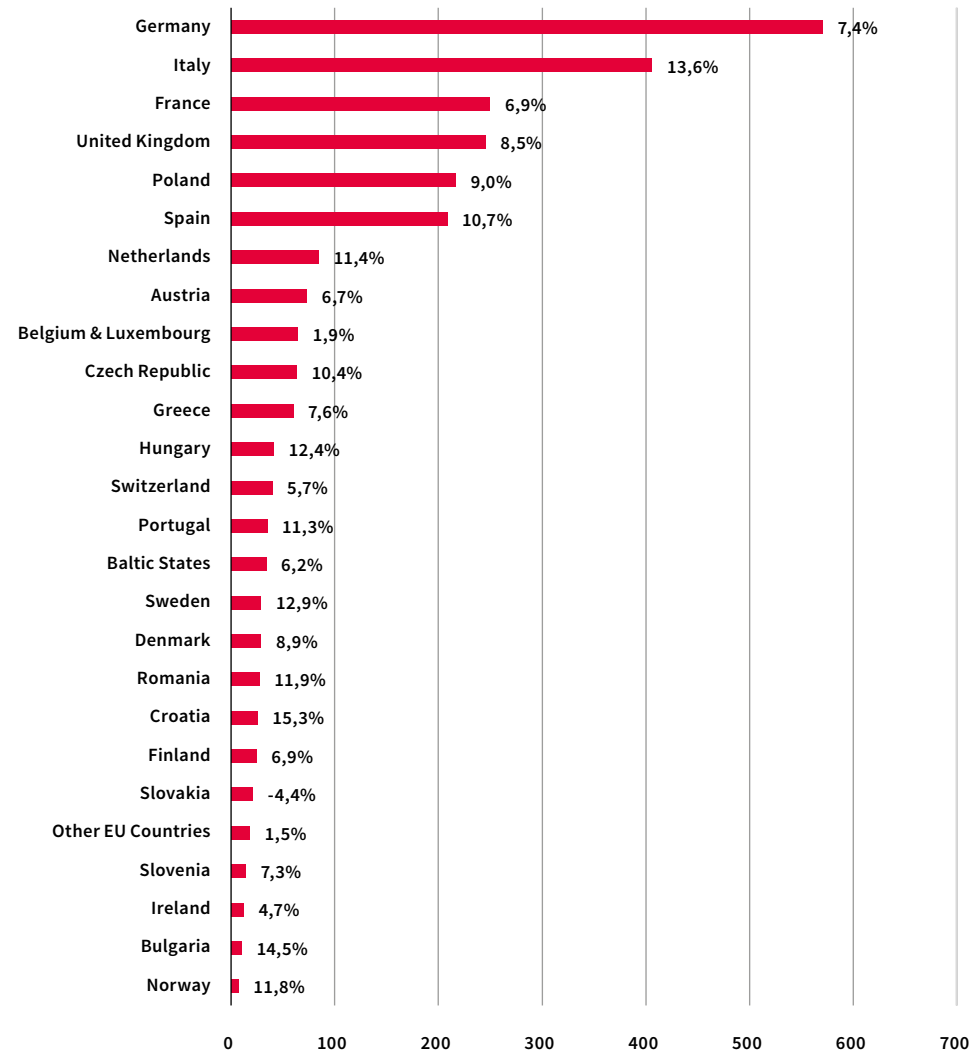
- Publication inks: they comprise web offset inks (coldset and heatset), sheetfed offset inks, publication gravure inks and related overprint varnishes.
- Packaging inks: they comprise flexographic inks, specialty gravure inks, energy curing inks and related varnishes.

It is estimated that the data represent overall more than 90% of the total European market.

## 4.1 Ink market

Source: EuPIA (European Printing Ink Association)

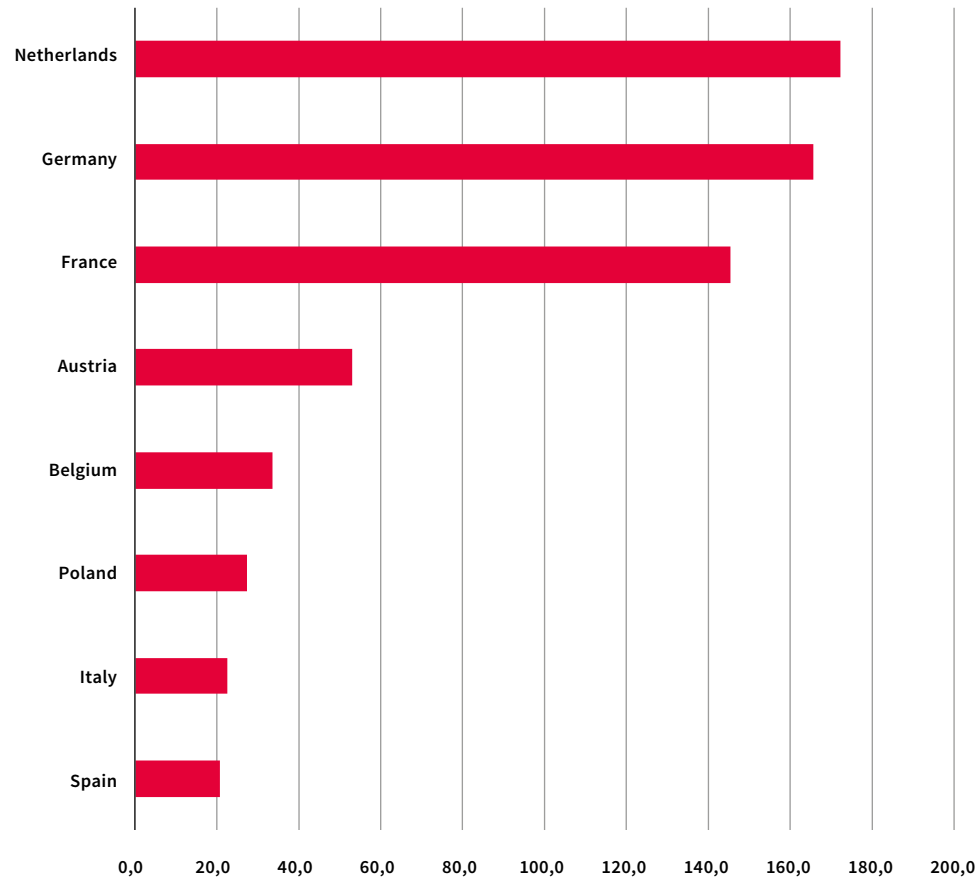
Printing inks sales value by country, 2022, in million € and comparison with 2021



## 4.1 Ink market

Source: Eurostat

Main EU importers of printing inks from non-EU countries, 2022, in million €



Main exporters of printing inks to the EU, 2022



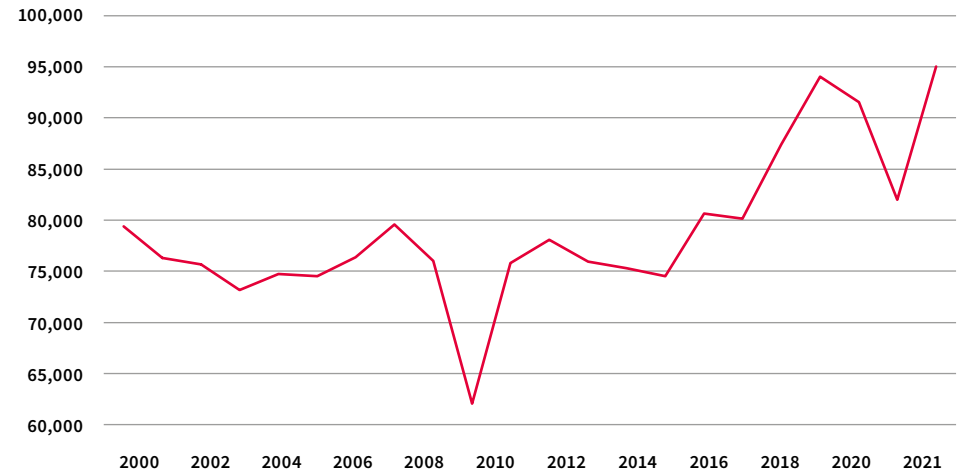
The European Union imported € 693 million worth of printing inks from non-EU countries in 2022.

## 4.2 Paper market

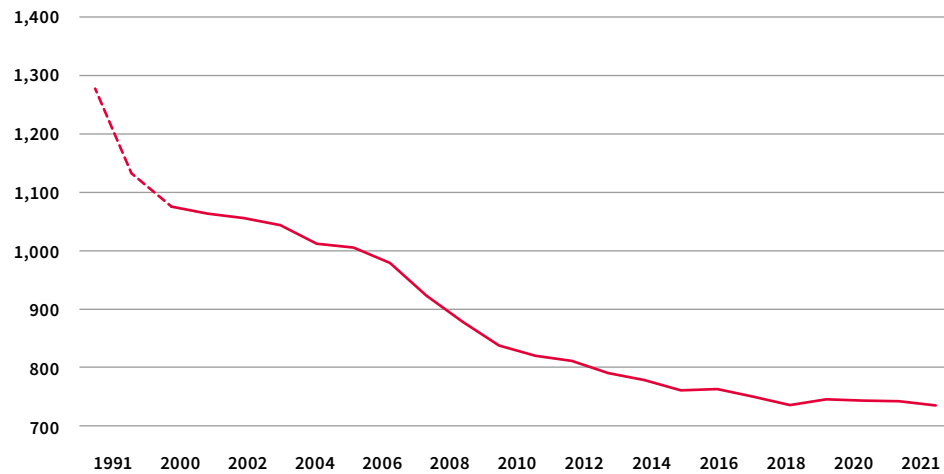
€95 billion turnover  
680 companies  
180,000 employees

Source: CEPI (Confederation of European Paper Industries)

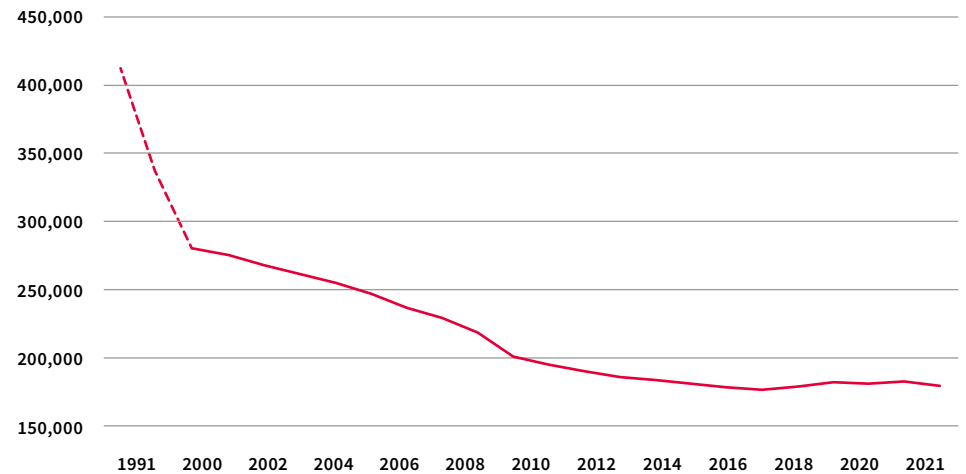
Turnover in the European paper industry, 2000-2021



Number of European paper and board mills, 1991-2021



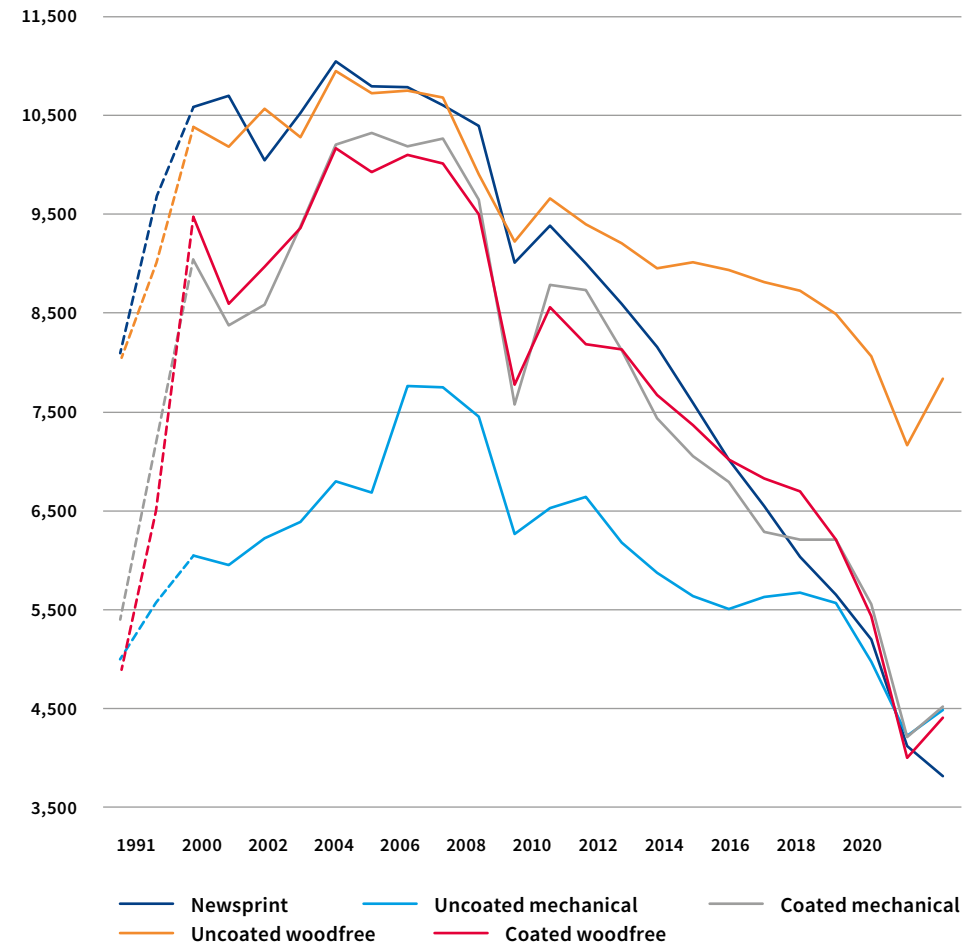
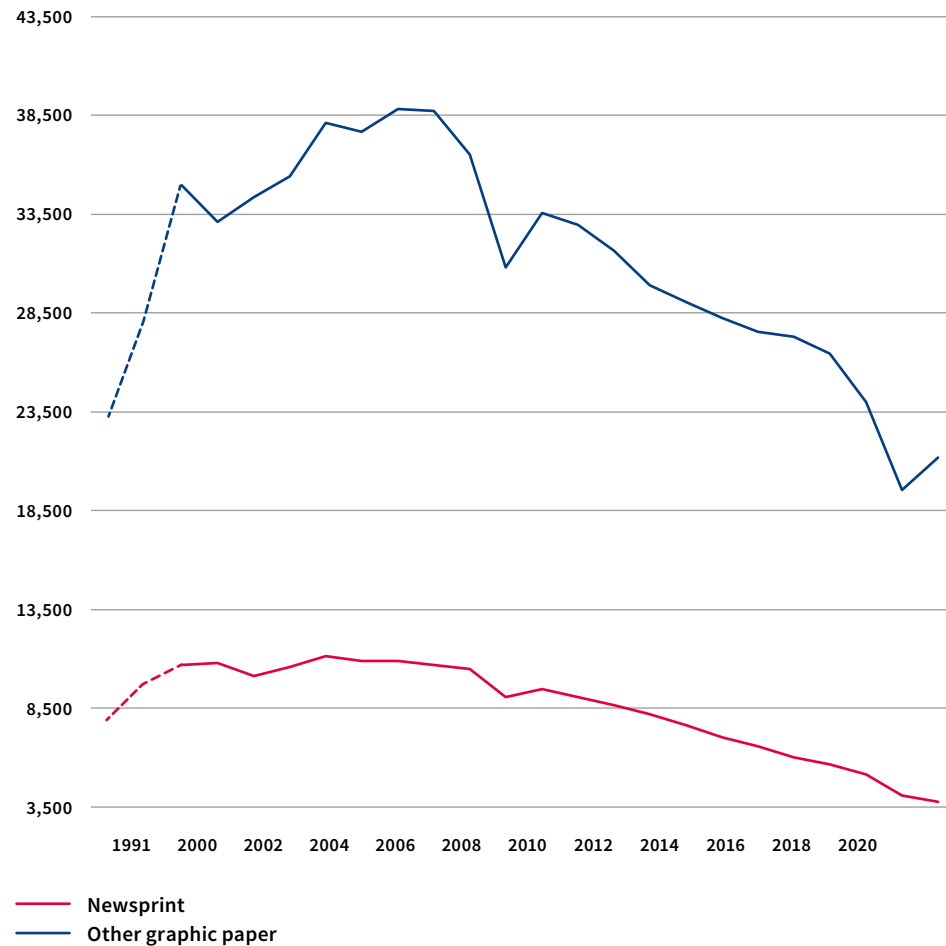
Number of employees in the European paper industry, 1991-2021



## 4.2 Paper market

Source: CEPI (Confederation of European Paper Industries)

European production of graphic paper, 1991-2021, in million tonnes



■ 25 million tonnes of graphic paper were produced in Europe in 2021. This is 5.6% more than in 2020. All paper grades decreased except newsprint which decreased by 7.4%.

■ Since 2000, graphic paper production in Europe decreased by 45%. Newsprint experienced the main decrease (-64%).

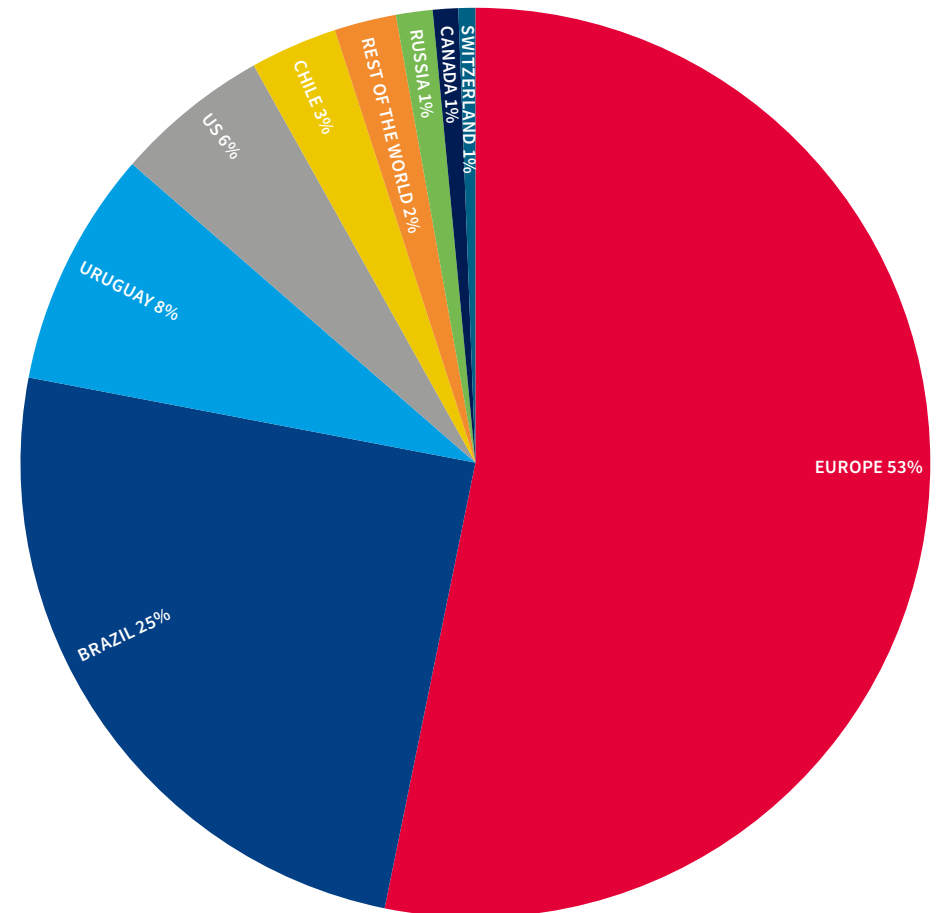
## 4.2 Paper market

Source: CEPI (Confederation of European Paper Industries)

Origin of pulp consumed in Europe, in %, 2021

53% of the pulp consumed in Europe originate from Europe.

With 25% from Brazil, 8% from Uruguay and 6% from the US, in total, over 36% of the pulp consumed in Europe originate from South America.

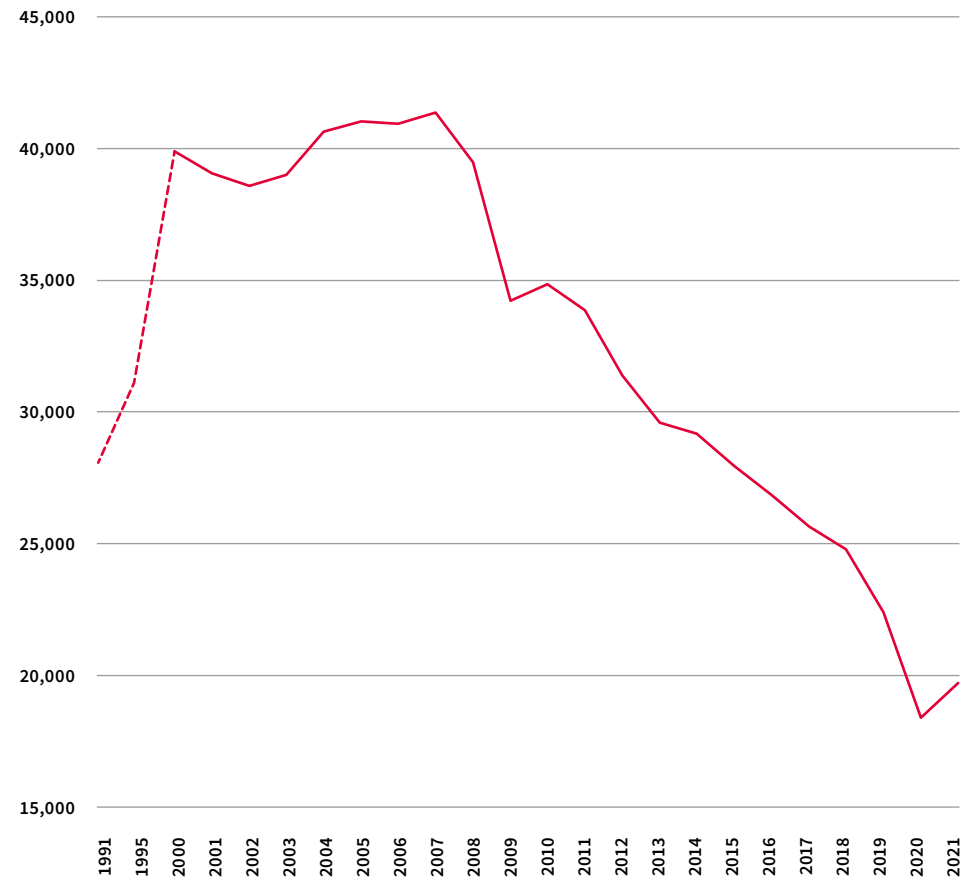


## 4.2 Paper market

Source: CEPI (Confederation of European Paper Industries)  
Eurograph (European Association of Graphic Paper Producers)  
Eurostat

19.7 million tonnes  
of paper consumed  
in Europe in 2021

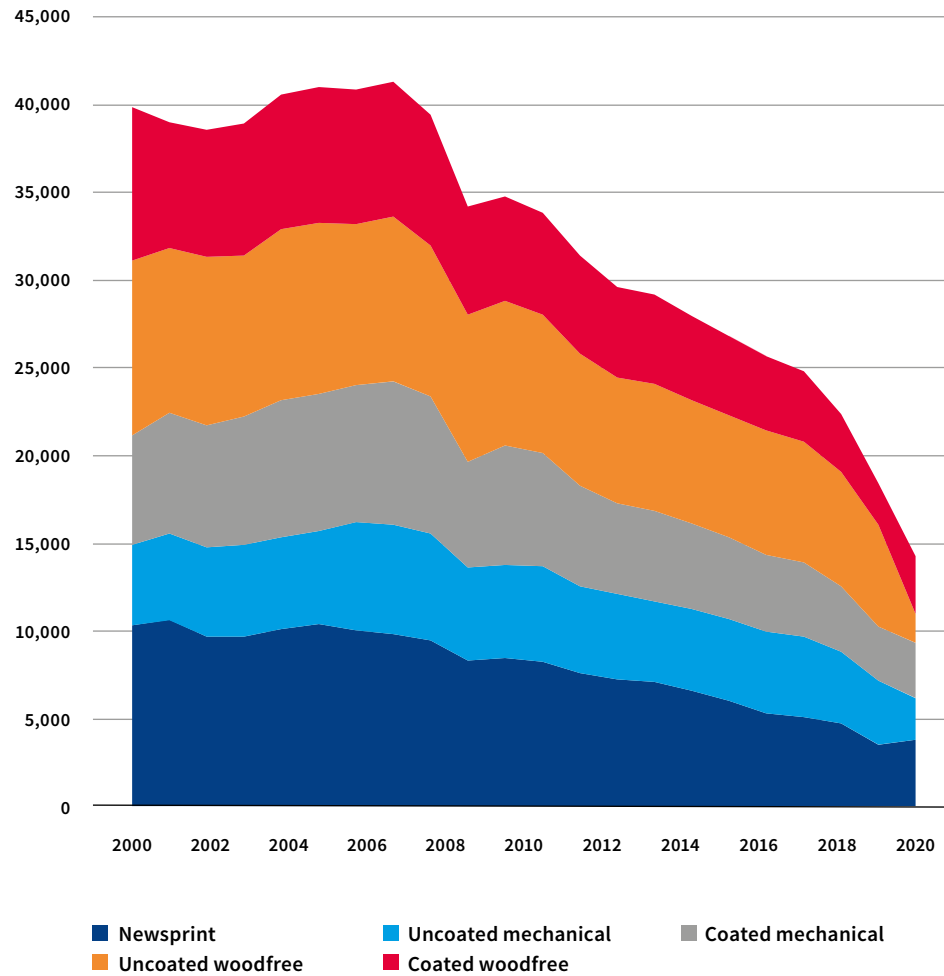
Graphic paper consumption in the EU, 1991-2021, in thousand tonnes



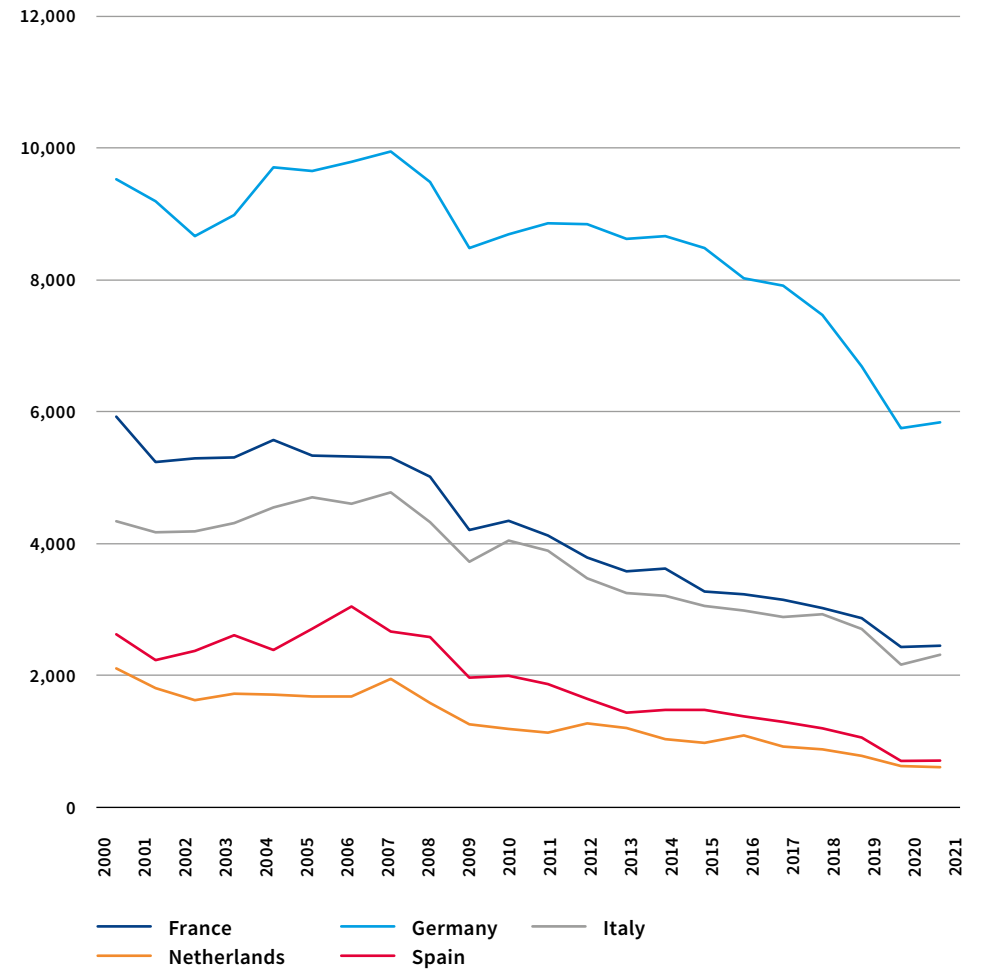
## 4.2 Paper market

Source: CEPI (Confederation of European Paper Industries)  
Eurograph (European Association of Graphic Paper Producers)  
Eurostat

Graphic paper consumption in Europe, 2000-2021 (By grade)



Graphic paper consumption in Europe, 2000-2021 (By country)

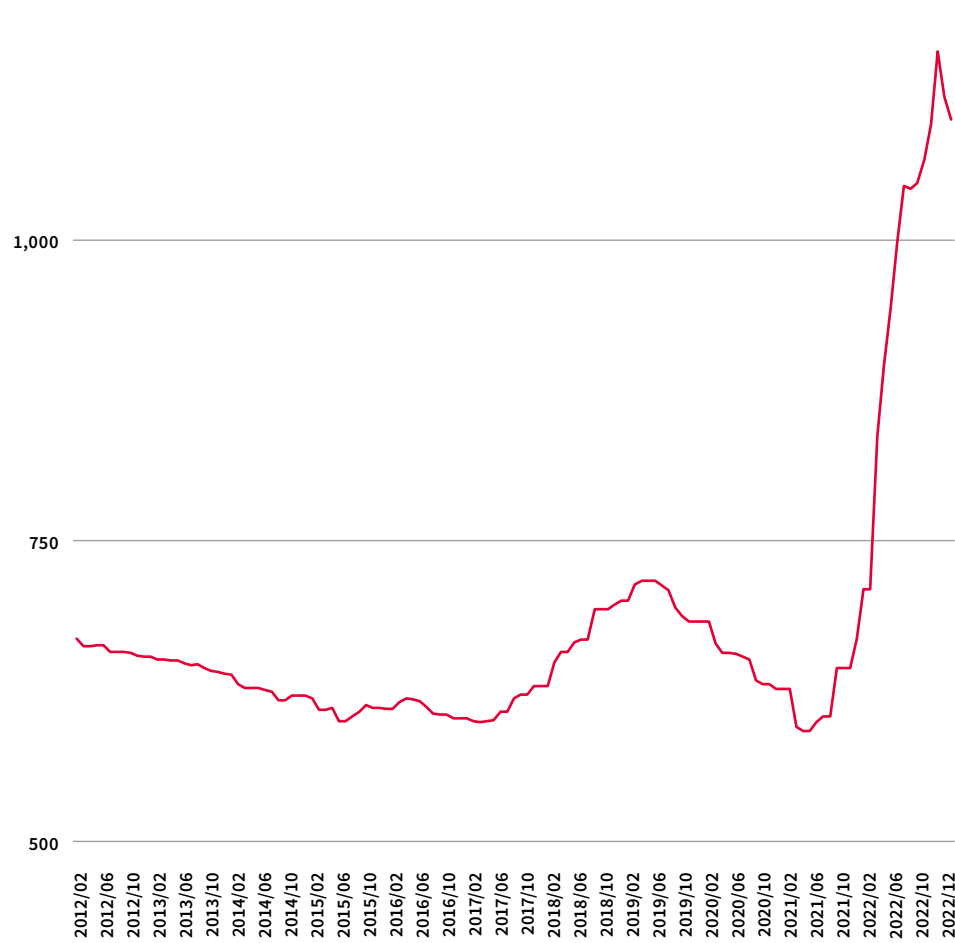




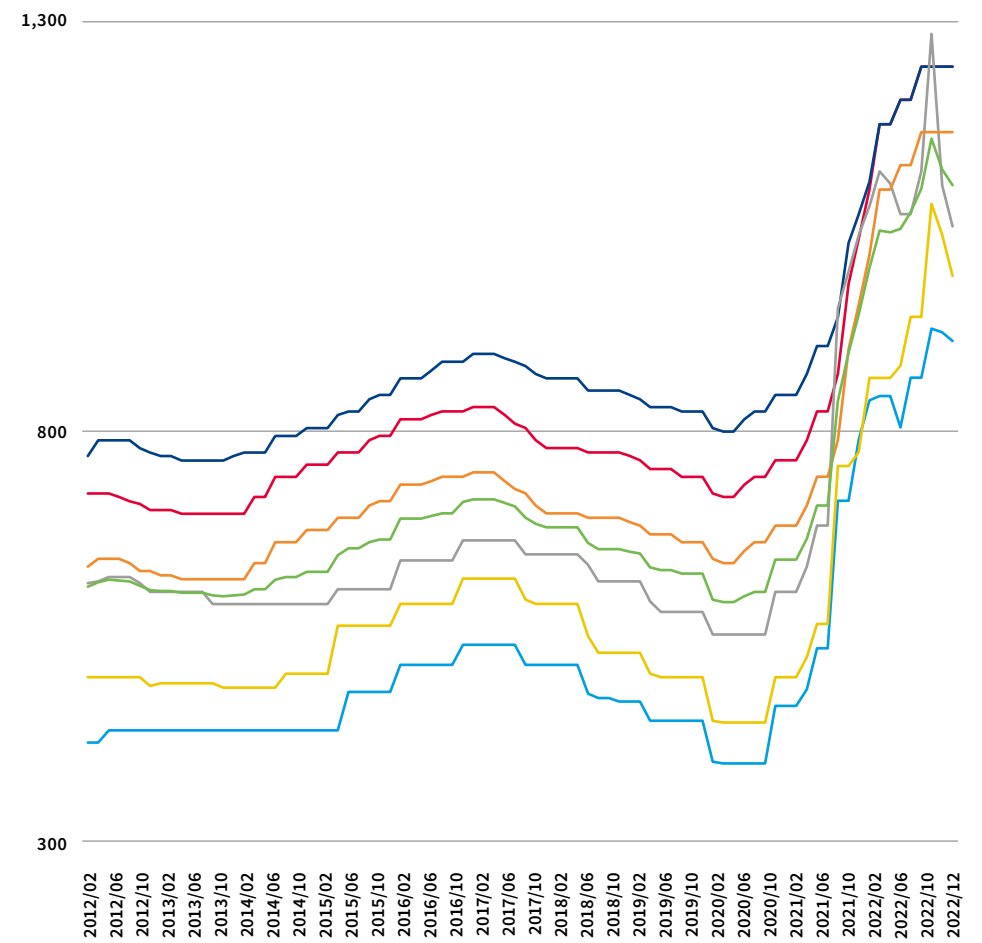
## 4.2 Paper market

Source: Fastmarket, 2023

Average graphic paper prices, Germany, €/tonne, 2012-2022



Average graphic paper prices, Germany, €/tonne, 2016-2022



- Woodfree coated sheets 100g
- Newsprint 45g
- SC offset uncoated mechanical reels 56g
- Average graphic paper prices
- Uncoated sheets 80g
- LWC offset coated mechanical reels 60g
- Woodfree coated reels 100g

## 4.2 Paper market

Source: Fastmarket, 2023

Pulp prices, Europe, €/tonne, 2016-2022



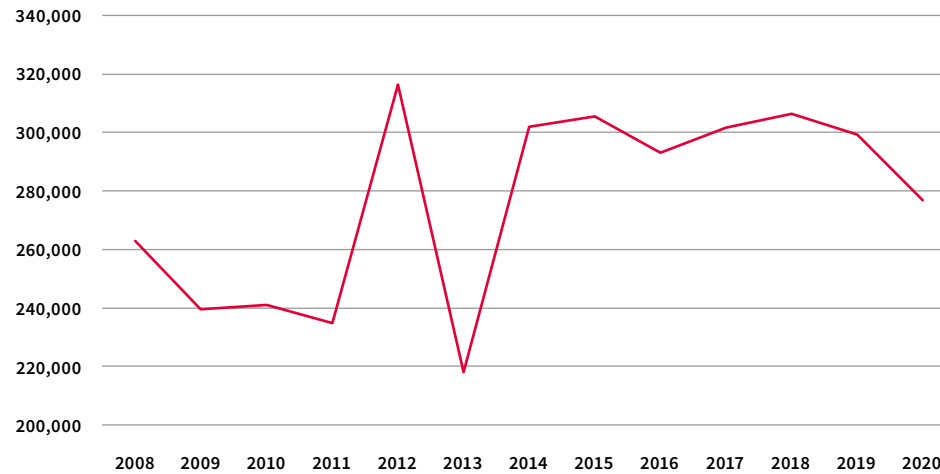
Sorted mixed paper and board prices, Germany, €/tonne, 2016-2022



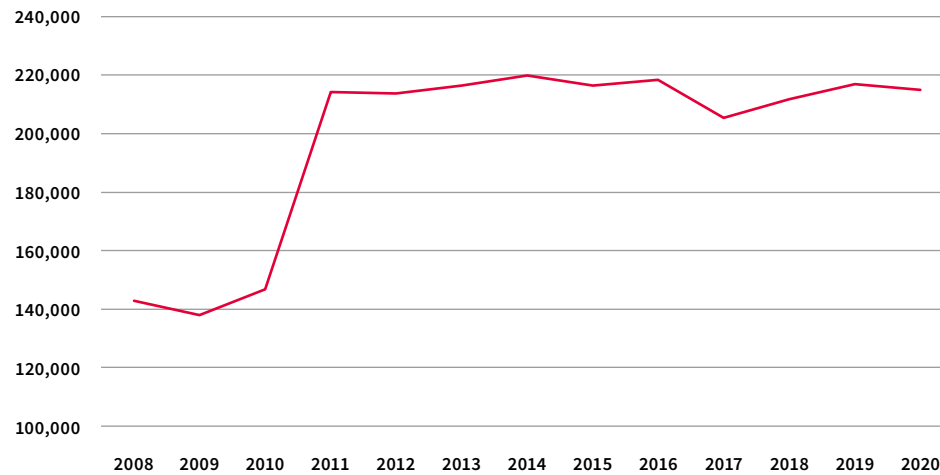
## 4.3 Publishing market

Source: Eurostat

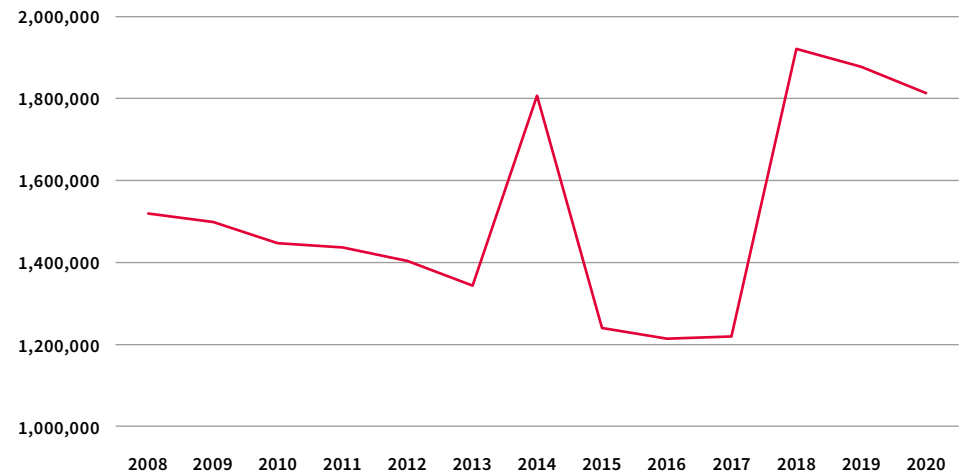
Turnover in the publishing sector, Europe (EU27+UK+CH+NO+IS), in million €, 2008-2020



Number of companies in the publishing sector, Europe (EU27+UK+CH+NO+IS), 2008-2020



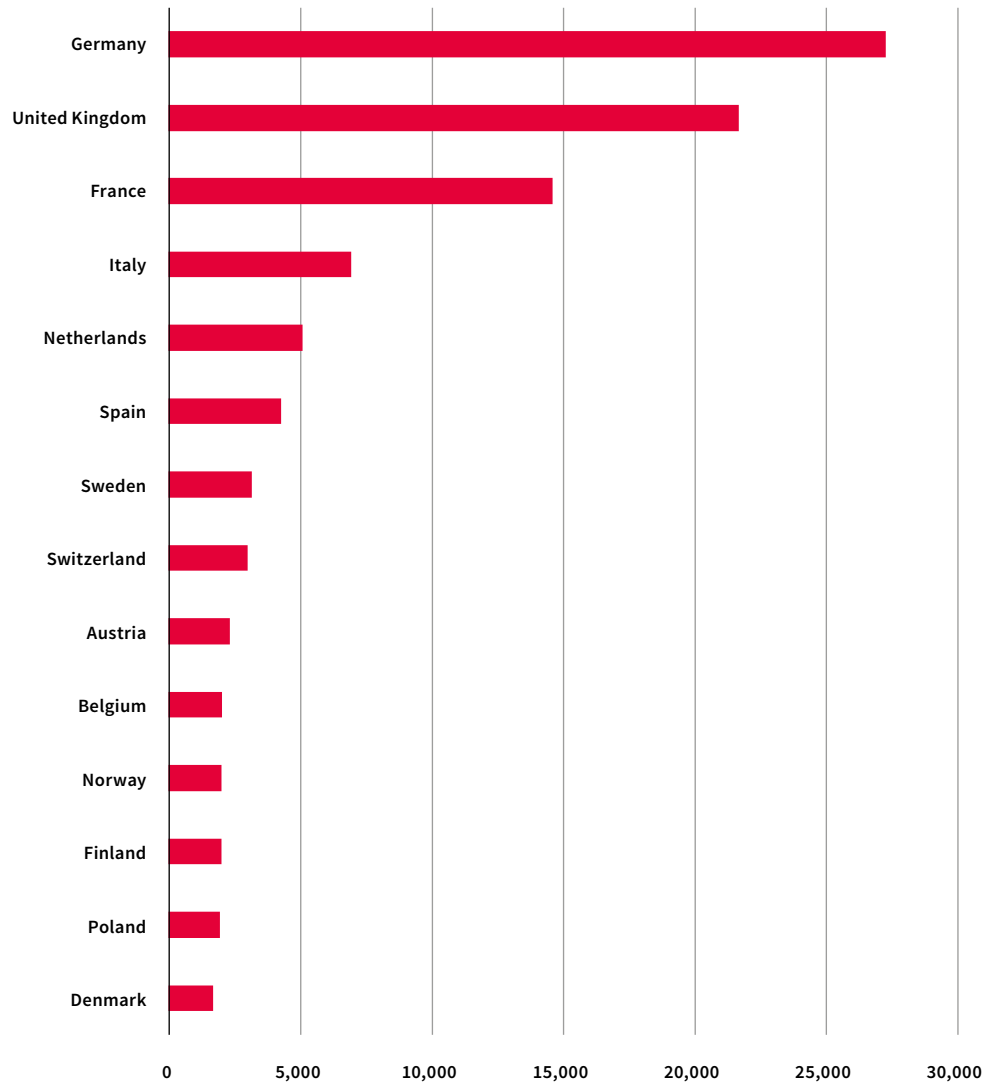
Number of employees in the publishing sector, Europe (EU27+UK+CH+NO+IS), 2008-2020



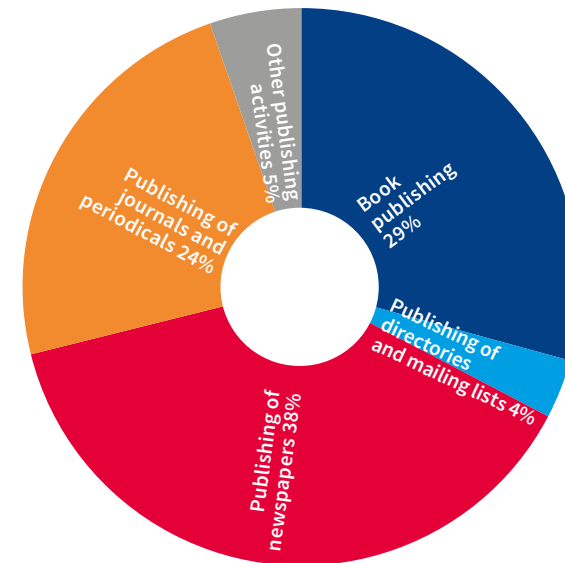
## 4.3 Publishing market

Source: Eurostat

Turnover of the publishing industry per country, in million €, 2020



Distribution of turnover per publishing sector, EU27, 2020

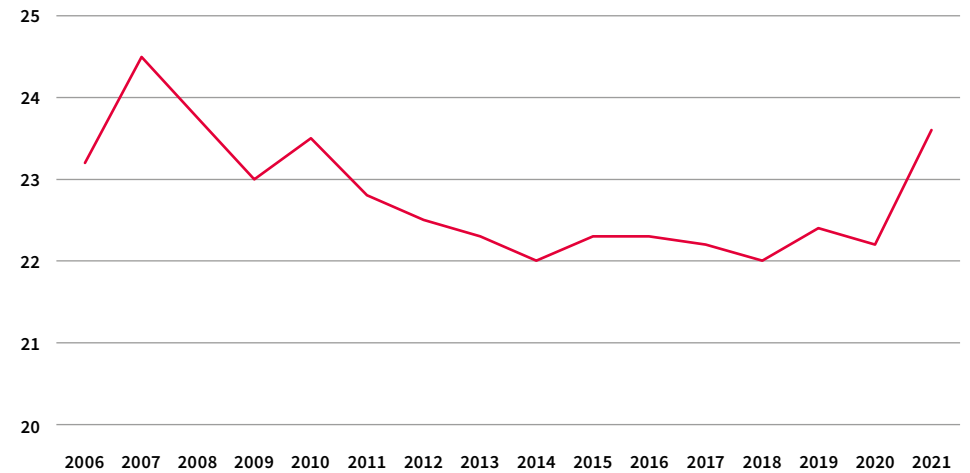


## 4.4 Book market

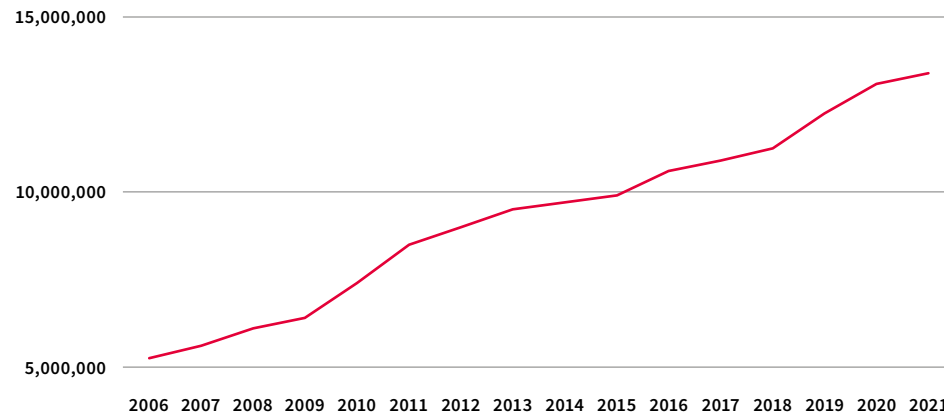
Source: FEP (Federation of European publishers)\*

€23.6 billion of revenue from sales of books  
575,000 new books published in 2021  
13,400,000 titles in print in 2021

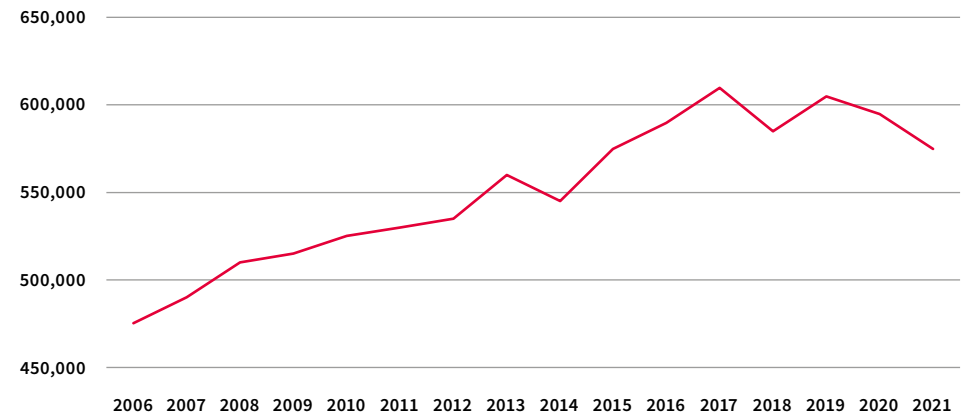
Publishers' revenue from sales of books (€ billion), 2006-2021



Number of titles in print (active catalogue) in Europe, 2006-2021



New book titles published in Europe, 2006-2021

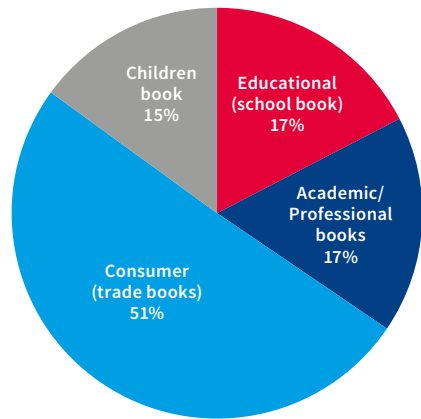


\*Data are estimates and figures are rounded. Figures refer to net publishers' turnover, i.e. the publishers' total revenues from the sales of books, not the total market for books (margin of booksellers or other retailers).

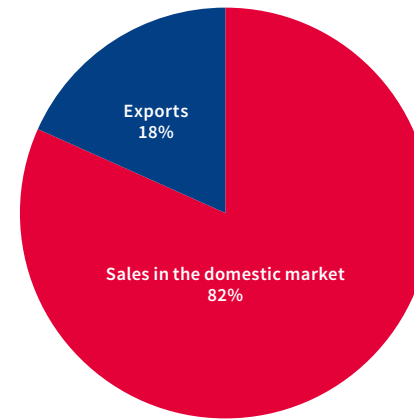
## 4.4 Book market

Source: FEP (Federation of European publishers)\*

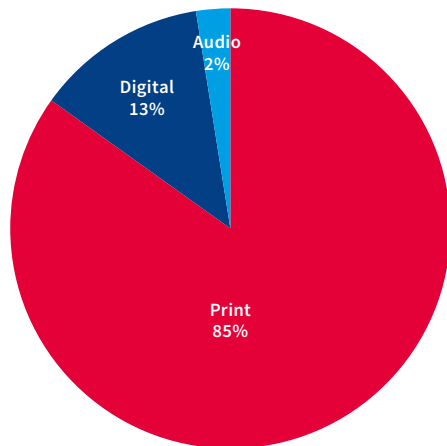
European publishers' revenue from sales of books (2021) – By type of book



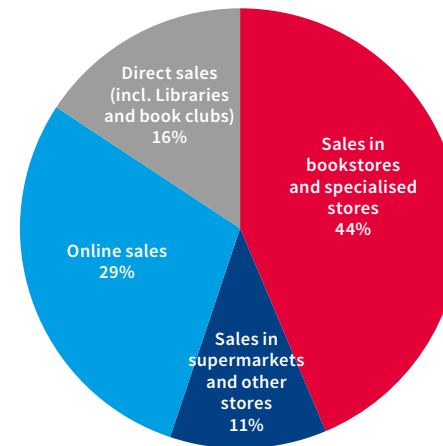
European publishers' revenue from sales of books (2021) – By area



European publishers' revenue from sales of books (2021) – By format



European publishers' revenue from sales of books (2021) – By distribution channels

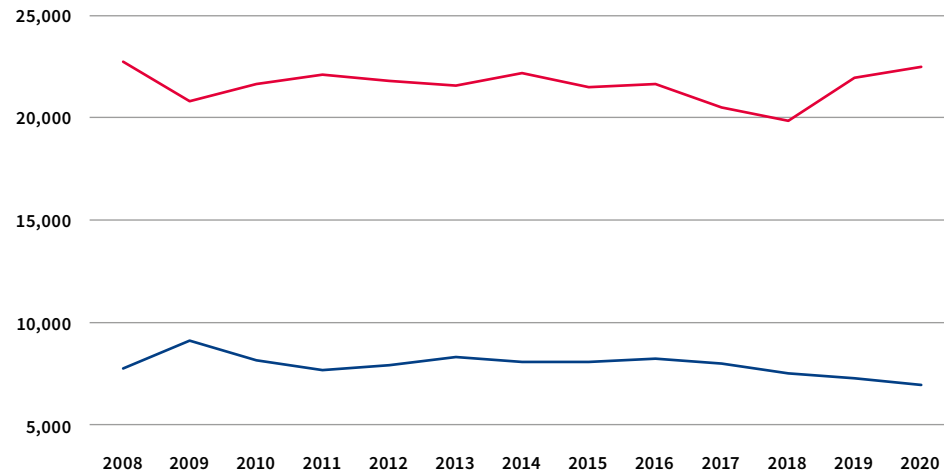


\*Data are estimates and figures are rounded. Figures refer to net publishers' turnover, i.e. the publishers' total revenues from the sales of books, not the total market for books (margin of booksellers or other retailers).

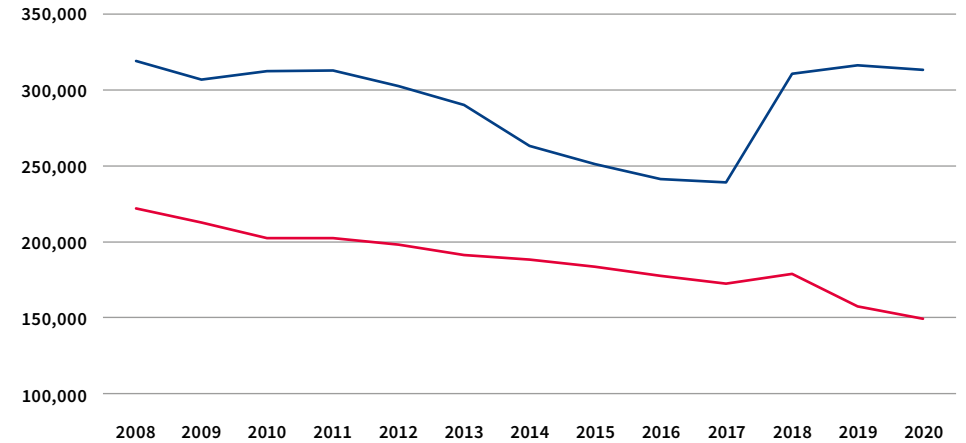
## 4.5 Press market

Source: Eurostat

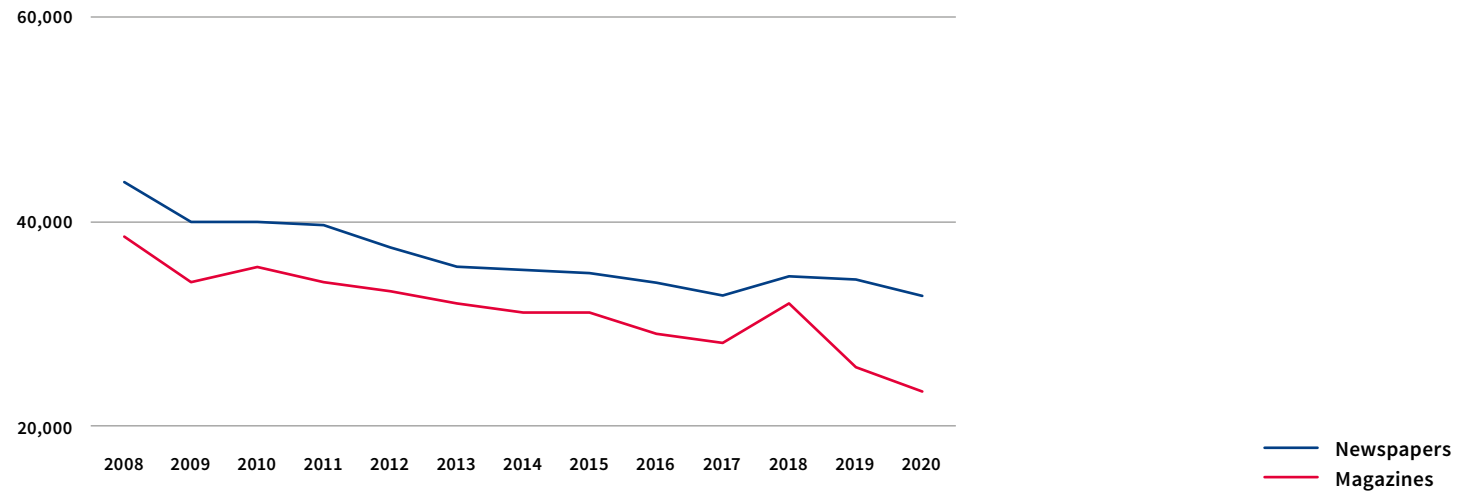
Number of press publishing companies, EU27+UK+NO+IS, 2008-2020



Number of employees in press publishing companies, EU27+UK+NO+IS, 2008-2020  
(break in time series – Germany, 2017)



Turnover of press publishing companies, EU27+UK+NO+IS, in million €, 2008-2020



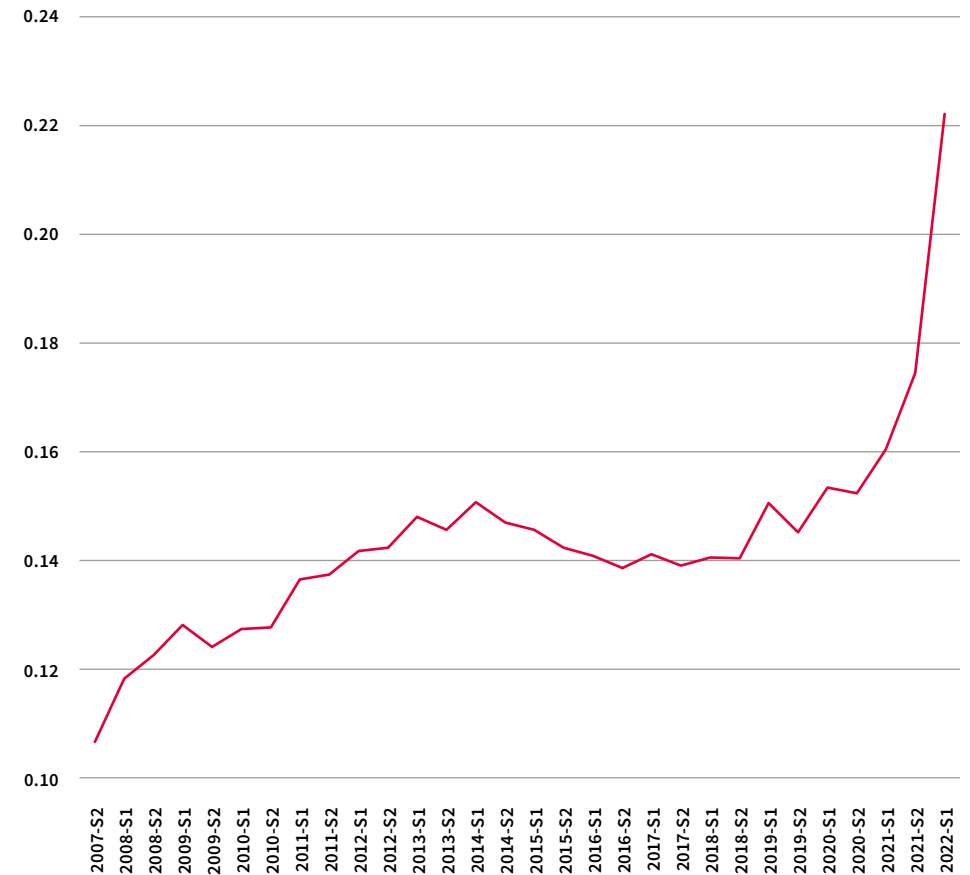
## 4.6 Energy market

Source: Eurostat\*

The average electricity price for industrial consumers reached 0.875 €/KWh in 2022.

Since 2008, electricity prices increased by 87.5% in Europe.

EU electricity prices for industrial consumers, 2008-2022, in €/KWh



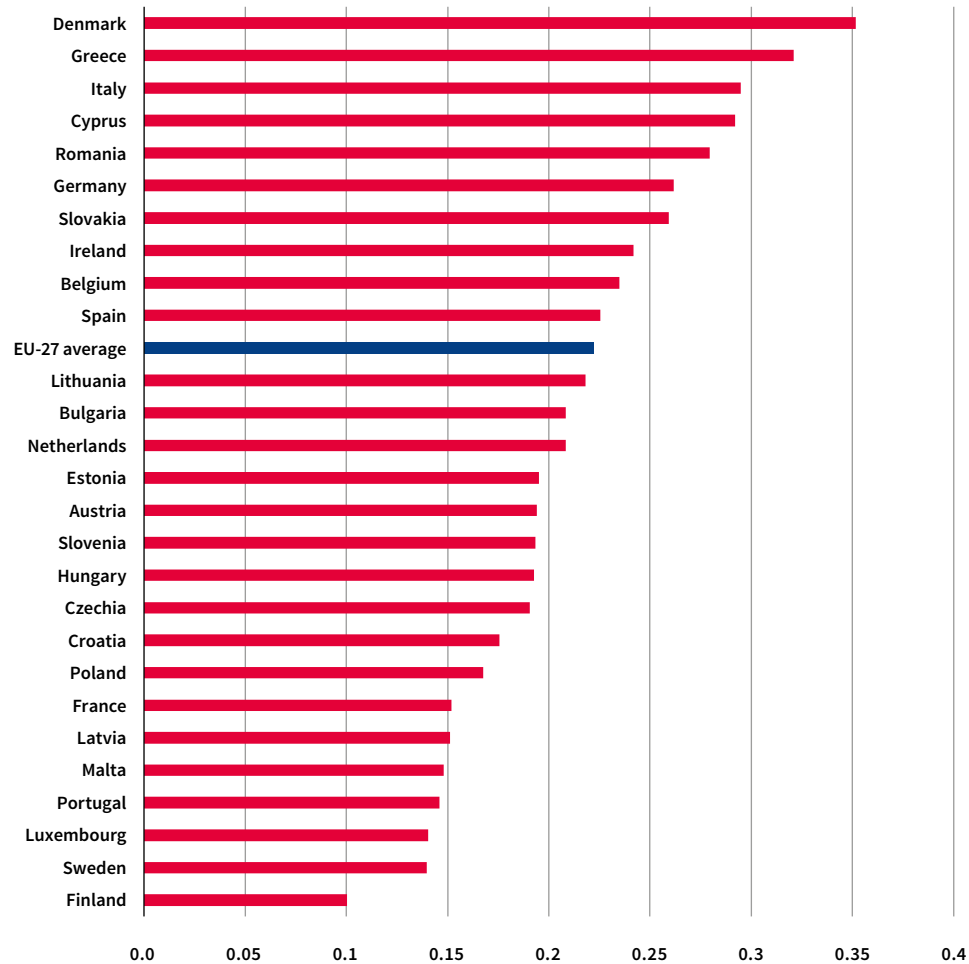
\*The prices mentioned refer to Electricity prices for industrial consumers (all taxes and levies included) in €/KWh, which correspond to medium standard industrial consumption band with an annual consumption of electricity between 500 and 2000 MWh.



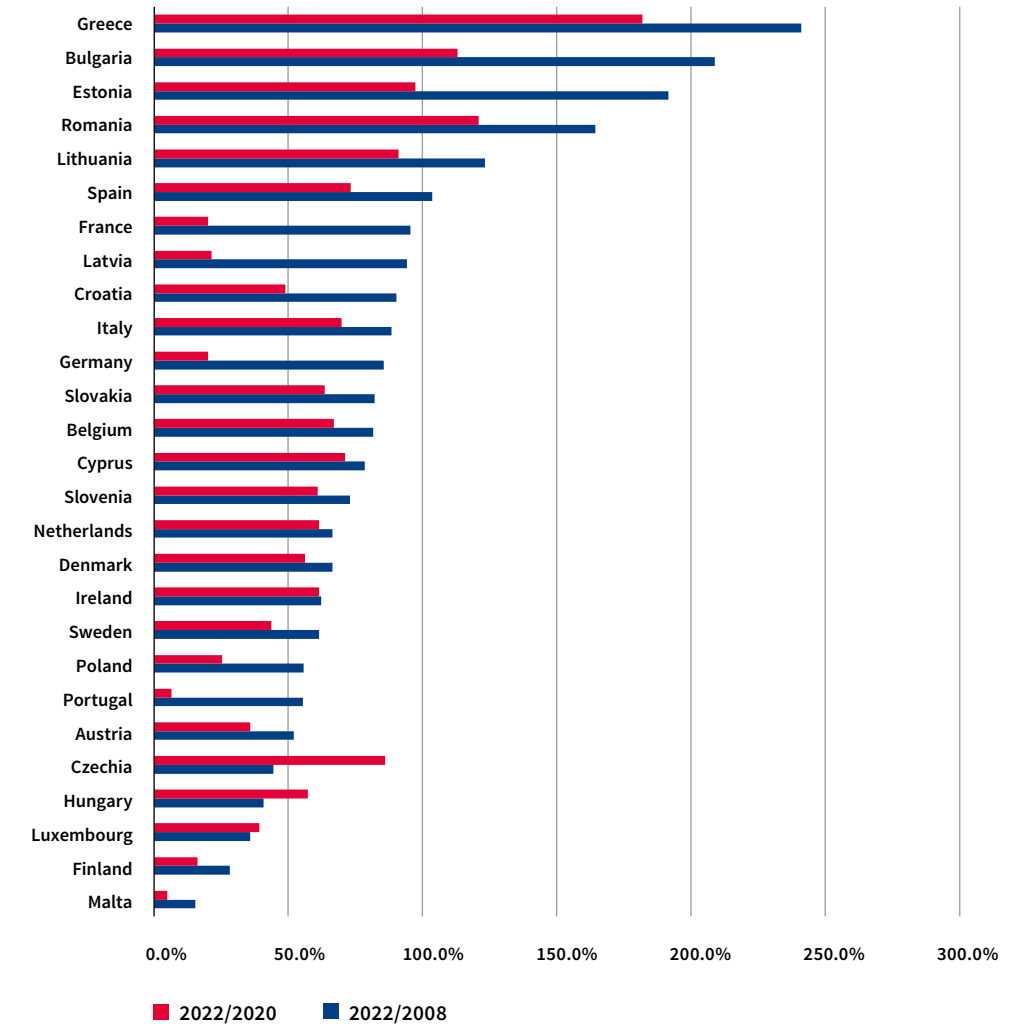
## 4.6 Energy market

Source: Eurostat\*

EU electricity prices for industrial consumers, 2022 (first semester), in €/KWh



%-change in EU electricity prices for industrial consumers, 2022/2020 and 2022/2008, in €/KWh



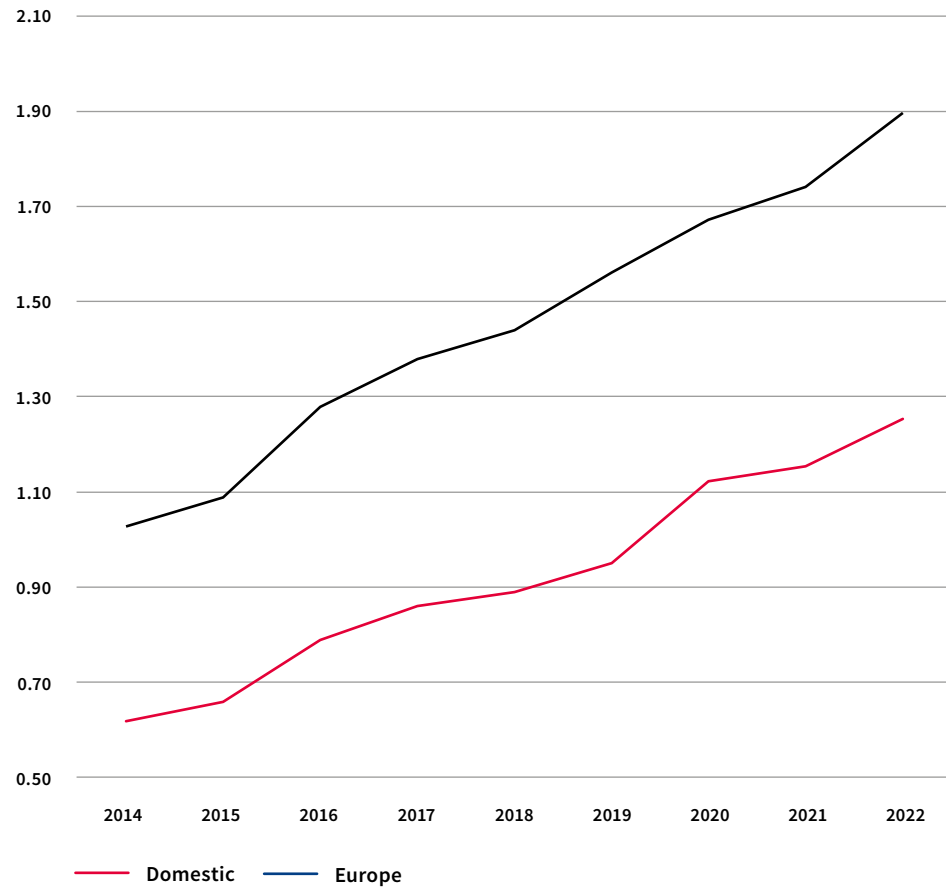
\*The prices mentioned refer to Electricity prices for industrial consumers (all taxes and levies included) in €/KWh, which correspond to medium standard industrial consumption band with an annual consumption of electricity between 500 and 2000 MWh.

# 4.7 Postal market

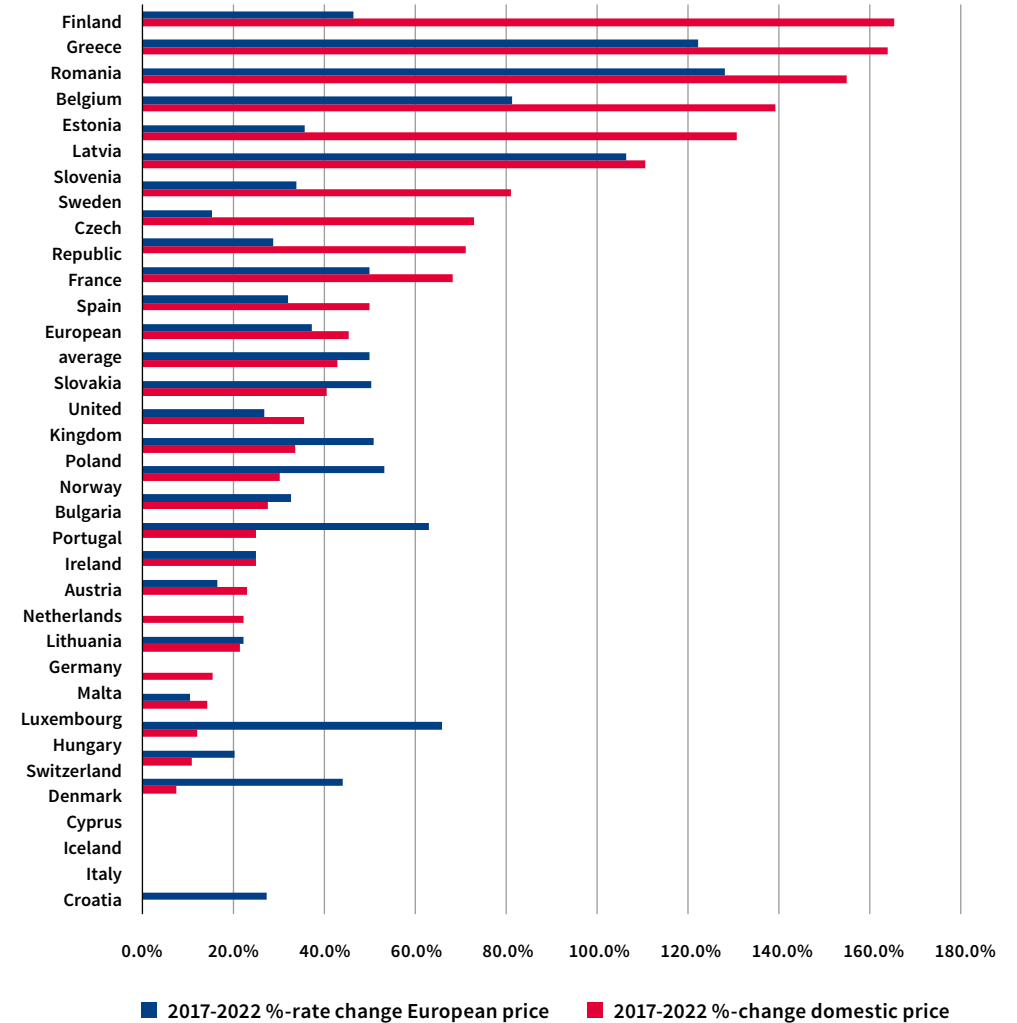
Source: Letter prices in Europe, Up-to-date international letter price survey, Deutsche Post, 2022

+45% in 5 years (domestic rate)

Evolution average postal prices in Europe, in €, 2014-2022



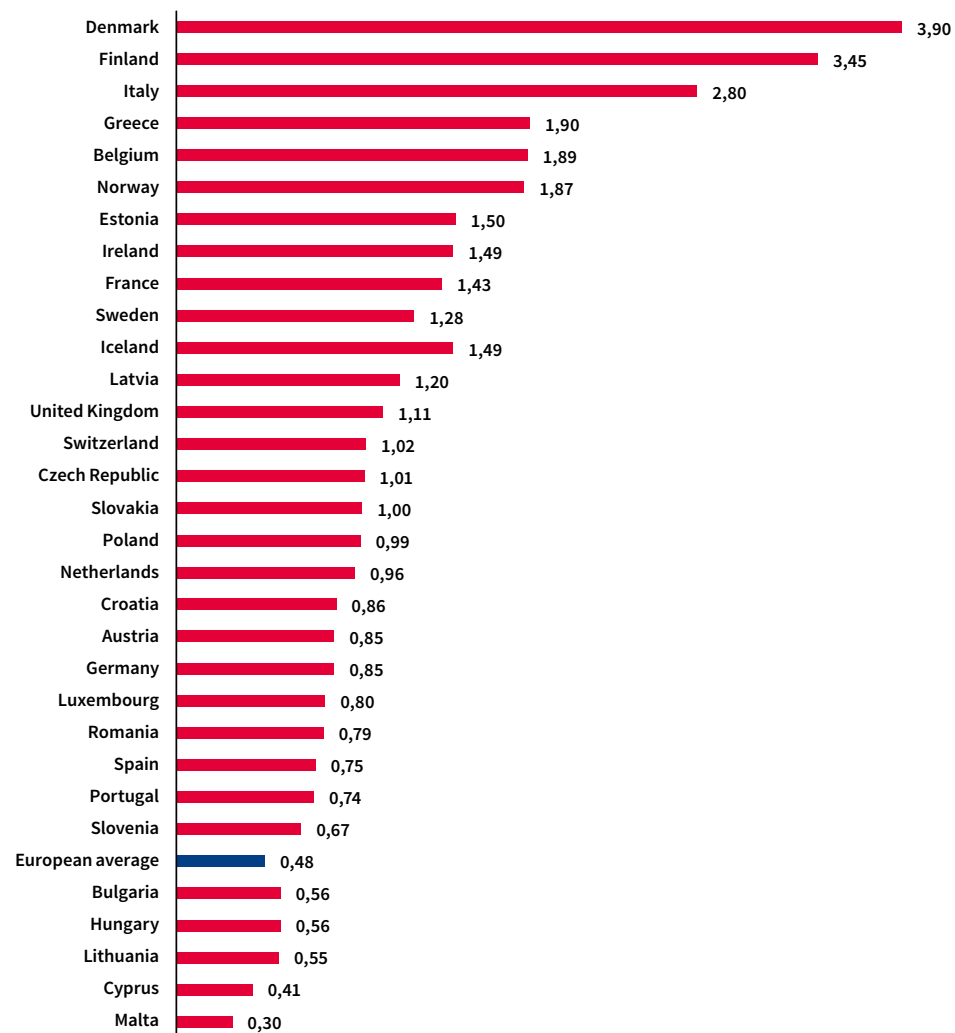
2017-2022 %-change



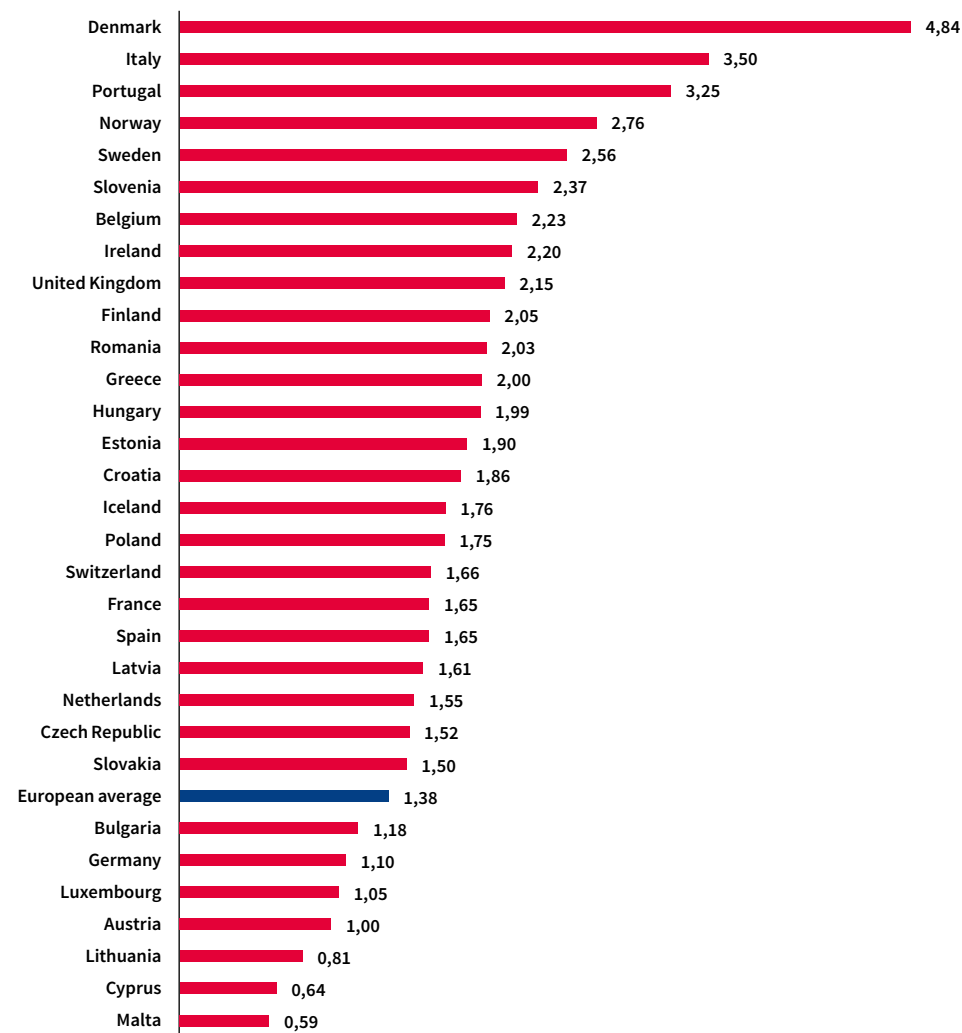
## 4.7 Postal market

Source: Letter prices in Europe, Up-to-date international letter price survey, Deutsche Post, 2022

Nominal price for a domestic standard letter, in €, 2022



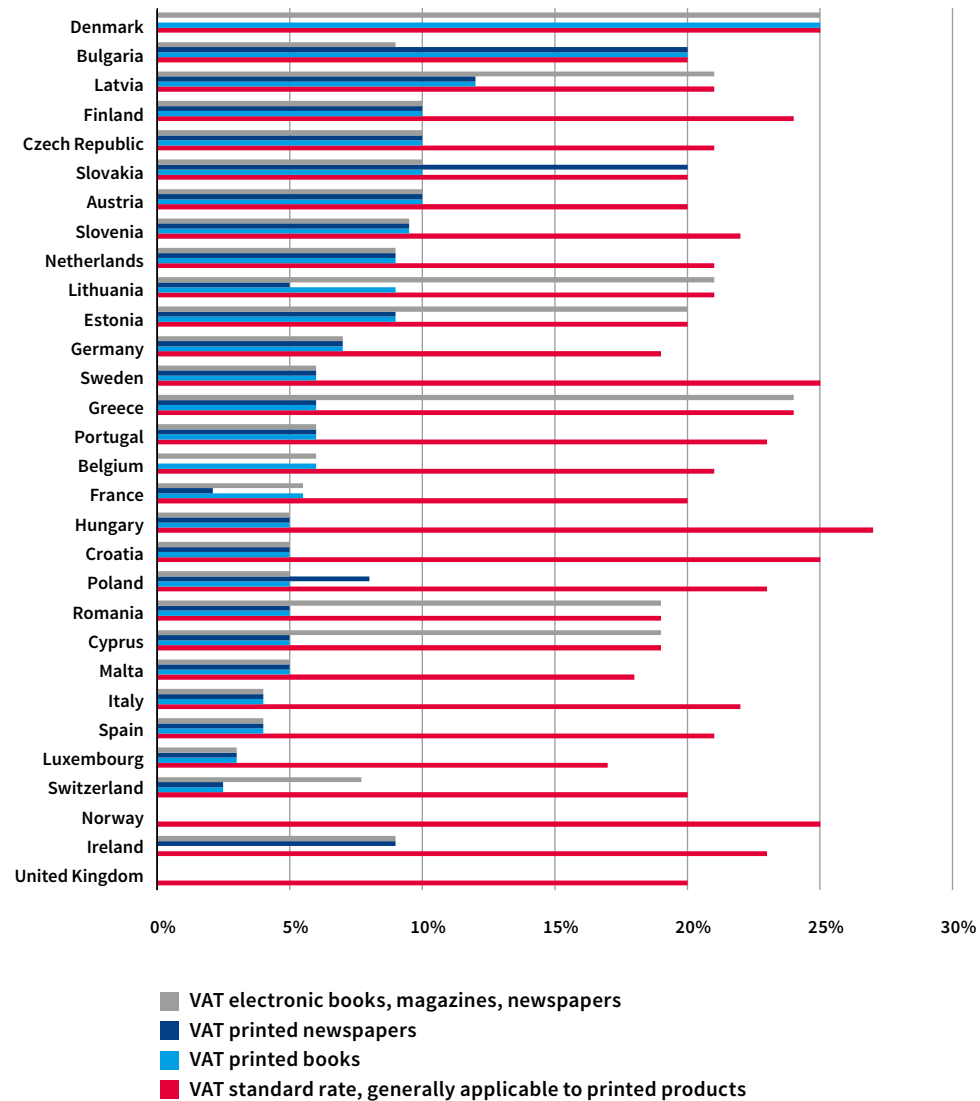
Nominal price for a letter mail in Europe, in €, 2022



## 4.8 VAT rates

Source: European Commission, 2023

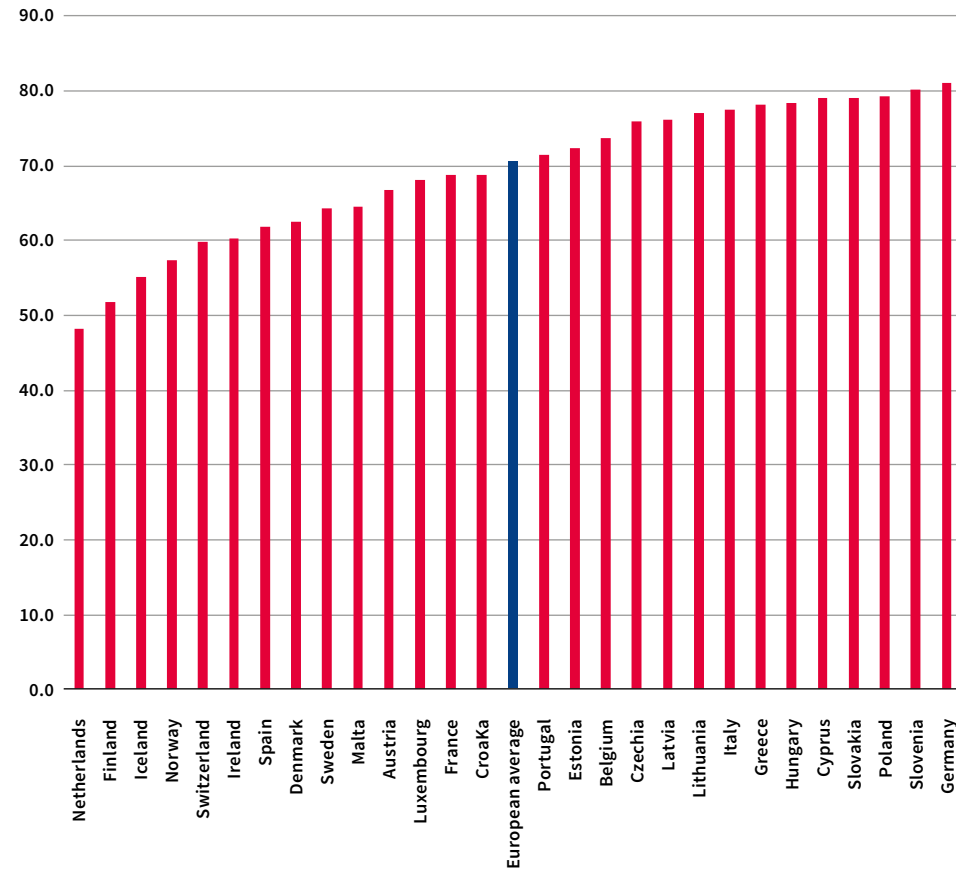
VAT rates applicable to printed books, printed magazines, printed newspapers and electronic publication, 2023



## 4.9 Socio-economic data

Source: Eurostat

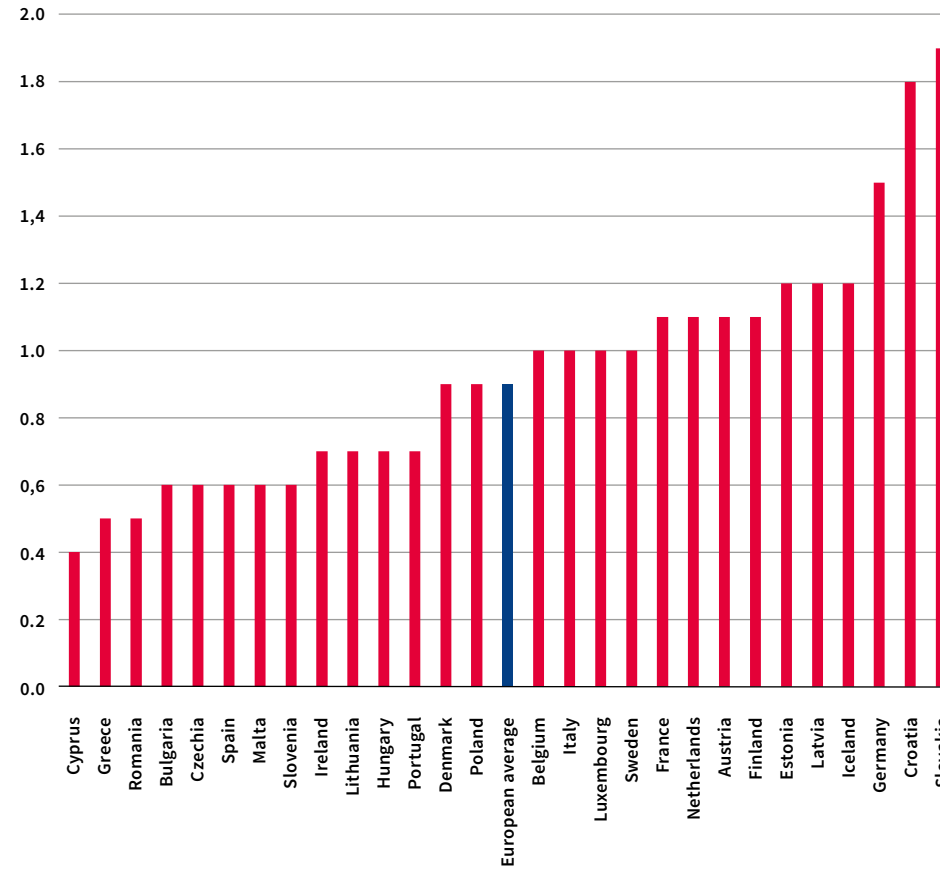
Individuals who have basic, low or low digital skills or have not used the internet for the last 3 years, in %, 2021



## 4.9 Socio-economic data

Source: Eurostat

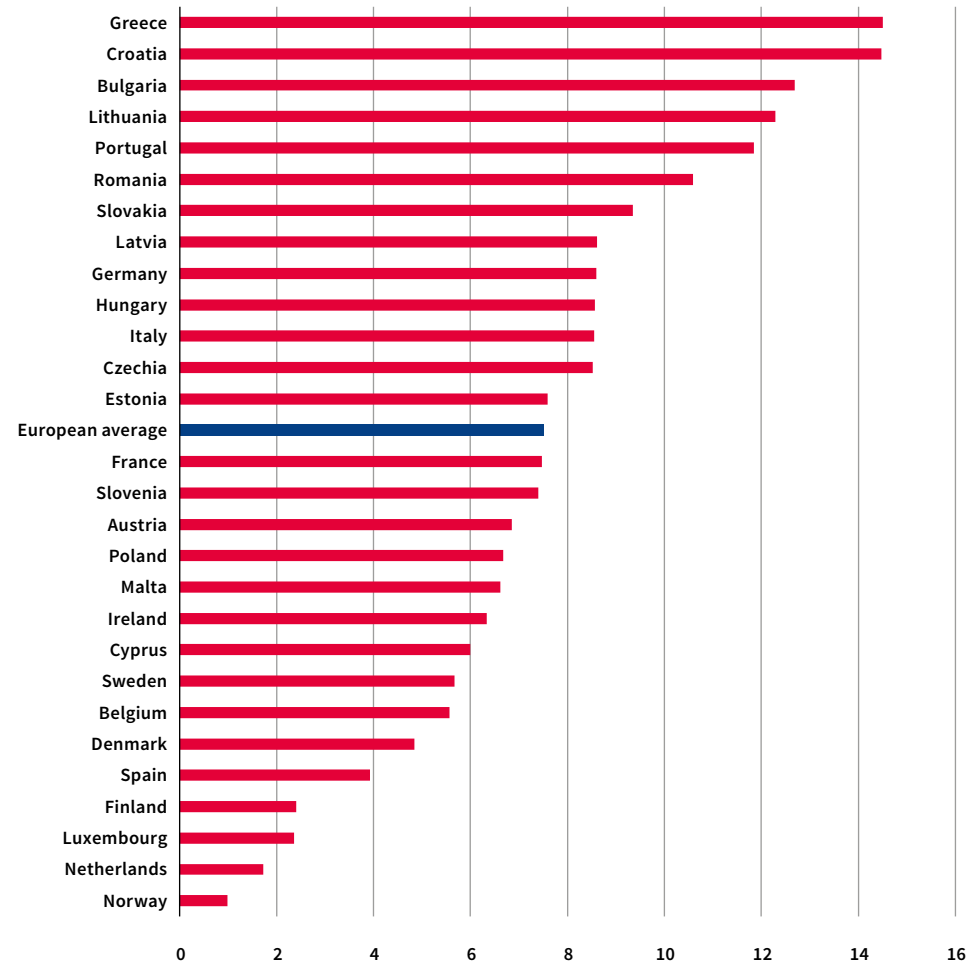
Share of newspapers, books and stationary in total household expenditure, in % of total expenditure, 2021



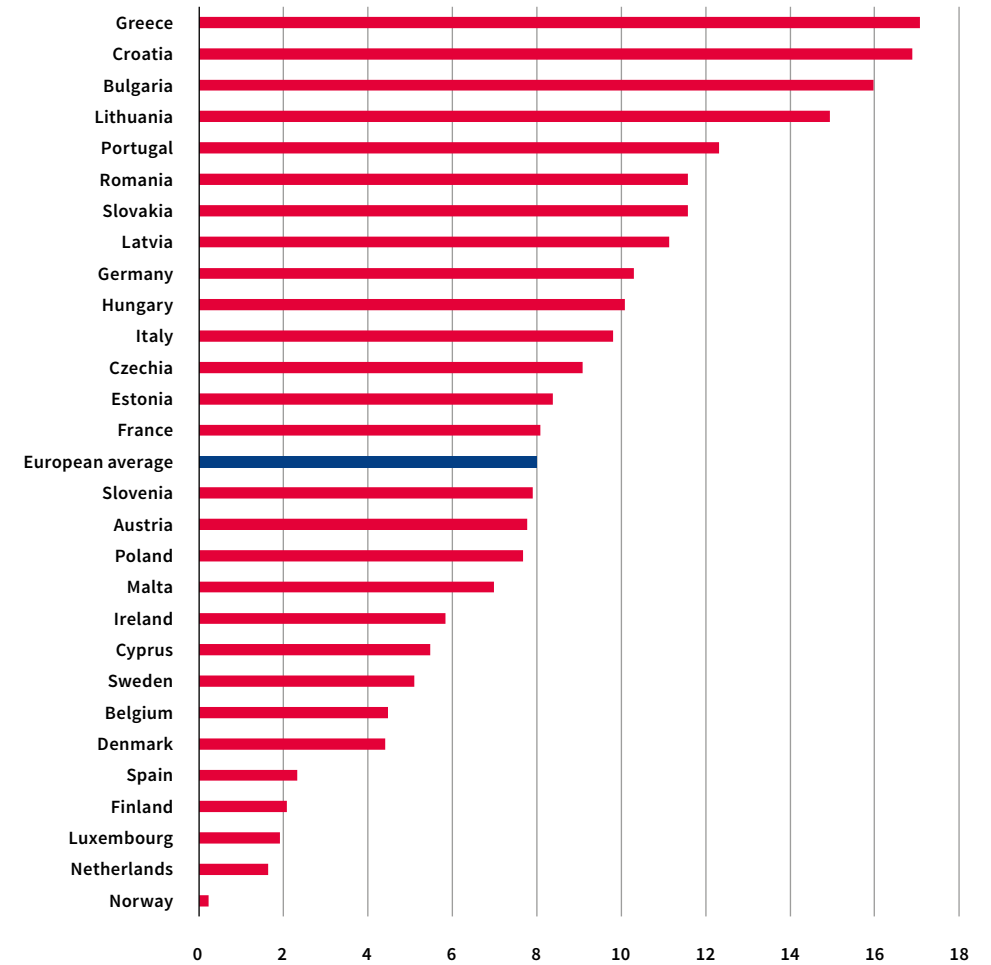
## 4.9 Socio-economic data

Source: Eurostat

Households who have not an internet access, in %, 2022



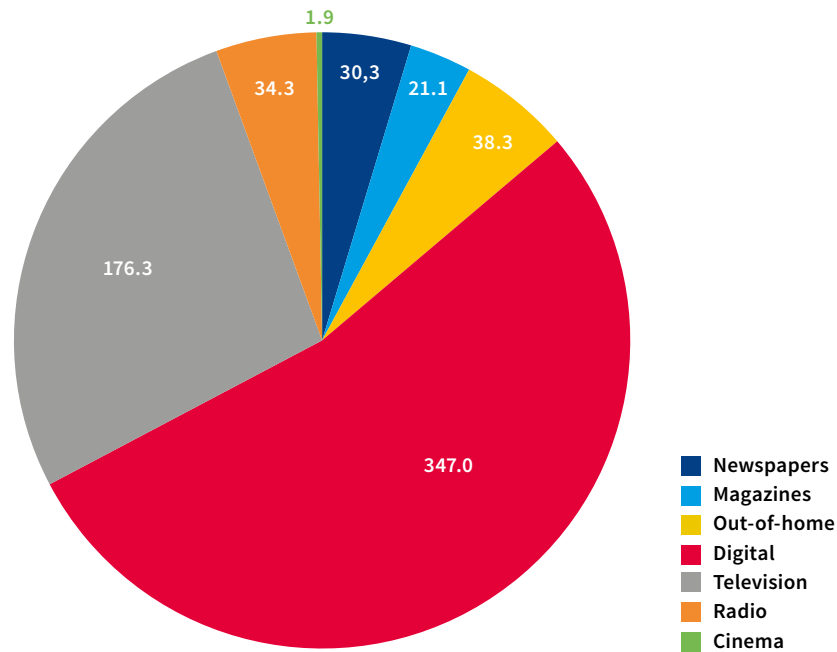
Individuals who used internet more than a year ago or never, in %, 2022



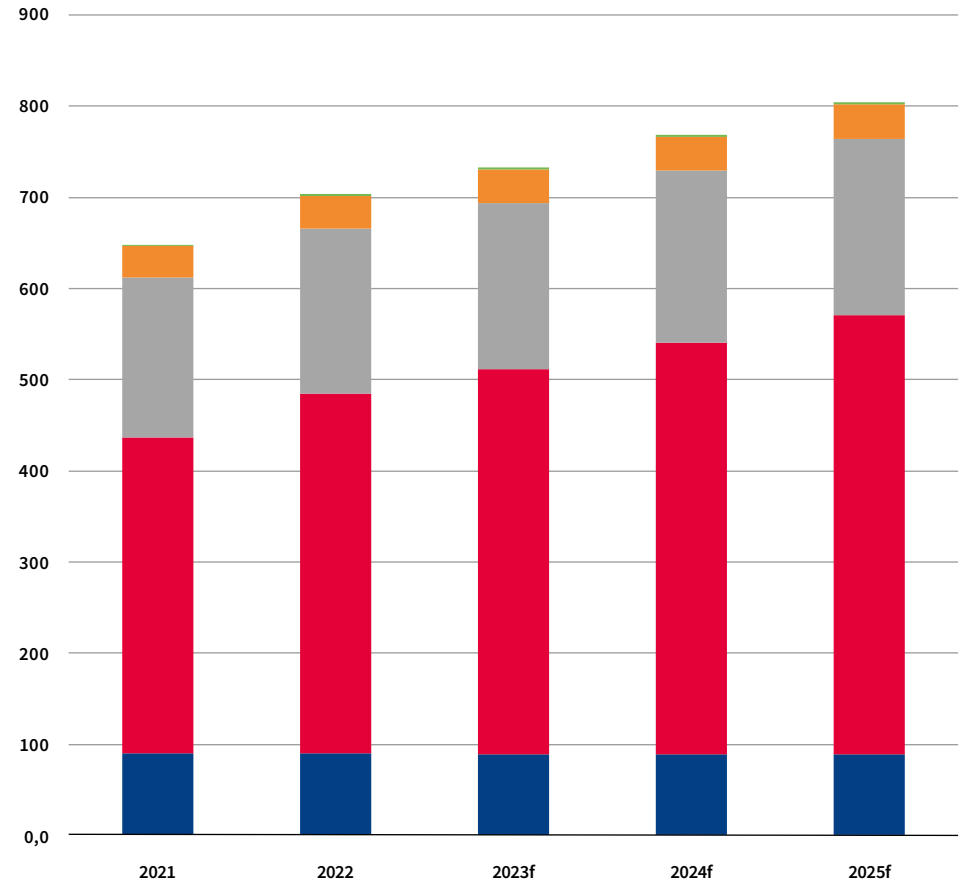
# 4.10 Advertising

Source: Dentsu 2023 Global Ad Spend Forecasts, December 2022

Global ad spend per media, in billion US \$, 2022



Global ad spend per media, 2021-2025f, in billion US \$ (print includes: newspapers, magazines, out-of-home)





## 5.1 Bulgaria

### 2022 turnover

The turnover of the Bulgarian printing industry increased by 12.7% (2021 – BGN 710 Million ; 2022 - BGN 800 Million), which is partly due to the increased material prices.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

All print markets were impacted by the increased raw material prices: paper, cardboard, plastic, inks, prepress and press room chemicals and equipment. Generally speaking, the price increases were about 20%.

### Trends in specific market segments

- Books: slight increase, mainly due to the export
- Magazines: -8%
- Newspapers: constant decrease in print runs and publications
- Direct mail: -10%
- Other commercial printing (catalogues, advertising...): - 10%
- Printed packaging: substantial increase in all kinds of packaging and label printing (+15%)

### Trends in printing process

- Digital printing: +10%
- Weboffset: same as 2021
- Sheetfed offset: - 4%
- Publication gravure: -5%
- Packaging gravure: +15%
- Flexography: slight increase
- Large format: same as 2021

### Trends in the employment market

The employment rate is positive with 2.55 % (200 new employees in 2022: 2021 – 7840 ;2022 – 8004).

### Trends in foreign trade

The foreign trade registered an increase by 18%, compared to 2021. The rise is due mainly to trade of packaging, labels, security printing. The main exporting markets are EU countries and local Balkan countries.

The main competitors to Bulgarian printing industry are Turkey and China for books and some packaging products. The imported volumes were declining.

### Trends in labour costs

The average monthly salary in the printing business is BGN 1 400 (up by about 11%, but this is the trend for all industries).

### Developments affecting competitiveness

The government maintained its policy of preferential VAT tax (reduced from 20% to 5%) covering books, newspapers, magazines and some printed products for educational purposes. In the same time, the government stopped the compensations connected to COVID – 19 for reduced personal, energy costs, transport and logistics.

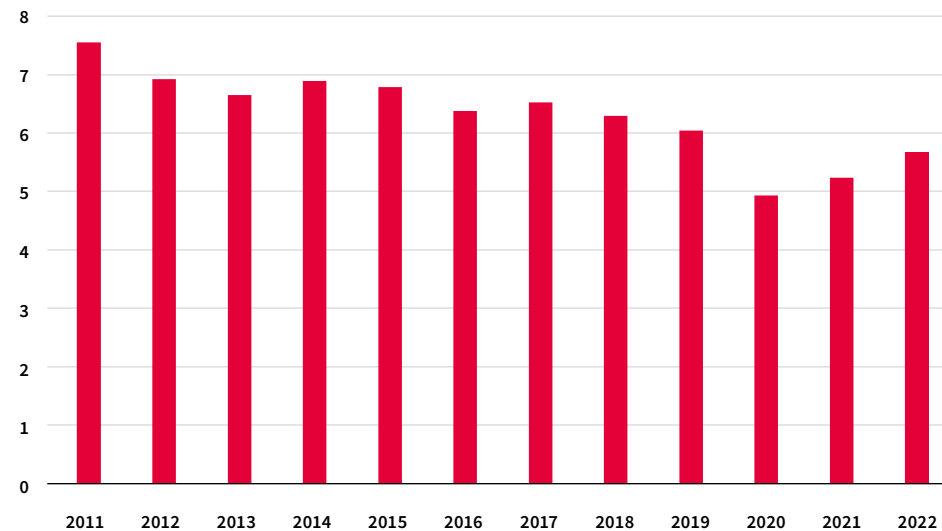
## 5.2 Denmark

### 2022 turnover

The turnover of the graphic industry in Denmark increased by approximately 8% in 2022. However, the increase in turnover was due to significant price increases in both raw materials and energy costs.

Turnover from the Danish graphic industry (Billion DKK)

Source: Statistics Denmark

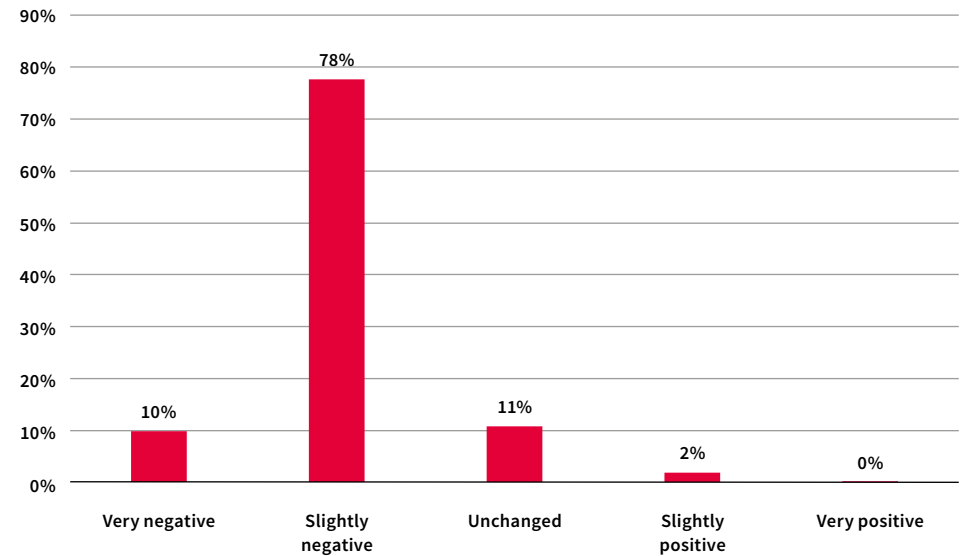


Despite the increase in turnover of graphic products, many Danish printing companies have not been able to pass on the full cost increases of raw materials, energy, and transport costs to their customers. This has made it more difficult for printing companies to make profit.

In a member survey conducted in January 2023, 88% of GRAKOM's member companies reported that the past year's developments, including the war in Ukraine, inflation, and high energy prices, had negatively affected their outlook on their company's ability to make profit. Of these, 10% said it had affected their outlook very negatively. Only 11% of GRAKOM's members reported that the past year's events had not affected their outlook on their company's ability to make money.

**Question to GRAKOM's members:** "How has the past year's developments (war in Ukraine, inflation, high energy prices, etc.) affected your outlook on your company's ability to make money in the coming year?"

Source: GRAKOM



Note: Based on 88 companies with physical production. Responses are weighted by companies' balance sheets.

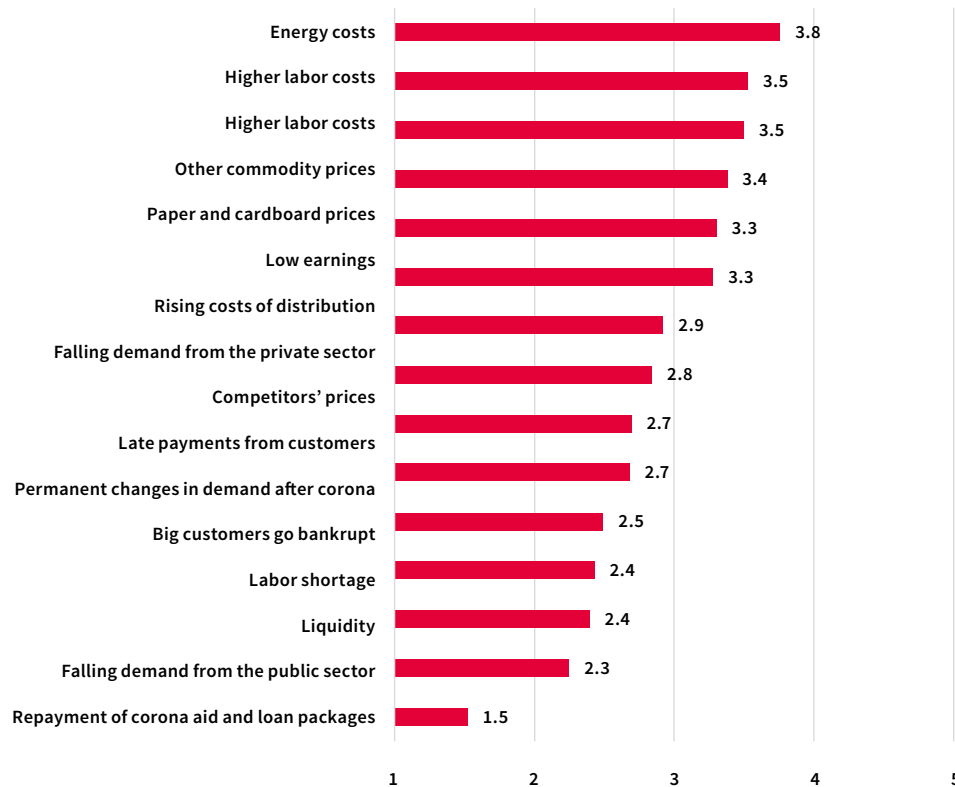
At the top of the list of production companies' concerns are the ripple effects of the war in Ukraine, as well as the consequences of the COVID-19 pandemic. Thus, the list of concerns is topped by energy costs, while paper prices and other raw material prices also rank high. The second-highest concern on the list is another derivative effect of inflation - namely, a concern for higher wage costs.

The list of concerns also confirms that production companies are highly affected by high inflation. Low profitability is in fifth place on the list. A consequence of the fact that it is only rarely possible for production companies to pass on the entire cost for the increased input costs to customers.

## 5.2 Denmark

**Question to GRAKOM's members:** "To what extent are you concerned about the following factors for your company in the coming year? (1=Not at all, 2=To a low extent, 3=To some extent, 4=To a high extent, 5=To a very high extent)"

Source: GRAKOM



Note: Based on 88 companies with physical production

At the beginning of 2023, the vast majority of GRAKOM's members expected a decline in turnover in 2023. The average expectation among GRAKOM's members with physical production was that turnover would fall by 3% in 2023 compared to 2022.

### Trends in specific market segments

- Books: Sales of books in Denmark have been increasing since 2017. However, from 2021 to 2022, book sales increased less than inflation.
- Magazines: Sales of magazines have generally shown a declining trend over the past ten years, with slightly fewer different magazines being published each year, and at the same time, the size of the print run is also decreasing.
- Newspapers: Over the past years, print runs of newspapers have steadily declined, and newspapers are increasingly focusing on online content. At the same time, there are fewer local newspapers, and their print runs are also declining.
- Other commercial printing (catalogs, advertisements...): The amount of door drops is decreasing slightly each year. Similarly, the amount of other types of commercial printed matter is also decreasing. Printing companies expect this trend to continue in the coming year.
- Printed Packaging: Sales of printed packaging and labels are expected to remain largely unchanged in the coming year.
- Large Format: Demand for large format is expected to remain largely unchanged in the coming year.

### Trends in specific market segments in the number of operating companies

In recent years, there have been consolidations in the graphic industry, with larger printers acquiring smaller printers. There have also been some mergers where printers have joined forces. Some printers go bankrupt, but it is typically the smaller ones. Overall, this means that there are slightly fewer printers each year.

### Trends in the labour market

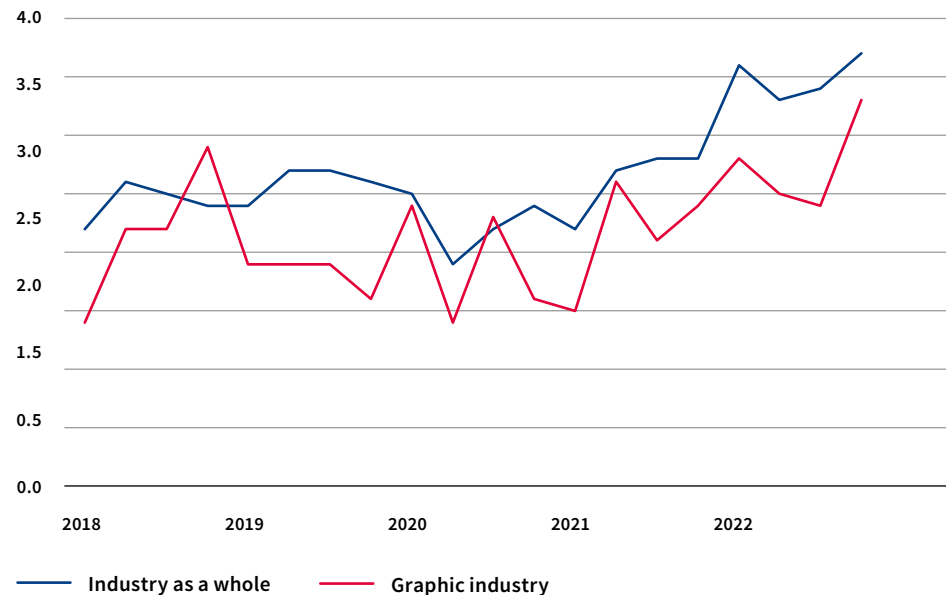
The Danish economy has experienced a labour shortage in recent years. General labour costs in the overall industry have increased by 3.7%. Labour costs in the graphic industry have not increased quite as much but follow the general trend. In the fourth quarter of 2022, labour costs in the graphic industry had increased by 3.3% compared to the fourth quarter of 2021.

Employment among graphic workers has declined slightly in the past year (-1%). In recent years, the number of skilled workers has declined faster than the number of unskilled workers, and this trend has continued through 2022.

## 5.2 Denmark

Yearly change in labour costs in Denmark in the whole industry and the graphic industry (in %)

Source: Confederation of Danish Employers



In the spring of 2023, a new 2-year collective bargaining agreement has been reached for the industry and the graphic industry. In the new agreement, employers must pay higher contributions to the employee's pension, and at the same time, the payment to the employee's so-called "free-choice account", where employees can decide whether to use the money for wages or pensions, is increased.

In the latest forecasts for the Danish economy, wages are expected to increase by around 4 to 5% in the coming year. Wages in the graphic industry have typically followed the development in the industry but with slightly more subdued growth rates.

### Trends in foreign trade

In 2022, Denmark imported printed products for DKK 2.73 billion and exported printed products for DKK 2.59 billion, resulting in a small trade deficit of DKK 133 million. In 2021, Denmark's trade deficit was DKK 424 million.

The import of printed products increased by 9% from 2021 to 2022. The import was heavily driven by a larger import of books, which increased by 56%, while the import of other commercial printing (catalogues, advertising. . .) decreased by 34%. Poland is by far the country from which Denmark imports the most, with Germany and Sweden in second and third place, respectively. The export of Danish printed products increased by 24%. Books, other commercial printing, and other printed products particularly contributed to the export. Danish printers export mainly to Sweden, with Germany and Norway in second and third place, respectively.

## 5.3 Estonia

### 2022 turnover

The printing industry in Estonia increased its turnover by nearly 20% in a year (2022). This is primarily due to a large increase in material, energy and transport costs. Also, the unprecedented crisis in the availability of raw materials forced companies to create inventory, which the sector has not usually done on such a scale.

Although the general situation of the Estonian printing industry is good, the situation is moderately worrying and uncertainty has increased.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

The crisis of energy prices and war in Ukraine have led the Estonian economy into recession in the second half of 2022. Estonian economy shrank by 1.3% last year and has suffered from a decline in purchasing power.

The decline in purchasing power has been a notable obstacle for companies that focus on the domestic market, mostly very small companies focusing on commercial print.

All Estonian printing companies had to cope with rapidly rising energy costs and with supply problems and sharp price rises for raw materials. The reduction in purchasing power and increased uncertainty are hemming demand in and clouding the outlook for growth at businesses.

### Trends in the employment market

In the printing industry, the number of employees decreased by 2%. A total of 2,600 people work in the printing sector.

Labour is one of the most critical issues for the Estonian printing industry. There are not enough young people who choose the printing industry as their field of study and profession.

Since there is a shortage of labour, investments are made in machines, digitalisation and automation to increase the efficiency of production.

The unemployment rate in Estonia remained essentially unchanged in 2022, it was 5.7% in the first half and 5.5% in the second half.

### Trends in foreign trade

Foreign trade is very important for the Estonian printing industry as more than 50% of the turnover of the Estonian printing industry comes from exports. Estonia's main export markets are in Europe.

The cooling of the global economy affects the export opportunities of Estonian companies as well, cost pressure and competitiveness are a serious challenge for companies in the printing industry.

### Trends in labour costs

Labour costs and average wages in printing sector increased by 5-6% in 2022.

High inflation and the rise in the cost of living will push wage growth higher and this will put pressure on the competitiveness of companies.

### Developments affecting competitiveness

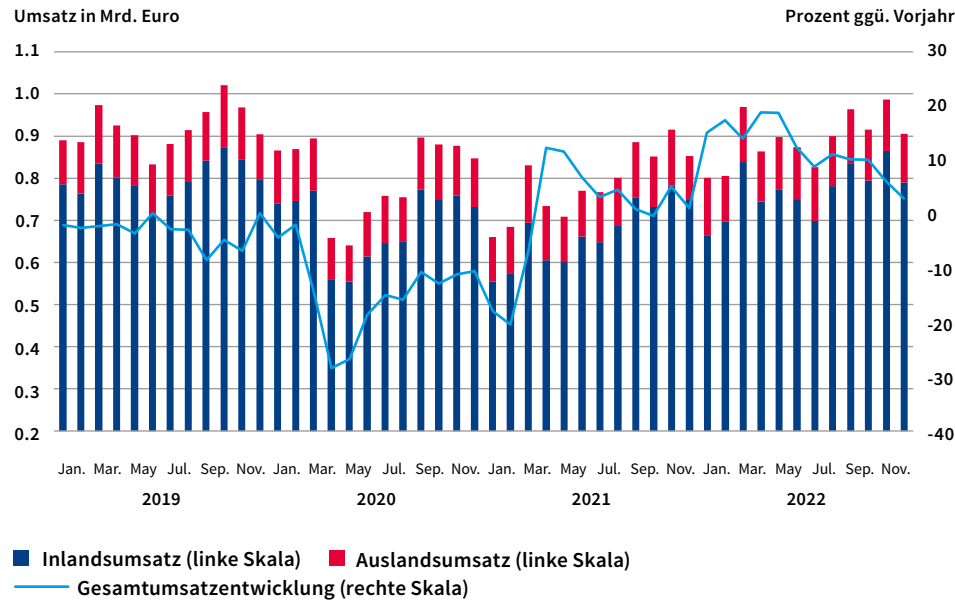
A new government took office in April 2023 in Estonia and significant changes are planned to restore the balance of the state budget. Several tax changes are coming in 2023 and beyond.

## 5.4 Germany

### 2022 turnover

Seasonally and calendar adjusted turnover in 2022 increased by 12% on a year-on-year basis.

#### Turnover in the German printing industry January 2019 – December 2022



**Source:** Monthly Reports in The Production Sector of the Federal Statistical Office of Germany

**Annotation:** Consideration of companies with at least 50 employees

**Calculation and illustration:** bvdM

- Printing of newspapers: +8,5% (year-on-year basis)
- Other printing: +14,7% (year-on-year basis)
- Pre-press and pre-media services: +2,0% (year-on-year basis)
- Binding and related services: -3,5% (year-on-year basis)

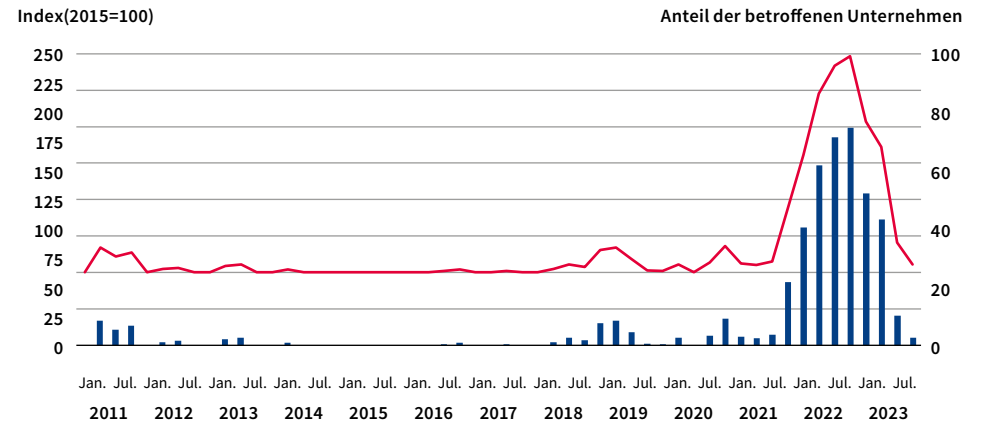
The preceding statistics are referring to the development of the turnover-index which is encompassing all printing-related production units (employing 50 or more employees) within a company.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

All print sectors were significantly impacted by the shortages and cost increases in 2022. The newsprint and advertising sectors were affected the most by paper prices, as prices for newsprint, LWC, and SC papers experienced the sharpest increases and reached new historical price peaks.

#### Supply Shortages in the German Printing Industry

**Source:** Monthly ifo-survey, bvdM



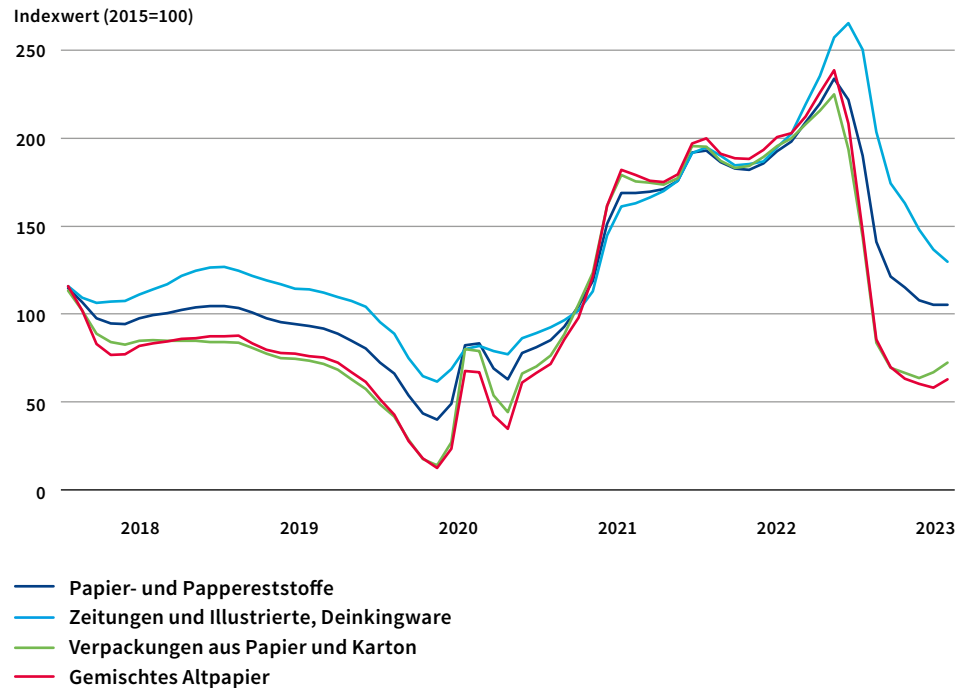
**Annotation:** The supply-shortage-index was developed by the bvdM to seize and display the paper shortage situation. However, it is not only referring to paper shortages but supply bottlenecks in general. Larger values are corresponding to a higher degree of supply shortages. The index is based on the monthly ifo-survey data.

Although supply-side shortages have nearly ceased in 2023, the underlying trend persists. Low demand in the first quarter of 2023 and uncertain forecasts are prompting paper mills to further reduce their production capacities. Paper market analysts estimate that the capacity reduction from 2020 to the end of 2023 could reach up to 5 million tons per annum.

While the reduction in production capacities of papermills is currently overshadowed by low demand, the risk of supply side shortages still persists. This risk has been highlighted by the recent experience of the coronavirus pandemic where supply decreased too fast and was not able to fulfil the recovering demand.

## 5.4 Germany

Recycled German paper price indices (January 2018-March 2023)



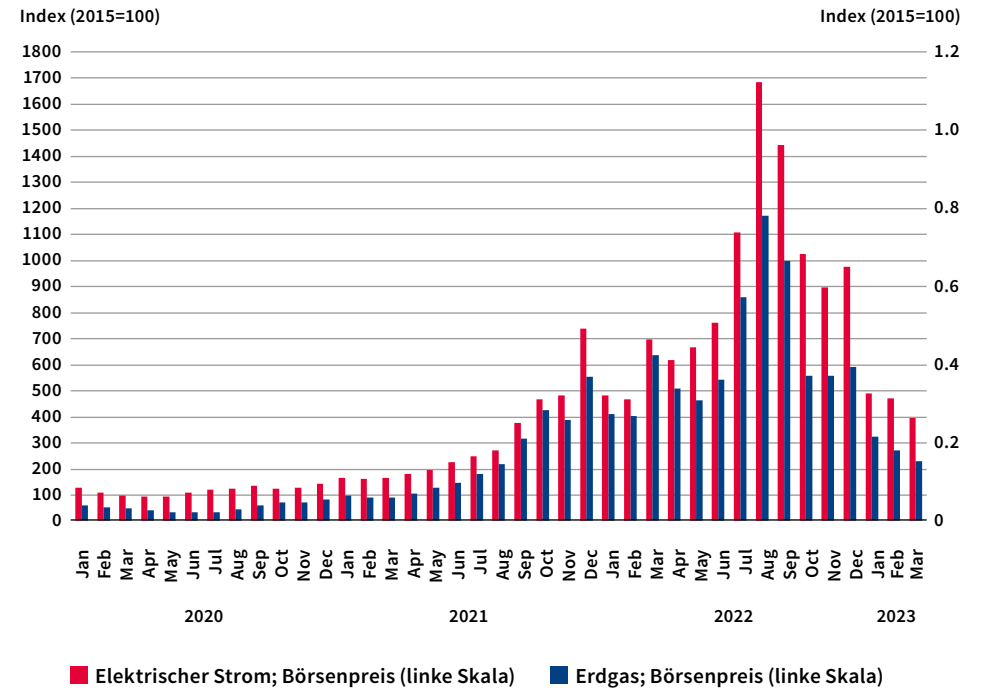
Source: Recycling paper (wholesale) price indices of the Federal Statistical Office of Germany

Calculation and illustration: bvdM

### Recovered paper

In recent years, digitisation and changes in media consumption behaviour have significantly impacted newspapers and printed advertising, leading to reduced volumes. Cost-driven price adjustments have further contributed to this trend. The practice of downcycling recovered graphic paper to meet the growing demand for packaging paper has also put additional strain on the supply of recovered graphic paper. During the first half of 2022, relatively stable demand for printed and packaging products increased the pressure upwards on all grades of paper. However, at the beginning of the second half of 2022, this trend reversed due to low demand and full recovered paper storages, causing prices to sharply drop. Some individual grades even reached pre-coronavirus price levels.

German gas and electricity price indices (January 2020-March 2023)



Source: Exchange price indices of the Federal Statistical Office of Germany

Calculation and illustration: bvdM

### Energy/Electricity limitations

In the years prior to 2022, Germany had made significant efforts to fill the anticipated gaps in the energy mix resulting from the planned phase-out of coal and nuclear power. This was done by shifting towards gas-powered electricity and heating plants. However, in 2022, the geopolitical situation changed with the beginning of the war in Ukraine and the resulting realisation that Russia was an unreliable supplier of natural gas. This led to an upward spiral in the gas and electricity markets, with energy exchange prices becoming increasingly volatile in response to geopolitical events. At first, government intervention was not decisive enough and the potential mid- and long-term effects were initially underestimated.

## 5.4 Germany

When Russia cut off the supply of natural gas altogether during the summer, combined with unexpected downtimes of French nuclear power plants and the filling of national gas storage facilities, prices for electricity and gas peaked in August 2022. This forced the German government to implement more decisive measures, including temporarily reactivating coal power plants and prolonging the scheduled phase-out of nuclear power plants for another 3 months.

Additionally, supply was increased by the construction of new LNG-Terminals and other measures. On the demand side, a drop in industry production caused by the deteriorating economic situation and gas austerity measures restrained gas and electricity consumption. Combined with relatively mild temperatures during the winter period, this prevented further extreme events and allowed for decreasing price levels. In the first quarter of 2023, average exchange prices dropped below the levels in the first quarter of 2022 but were still about twice as high as in the first quarter of 2021.

The war in Ukraine caused significant disruption to the German energy system and posed a risk to its transition to renewable sources. However, the efforts to achieve a carbon-neutral future are still ongoing and need to be expedited through substantial investments by the government and industry. Although the increases in CO<sub>2</sub> certificate prices (which reached an average of 80 €/ ton in 2022) and other related costs were overshadowed by the magnitude of the disruption caused by the war, they are likely to prevent prices from returning to pre-COVID levels in the short and medium term, continuing to strain the cost structure of energy-intensive companies in the future.

The price caps for gas, heat, and electricity introduced in the first quarter of 2023 may have the potential to contain future price spikes from reaching entitled printing companies, thus limiting energy costs to a certain and plannable range. However, highly subsidised energy prices cannot be a long-term solution as government market intervention is costly, inefficient and is prone to facilitate misallocation of resources. Therefore, it is essential to make substantial supply sided investments in diversifying and developing sustainable energy sources in order to stabilise the situation in the long-run.

For the German printing industry, the significant increase in energy prices posed a major challenge. Companies were impacted on multiple levels, including direct effects from energy consumption, indirect effects from rising prices of input goods, and the overall macroeconomic effects of supply-driven inflation. Prices for key input goods were already on the rise due to supply-side shortages and a previous spike in energy prices, and they further increased drastically. Due to the high market exposure associated with the energy-intensive production process, prices for graphic papers surged and reached new historic peaks. Consequently, the overall cost pressure forced printing companies to significantly increase prices to remain operational, which in turn decreased demand and lowered production volumes while increasing the overall turnover of the printing industry in 2022.

### Trends in specific market segments

Printing Products	2022		
	MIO. EURO	YOY	SHARE
<b>Werbedrucke Commercial Print/Advertising/Catalogues)</b>	4.644	17,2%	38,1%
Kataloge	863	20,2%	7,1%
Plakate	501	13,9%	4,1%
Geschäftsberichte	37	10,1%	0,3%
Prospekte	2.134	19,4%	17,5%
Mailings	255	5,1%	2,1%
andere Werbedrucke und -schriften	854	15,1%	7,0%
<b>Geschäftsdrucksachen</b>	1.129	11,8%	9,3%
<b>Zeitschriften (Magazines/Periodicals)</b>	809	15,7%	6,6%
<b>Zeitungen/Anzeigenblätter (Newspapers)</b>	1.065	12,7%	8,7%
Tageszeitungen	671	12,6%	5,5%
Wochen-, Sonntagszeitungen	157	19,5%	1,3%
Anzeigenblätter, Annoncenzeitungen	236	8,9%	1,9%
<b>Bücher/kartografische Erzeugnisse (books)</b>	998	12,9%	8,2%
<b>Bedruckte Etiketten</b>	1.493	9,2%	12,2%
<b>Kalender/Karten</b>	162	27,4%	1,3%
<b>Sonstige Druckerzeugnisse</b>	1.890	2,9%	15,5%
Textildruck (bedrucken von Bekleidung)	58	44,5%	0,5%
Bedrucken v. anderen Materialien als Papier	707	3,0%	5,8%
Andere Drucke	1.125	1,3%	9,2%
<b>Summe Druckerzeugnisse</b>	12.189	12,5%	100,0%
Druck- und Medienstufwerke	812	-3,3%	59,7%
Druckweiterverarbeitung	548	1,4%	40,3%
<b>Summe Druckdienstleistungen</b>	1.359	-1,5%	100,0%
<b>Summe Druckerzeugnisse und -dienstleistungen</b>	13.549	10,9%	



## 5.4 Germany

### Trends in specific market segments

Annotation: Annual changes are determined according to developments of the production values of certain printed products published quarterly by the Federal Statistical Office of Germany.

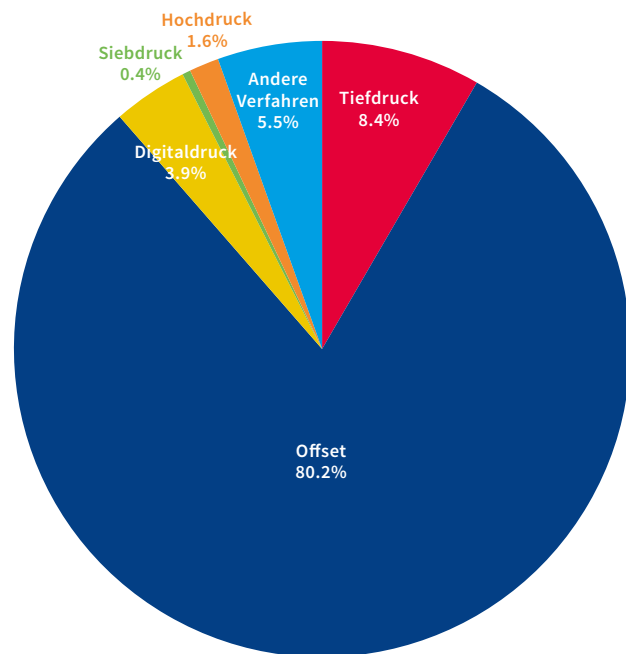
Digital printing: +13,5% year-on-year (2022/2021)

Offset: 16,0% year-on-year (2022/2021)

Publication gravure: +5,3% year-on-year(2022/2021)

Large format: +13,9% year-on-year (2022/2021)

### Share of printing process 2022



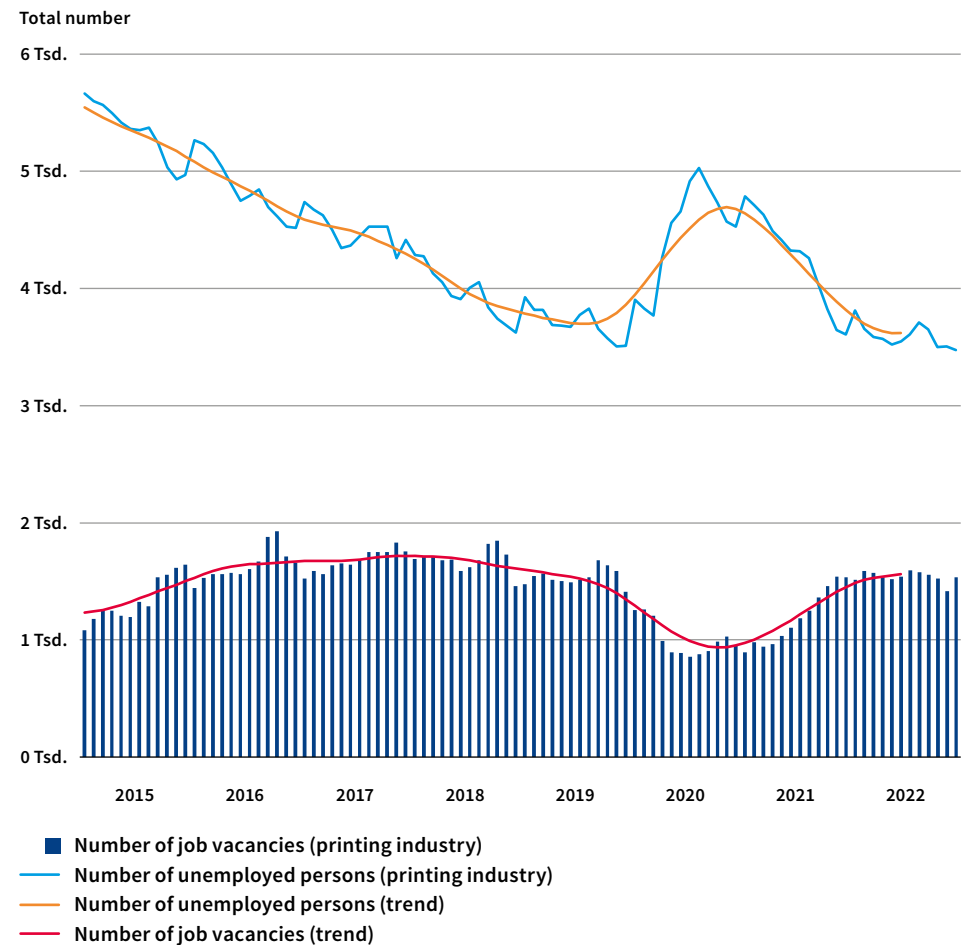
Source: Federal Statistical Office of Germany

Calculation and illustration: bvdm

### Trends in the employment market

Number of unemployed person and job vacancies in the printing industry (January 2015 – December 2022)

Source: Federal Employment Agency of Germany

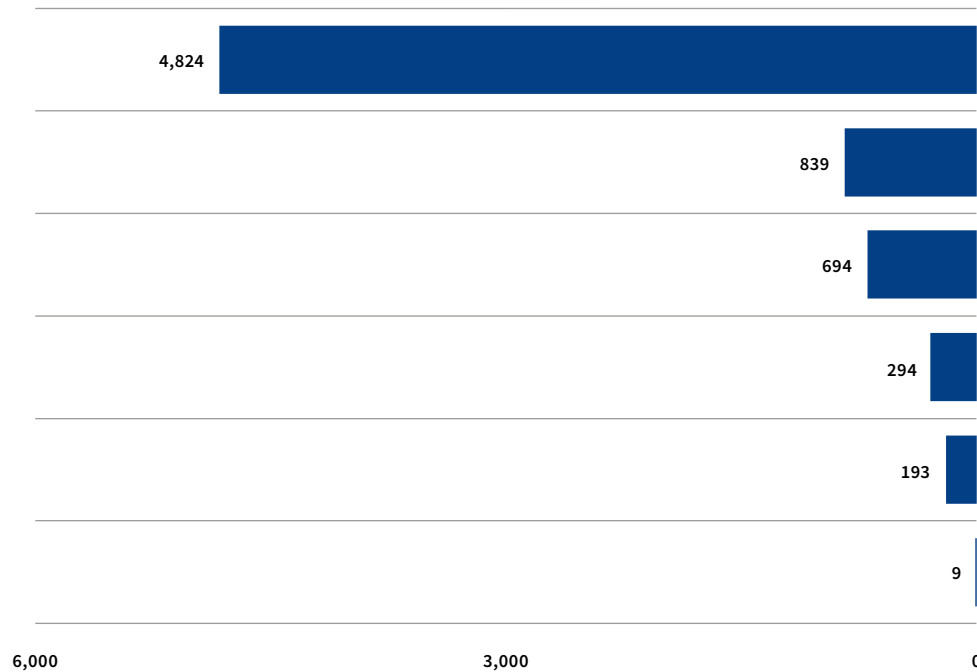


The average unemployment rate in the printing industry 2021 reached 3,7%.

## 5.4 Germany

### Trends in the number of operating companies

Number of operating companies



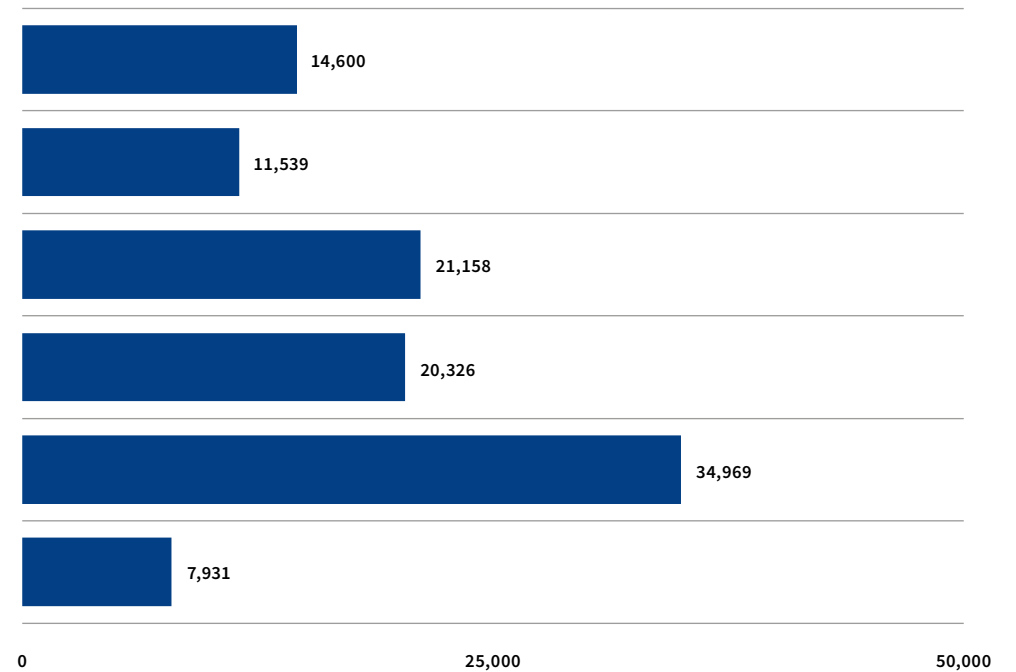
500+	100-499	50-99	20-49	10-19	1-9
9	193	294	694	839	4,824

■ Betriebe

Source: Federal Employment Agency of Germany (30.06.2022)

Calculation and illustration: bvdm

Number of employees by firm size



500+	100-499	50-99	20-49	10-19	1-9
7,931	34,969	20,326	21,158	11,539	14,600

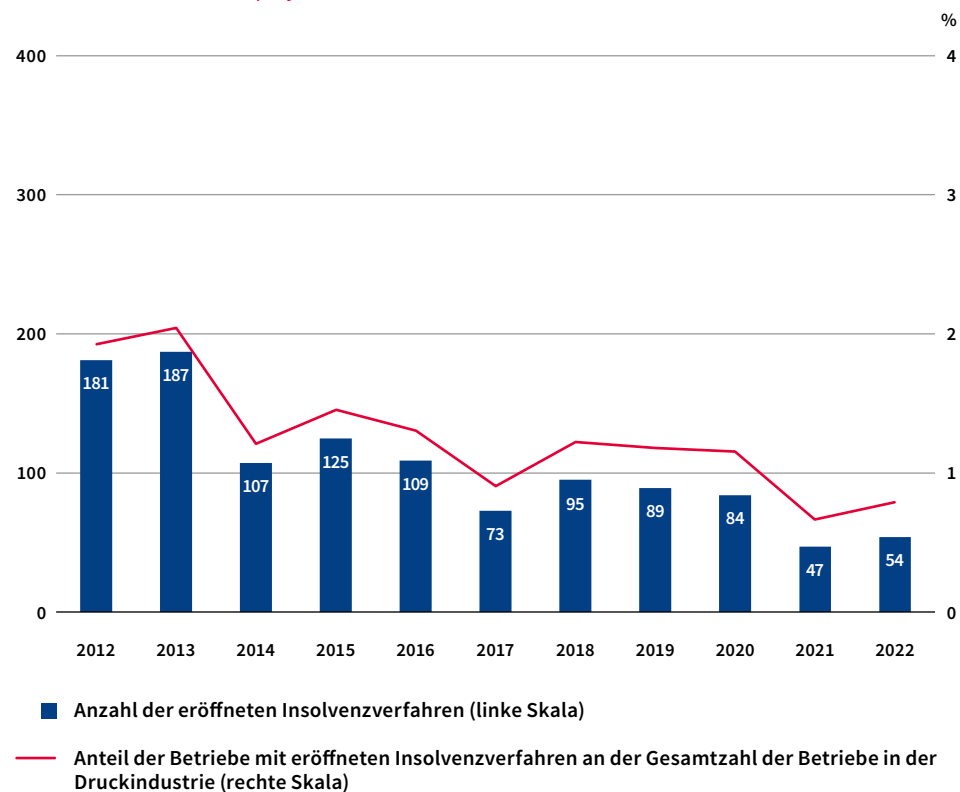
■ Beschäftigte

Source: Federal Employment Agency of Germany (30.06.2022)

Calculation and illustration: bvdm

## 5.4 Germany

### Total number of bankruptcy cases



Source: Federal Statistical Office of German

Calculation and illustration: bvdM

The total number of bankruptcies rose in 2022 by 15% on a year-on-year basis.

The worsening of the macroeconomic conditions, including supply side shortages for key input goods, mainly graphic papers and the turmoil on the energy markets, with its implications for the printing industry facilitated the increase in bankruptcies. Please note that this data does not include companies which voluntarily cease operations.

### Trends in foreign trade

Note: Due to new regulations and methodical changes implemented for foreign trade data by the Federal Statistical office and the relevant players in 2022, data is not comparable to previous years and year-on-year changes are not included in this year's edition.

Printing Products	Exports		Imports	
	Tsd. Euro	Share in %	Tsd. Euro	Share in %
Werbedrucke/Kataloge	737,790	18.5	358,362	11.1
Etiketten	377,589	9.5	229,129	7.1
Kalender/Karten	110,388	2.8	140,135	4.3
Abziehbilder/Transferdrucke	221,925	5.6	40,249	1.2
Sonstige Erzeugnisse	702,593	17.6	591,216	18.3
Summe Druckerzeugnisse	2,150,285	54.0	1,359,091	42.2
Bücher/Broschüren	1,539,956	38.7	1,594,272	49.5
Zeitungen/Zeitschriften	291,393	7.3	269,888	8.4
Summe Verlagserzeugnisse	1,831,349	46.0	1,864,160	57.8
Summe Druck- und Verlagserzeugnisse	3,981,634	100.0	3,223,251	100.0

Source: Producer and import price indices of the Federal Statistical Office of Germany

Calculation and illustration: bvdM

## 5.4 Germany

Exports to ...			Imports from ...		
Country	Tsd. Euro	Share in %	Country	Tsd. Euro	Share in %
Schweiz	671,955	16.9	Polen	877,982	27.2
Österreich	532,772	13.4	USA	301,097	9.3
Polen	429,237	10.8	China	275,490	8.5
Frankreich	409,260	10.3	Tschechische Republik	266,272	8.3
Niederlande	231,842	5.8	Großbritannien	206,054	6.4
USA	201,268	5.1	Niederlande	203,798	6.3
Großbritannien	180,956	4.5	Italien	197,434	6.1
Tschechische Republik	171,301	4.3	Österreich	139,495	4.3
Italien	151,866	3.8	Frankreich	137,665	4.3
Belgien	120,865	3.0	Belgien	95,301	3.0
Summe der 10 wichtigsten Länder	3,101,322	77.9	Summe der 10 wichtigsten Länder	2,700,588	83.8
Summe Gesamt	3,981,634	100.0	Summe Gesamt	3,223,251	100.0

**Source:** Producer and import price indices of the Federal Statistical Office of Germany

**Calculation and illustration:** bvdm

China and the US are continuing to gain weight as major exporters of printed products. Especially low energy costs and, in the case of China, labour costs, reduce the overall costs of printed products and create cost related incentives for European buyers. While quality remains one of the major benefits of the German printing industry, the current cost development poses the potential of losing ground in the international competition with European and non-European producers.

### Trends in labour costs

With inflation soaring during 2022 and expectations for a slow return to the target inflation rate of 2% persisting, labour costs are expected to rise. This already began to trickle down in the low- and non-skilled labour sector with the politically motivated decision to raise minimum wages to 12 € in 2022(+22% compared to January 2022). While collective bargaining wage changes remain fixed till the beginning of the year 2023, limiting the effects for 2023, non-collective wages are expected to rise. Increased Competition in the market for skilled labour and rising wages for workers in similar industries incentivise companies to adapt, in order to attract a sufficient number of skilled employees.

### Developments affecting competitiveness

- > A comparatively high taxation is considered to be one of the most salient problems, which is directly influencing the profitability of companies. In order to preserve international competitiveness, it is necessary to decrease the corporate income tax. Germany's corporate tax burden, currently close to 30%, is one of the highest among all OECD countries.
- > High bureaucratic obstacles are also taking a toll on companies.
- > High energy costs, as mentioned, can negatively affect international competitiveness and potentially drive some companies to relocate to countries with more favourable conditions. Although this is currently unlikely for the printing industry, it could become a concern if conditions deteriorate further.

## 5.5 Italy

### 2022 turnover

Based on a survey by the Osi - Osservatorio Stampa e Imballaggio (Printing and Packaging Observatory) of the Statistical Department Assografici, the turnover in the printing industry grew by 13.5% in 2022 compared to 2021, particularly due to a very marked increase in the first quarter of 2022. This growth in turnover in 2022, after that in 2021, makes it possible to recover the intense loss in 2020, caused by the Covid-19 pandemic; the turnover in 2022 is 4.3% higher than that in pre-pandemic 2019. It should be noted, however, that the double-digit increase in turnover in 2022 is due to an inflationary effect, namely the attempt by printing companies to recover at least part of the sharp increase in energy, paper, other raw materials (such as inks, solvents and adhesives) and transport prices, this creates tensions between printers on the profitability front.

An analysis of the companies' turnover shows a significant prevalence of positive results in 2022, as compared to 2021: 71% of the companies registered an average income increase of 15.6%, while 29% experienced a decrease (of 13.4% on average) in their turnover.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

On the raw material side, the increase in prices for paper, which had characterised 2021, continued strongly in 2022: only in the fourth quarter did the first signs of stabilisation or a fall appear. Given the simultaneous increase in energy prices, in particular, but also in prices of other raw materials (such as inks, solvents, adhesives) and transport, the state of tension in this area has continued over the year, with negative effects on operating margins.

A "Flash Survey" conducted by Statistical Department Assografici in March 2023, analysing the costs of the production factors of printing companies, shows that the highest cost increases in 2022 concerned "gas" and "electricity", which grew respectively by +54% and +50%. Average cost increases for "paper and cardboard" are around 40%. Increases in "plastics" costs (+15%), "inks/solvents/adhesives" (+18%), and "transport" costs (+16%) are lower. The total cost of production for printing companies is estimated to have grown by an average of 29% in 2022.

Based on the Milan Chamber of Commerce price lists for paper, the increase in 2022 on that registered in 2021 for paper for newspapers, catalogues and the mass retail sector is between +58 and +65%, the increase for natural papers is between +15 and +45%, and that for coated papers is between +44% and +48%.

### Trends in specific market segments

Based on ISTAT data from April 2023, production in the printing sector ended 2022 with a double-digit decrease of 11.4% over 2021, determined by the advertising and commercial printing segment (-18.1%), while the publishing printing segment is better able to contain losses (-8%). In terms of product, the 2022 production decline is mainly driven by the advertising and commercial printing matter (-18.7%), with forms losing 4%. In the printing-publishing segment, the 2022 decline in books (-8.4%) and magazines (-6.4%) was similar.

On the publishing printing front, based on data from the Aie Association, the book market declined moderately in 2022, but after a strong recovery in 2021. Value-based sales of printed books (various) declined by 2.3% in 2022, while copies sold fell by 2.4%. It should be said, however, that, despite these negative figures, Italians bought 13 million more books than in the pre-pandemic period, i.e. growth compared to 2019 remains +13.1% in value and +13.3% in copies. In terms of buying channels, physical bookshops resurfaced in 2022 (+1% of sales), but that did not offset losses in online stores (-5%) and large-scale retail stores (-10%). E-book sales also declined in 2022 (-8%), but audiobooks continued to grow (+4.2%), a product that in recent years has increasingly appealed to the Italian public.

On the advertising investment front, the year 2022 ended in balance: the overall growth of the Italian market in 2021 was very slight (+0.1%), according to Nielsen. Unfortunately, the negative phase of press advertising continued in 2022 (-5.7% on an already difficult 2021): in particular, magazine advertising fell slightly by 4.8%, while newspapers had a worse trend (-6.1%). Among the other most relevant media, TV advertising declined (-5.2%), while web advertising continued to grow (+3.9%).

On the advertising and commercial printing front, advertising and commercial printing fell sharply in 2022: the segment was affected by the fall in advertising by large retail outlets (-8.8%), which are among the main users of advertising and commercial printed matter (leaflets, posters, etc.). After the two-year reduction in mobility linked to the Covid-19 pandemic, the resumption of billboard advertising investment in 2022 was significant (+40.8%), while the growth of direct mail investment (+0.4%) was slight.

## 5.5 Italy

### Trends in printing process

On the investment front, Acimga (Association of Italian manufacturers of printing and converting machines) reported, after an abrupt start to the year, a 2022 marked by growth: on the basis of the pre-summaries, the increase in turnover in 2022 was 11.2% compared to 2021, due to a significant increase in orders, driven mainly by exports. Acimga points out, however, that the Covid-19 pandemic, the conflict in Ukraine and inflationary developments led to severe supply chain difficulties in 2022, characterised by a severe shortage of raw materials and delays in the delivery of components, with negative impacts on machine delivery times (both internationally and nationally) and increased costs.

### Trends in the employment market

Based on the latest ISTAT data available as of April 2023, employment in the Italian printing sector fell by 2% in 2022 over 2021, down roughly from 74,050 to 72,600 workers.

After the very strong increase in the number of hours admitted to the Redundancy Fund System in the “publishing, printing and reproduction of recorded media” segment in 2020, due to the pandemic crisis, and the decline in 2021, there was a sharp further double-digit decrease in the number of hours admitted to the Redundancy Fund System in 2022. Overall, the number of hours admitted to the Redundancy Fund System totalled 8.2 million, down 72.1% from 29.6 million in 2021: more “normal” levels for the sector, but still quite high compared to pre-pandemic ones (4.6 million in 2019).

### Trends in the number of operating companies

In 2022, Infocamere data showed 15,520 companies operating in the “printing and reproduction of recorded media” segment, about 95% of which have less than 20 employees. Active companies dropped by 476 units compared to 2021, i.e. by -3%.

The decline in printing companies has been ongoing for several years, but the 2022 decrease was slightly less than in 2021 (-3.3%) and stronger than in 2020 (-2,3%); therefore, it is possible that the strong 2020 crisis in the printing sector linked to the Covid-19 pandemic, despite subsequent signs of recovery in 2021 and 2022, speeded up the difficulties and closing down of generally weaker enterprises, such as SMEs, that were less prepared to cope with the situation.

### Trends in foreign trade

On the foreign trade front, exports in value of the printing sector slowed sharply in the fourth quarter of 2022, compared to the pace of growth in previous quarters. The intense growth in turnover in the printing sector in 2022 was also determined by the foreign component, the year 2022 closed with a significant increase in the printing segment’s export value (22.3% over 2021). In terms of its share of the industry’s turnover, the printing sector’s export value increased significantly from 18.1% in 2021 to 19.5% in 2022.

Looking at the main products, in 2022 there was a strong trend growth in exports in terms of magazine value (+53%), but the increase in exports of books (+19.7%) and advertising and commercial printed matter (+19.9%) was also double-digit. Among the smaller products, exports also grew to double-digits in 2022 for transfers (+27.4%), cartographic works (+25.4%) and calendars (+11.5%); on the other hand, 2022 exports of album-books of images (-44%), stamps (-52.4%) and manuscript or printed music (-55.4%) decreased.

From the geographical standpoint, in 2022 the export value of printed products (compared to 2021) grew among the five main countries of destination. Specifically, 2022 exports of printed products increased moderately to the main country, France (+2.5%), almost doubling to the United States (+78.6%), and double-digit growth also to Germany (+20.7%), the United Kingdom (+15.9%) and Spain (+44.6%), which in 2022 became the fifth country of destination, surpassing Switzerland in this ranking (-2.1%). Taking a look at the 15 main destination countries with regard to printed matter, very high 2022 export growth in value was reported in various countries, such as the Netherlands (+61.4%), China (+28%), Bulgaria (+243.2%) and Libya.

The same turnover analysis applies to exports (and imports) in value, i.e. there was an intense inflationary component linked to the sharp increases in energy, raw material and transport prices in 2022.

Indeed, looking at the volume of exports in the printing sector in 2022, there was even a double-digit decline compared to 2021 (-12%), caused by a negative trend in the second half-year and in particular in the fourth quarter; in terms of product, in 2022, the volume of advertising and commercial printed matter exports decreased by 22.6%, and the volume of books declined by 8.7%, while the volume of magazines grew by 7.2%.

The value imports of the printing sector showed an upward trend during the year.

## 5.5 Italy

The year 2022 closed with a moderate increase in the import value of the printing sector compared to 2021 (+2.6%); growth was strong in the import of advertising and commercial printed matter (+26%), double-digit for that of magazines (+14%), while imports of books fell significantly (-15.6%).

From the geographical standpoint, an analysis of the 5 main countries of origin of printed matter showed a decrease in imports in 2022 over 2021 from the principal country, Germany (-2%), imports from the United Kingdom hit double digits (+18.7%) and from China (+22%). Imports from France declined (-16.9%), while they increased from the fifth country, Spain (+3.6%). Looking at the top 15 countries of origin of printing products, there were significant import increases in value 2022 from the Netherlands (+55.2%), Romania (+401.7%), Slovenia (+42.1%), Belgium (+56.5%) and Switzerland (+37.4%), while imports from Poland fell sharply (-57.5%).

On the other hand, analysing imports in quantities in the printing sector in 2022 showed a moderate decline in 2021 (-5.5%), caused by a negative trend in the second half-year and, in particular, in the fourth quarter; in terms of product, in 2022, volume imports of books fell by 23.3%, that of magazines fell by 8.9%, while that of advertising and commercial printed matter grew by 20.8%.

### Trends in labour costs

In January 2021, negotiations for the renewal of the National Collective Labour Agreement (CCNL) in the printing-publishing industry were successfully concluded. The new printing-publishing CCNL ran from 1 January 2021 to 31 December 2022. The first salary increases were applied from May 2021, followed by January and October 2022. According to ISTAT data, hourly wages in contracts for workers and employees in the printing industry increased by 2.3% in 2022 over 2021.

### Developments affecting competitiveness

The 18app continued to have a positive effect on the book market in 2022. This is a Culture Bonus of €500 for 18-year-olds, an initiative started in 2016, promoted and supported by the Federazione Carta e Grafica (Federation of the Industry Associations for Paper, Printing, Converting and related Technologies), of which Assografici is a member together with Acimga and Assocarta. The Bonus can be spent on cultural products, including books, subscriptions to newspapers/periodicals and other audiovisual publishing products. Since November 2021, this measure has been a structural part of the Budget Law. The success of the Culture Bonus – with almost 2.5 million young people benefiting between 2016 and 2022, for a total state investment of over €1.1 billion, and with the involvement of about ten thousand exhibitors – has been taken as a model by other European countries, such as France and Spain, which have adopted similar measures.

In order to support press advertising investments, a tax credit amounting to 50% of the value of advertising investments in newspapers and periodicals (including online) was established in 2018 and confirmed in 2022, and on local and national television and radio stations, for businesses, the self-employed and non-commercial entities. The tax credit shall be granted up to the maximum amount of the annual allocation, which shall be €90 million in total for the year 2022, of which €65 million for advertising in newspapers and periodicals. The incentive has always been supported and promoted by the Federazione Carta e Grafica (Federation of the Industry Associations for Paper, Printing, Converting and related Technologies).

## 5.6 Latvia

### 2022 turnover

The turnover of the Latvian printing industry increased in 2022 by 21 %, while production volumes increased by only 4.6% (average figure for the last 5 years). The large turnover increase is explained by material price increases.

More than 70% of printed products were exported. It was the most challenging year to balance the continuous unpredictable price changes with shortage of materials in the first 3 quarters of the year and enormous increase in energy costs starting with the 3rd quarter of the year.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

All print sectors were affected by increasing material costs and shortage of materials.

All manufacturing companies suffered from inflation and pressure on labour costs.

### Trends in specific market segments

Books: + 9%

Magazines: same as 2021

Newspapers: same as 2021

Direct mail: -4%

Other commercial printing (catalogues, advertising...): -2%

Printed packaging: +6%

### Trends in printing process

Digital printing: +10%

Weboffset: same as 2021

Sheetfed offset: same as 2021

Packaging gravure: same as 2021

Flexography: +7%

Large format: same as 2021

### Trends in the employment market

On average, the 2022 unemployment rate in Latvia was approximately 6.9%. Nevertheless, it was difficult to find skilled workers or attract young people to develop skills. At the same time, in autumn 2022, the Print and Media department of the Technical College managed to accept more students than in recent years. Employee training was carried out in almost all printing companies at all levels supported by EU funding.

### Trends in the number of operating companies

Three very small size printing companies closed down in 2022 in Latvia.

### Trends in foreign trade

Most exports were directed to EU or EEA countries. Only few deliveries were directed to the US. Latvia's closest neighbours, Estonian and Lithuanian printers, as well as Polish and Slovakian companies compete with Latvia in EU markets.

### Trends in labour costs

The average increase in labour costs was close to 7% in 2022. All through the year, companies experienced employees leaving for a workplace closer to their living place to save costs due to inflation, which went over 20% during some months. Latvia experienced unprecedented growth in consumer goods, e.g. grain products +64%, dairy products +35%, meat +37%, energy, water, waste +47%, catering services +18 % etc.

Although printing companies were stretched to manage the growing costs, almost all companies invested in new machinery to improve efficiency and to automatise production processes.

### Developments affecting competitiveness

The main achievement of the joint efforts of the Latvian Printers' and Publishers' Associations was the reduction of VAT to 5% on all printed and electronic publications, including books and periodicals from the beginning of 2022.

No printing companies qualified for governmental support to cover the high energy costs.



## 5.7 The Netherlands

### 2022 turnover

In the Netherlands, the Gross Domestic Product (GDP) in 2022 was growing with 4,5% compared to the year 2021, and with 5,5% compared to the pre-COVID year 2019. In the printing industry, the domestic market for print products and services was also growing with 9,8% compared to 2021, and even with 8% compared with 2019. The turnover for the foreign market was growing with 11,3%, but still lower than in 2019. Total print turnover in 2022 was about € 3.166 million, 4,2% more than in 2019. The figures shown in the table show that the printing industry in The Netherlands was hit much harder than the total Dutch economy but is recovering in 2022 from the COVID-19 lock down measures in 2020 and 2021.

#### Printing industry turnover and GDP\* NL; index (2015=100)

Year	Domestic market	Foreign market	Total turnover	GDP-NL
2010	152.9	87.1	132.8	96.3
2011	146.4	93.9	130.4	97.8
2012	125.3	96.9	116.6	96.8
2013	120.8	101.6	114.9	96.7
2014	109.7	100.1	106.8	98.1
2015	100.0	100.0	100.0	100.0
2016	98.8	126.6	107.2	102.2
2017	92.1	118.7	100.1	105.1
2018	90.1	114.4	97.5	107.5
2019	85.7	115.2	94.6	109.5
2020	74.6	93.2	80.2	105.6
2021	83.9	99.1	88.6	110.5
2022**	93.7	110.4	98.8	115.0

Source: GOC Research analysis of CBS data

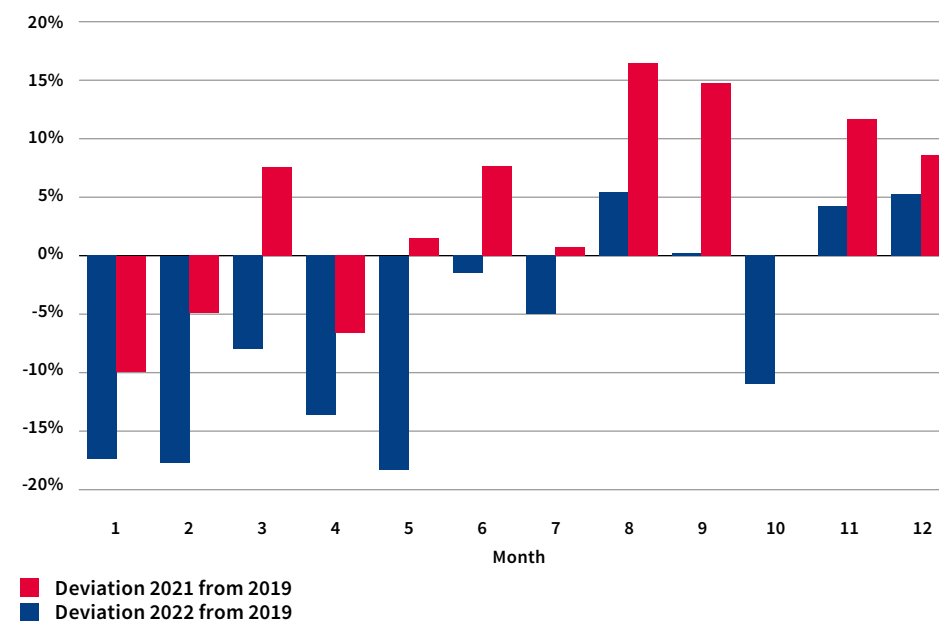
\* Gross Domestic Product (GDP) in the Netherlands

\*\* preliminary data

The COVID-19 crisis has had a major influence on most sectors within the printing industry. In the figure below the impact on turnover is illustrated for each month of 2021 and 2022 compared to 2019. The figures show the deviation in percentages of each month in 2021 and 2022 compared with the turnover level in the same month in 2019. In the first five months of 2021, the monthly turnover was very low compared to the same period of 2019. In the second half of 2021, the turnover recovered, but in October there was a relapse. The same pattern is seen in 2022, with a stronger recovering in the second half of the year.

The printing sectors that were least affected by the COVID-19 crisis were printing of packaging, newspapers, magazines and books. All other printing sectors were impacted very strong as a result of the long-term closure of the catering industry, events industry, sports, theatres, museums et cetera. However, in 2021, turnover did not fully recover compared to 2019, but in the second part of 2022 it did.

#### COVID-19 impact on monthly turnover in 2021 and 2022 compared to 2019



Source: GOC Research analysis of CBS data

## 5.7 The Netherlands

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

The prices of paper, including packaging papers, transport, gas and electricity were rising already strongly in 2021, but exceptional strong in 2022. On the other hand, the prices for printing productions were lower in 2020 and 2021 compared to 2019, but much higher in 2022. This means that printing companies were not successful to pass on cost increases in their prices in 2020 and 2021, but they were in 2022. Nevertheless, the rapid rise of costs stimulates strongly to reduce production costs by increasing productivity.

The strong inflation in 2021 and 2022 is seen in the graph. The total inflation in The Netherlands is also seen in all printed products like books, newspapers and magazines, and in other printed products. The rapid rise of the prices causes a drop in demand and stimulates the change to digital media. The growing turnover is not an expression of more quantity of printed products, but a value increase of a shrinking quantity of printed products.

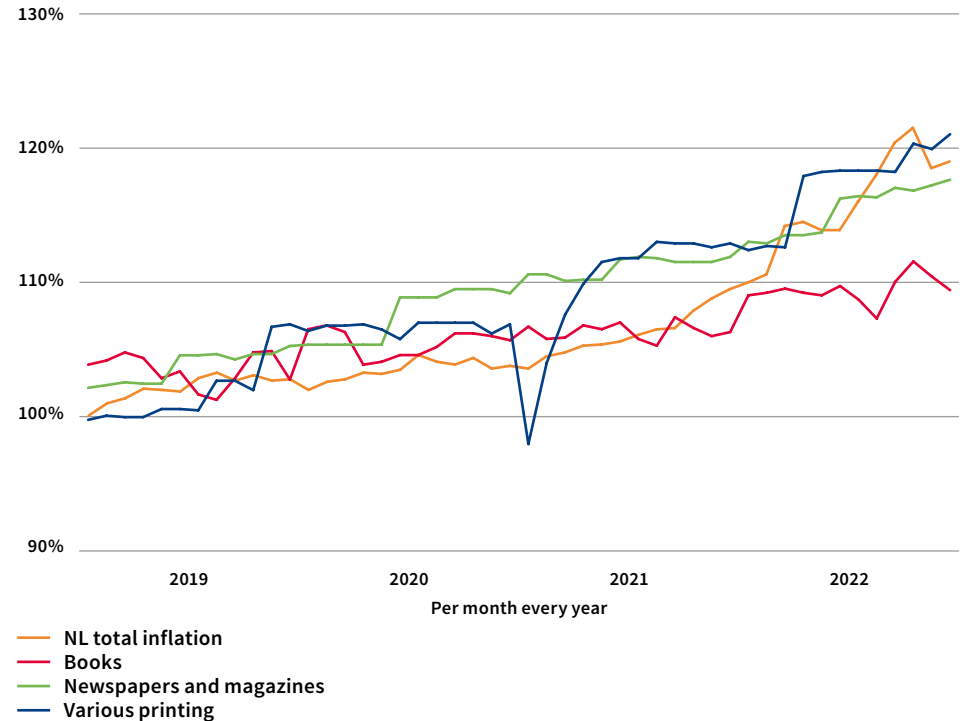
#### Trends in production costs and prices print products; Index (2015=100)

Year	Production costs							Output prices
	Paper	Ink	Transport	Gas small	Gas big	Electricity small	Electricity big	Print industry
2015	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	101.6	98.1	100.5	103.0	76.9	95.3	88.6	95.5
2017	103.3	94.1	98.8	99.1	85.6	90.6	83.5	93.6
2018	109.2	94.2	97.9	102.1	102.6	95.3	86.1	95.8
2019	108.3	95.3	100.3	110.4	84.2	104.7	91.1	97.7
2020	104.4	97.9	102.9	122.6	78.5	119.8	88.6	96.1
2021	116.0	99.5	105.6	128.3	154.7	134.9	132.9	96.1
2022*	152.2	110.6	116.4	162.4	383.3	190.6	245.6	113.3

Source: GOC Research analysis of CBS data

\* preliminary data

### COVID-19 impact on monthly turnover in 2021 and 2022 compared to 2019

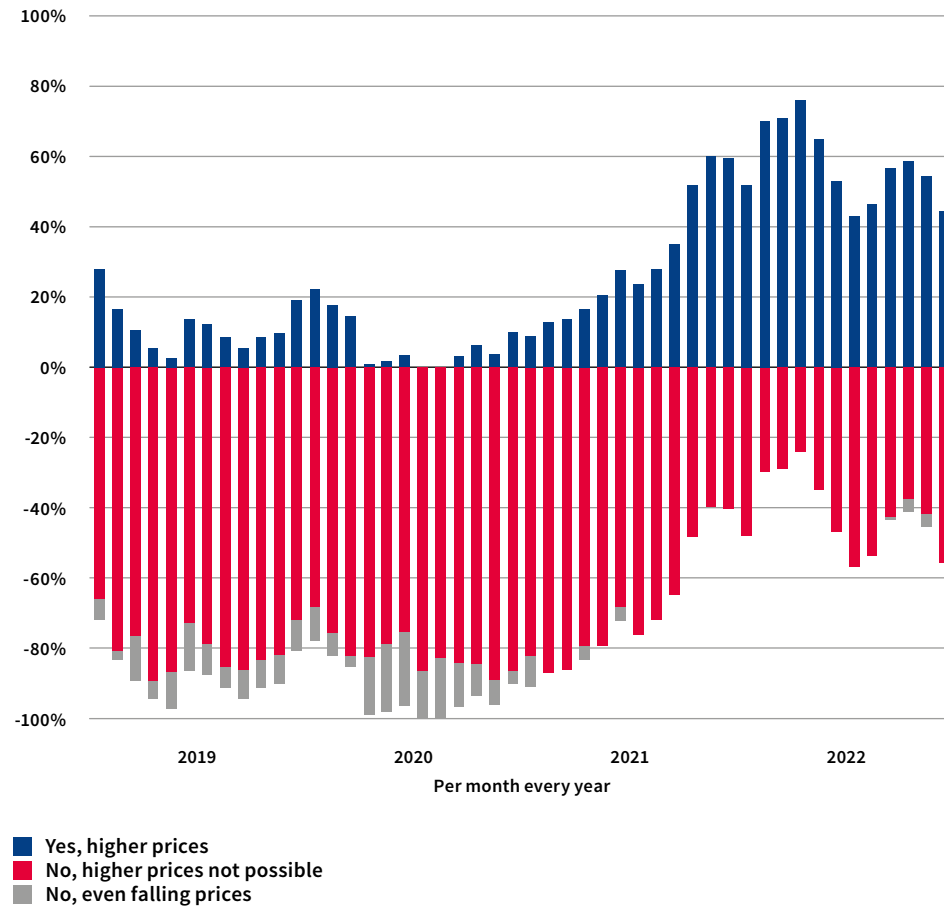


Source: GOC Research analysis of CBS data

The rising prices of printed products, and the increase in production prices of printing, suggest that all printing companies are able to translate their cost increases into higher production prices. The graph shows the results of surveys in the printing industry about this question. In 2019 and 2020, almost all companies declared not being able to translate costs into higher prices for productions. In 2021 and 2022, this situation changed, but there are still many companies that are not able to do so. In the second half of 2022, the situation is less positive for printing companies to further increase their prices.

## 5.7 The Netherlands

### Translate cost increases into graphic production prices



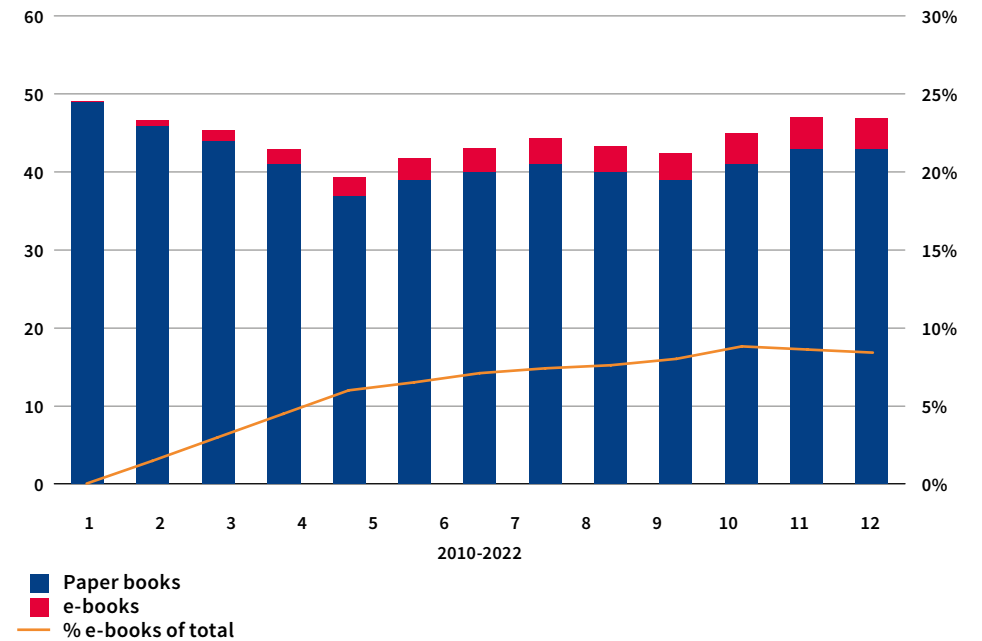
Source: GOC Research analysis of CBS data

### Trends in specific market segments

#### Books

The quantity and turnover in value are growing for printed books in 2020 and 2021. In 2022, the total number of sold printed books is almost the same as in 2021, slightly less. The share of e-books in total sold books is about 8,8% in 2020, 8,6% in 2021 and 8,4% in 2022. The number and share of sold e-books do not grow fast. Almost all popular titles are available on internet for free. Reading books on e-reader devices is not (yet) very popular in The Netherlands, printed books are preferred. In book printing, there is a strong competition with Denmark and China. In 2022, books are more often printed in small runs. With some book titles, it is possible to order a separate printed copy. This copy is fully automated produced in a digital printing and finishing production process.

#### Total number of printed books and e-books sold (x Million)



Source: GOC Research analysis of GFK data

## 5.7 The Netherlands

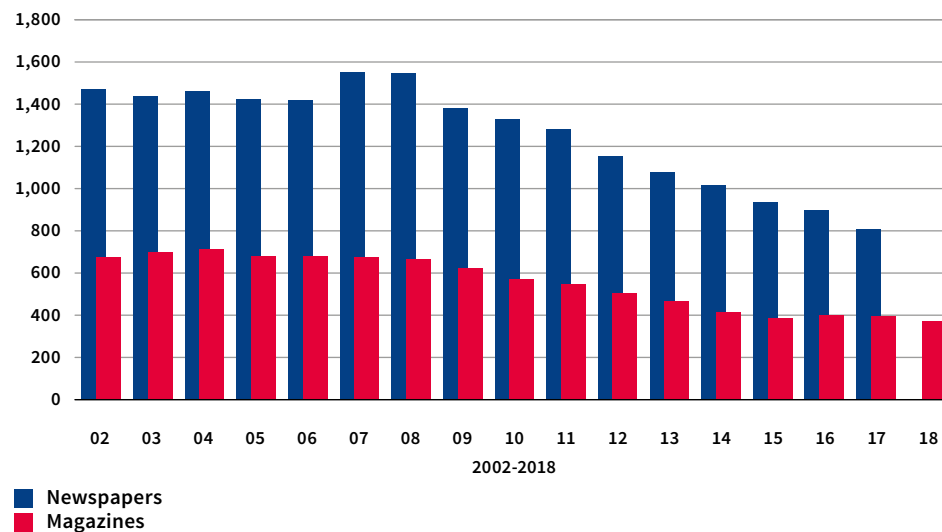
### Magazines

The number of magazine titles is growing but circulation figures are going down in 2022. This is the case for almost all titles and for the total sales of magazines. Almost all magazine titles have a paper and an e-based version. In the graph, the numbers of sold magazines are showed together with the numbers of newspapers.

### Newspapers

Paid newspaper circulations went down very strongly and continues to go down in 2022. The number of newspaper titles is stable. All the titles also have an e-news web version. E-news portals partly have free access and partly paid subscription or pay per article. The loss of paper-based turnover in value is still not compensated by the paid subscription for e-news access. In 2019, the national market for free newspapers declined and stopped in 2020 completely. The impact of news-apps on smartphones caused a rapid decline in the circulation of the free newspapers, the COVID-19 crisis created the momentum to stop.

### Total number of newspapers and magazines sold (x Million)



Source: GOC Research analysis of Commissariaat voor de Media data

### Direct mail

In the past ten years, personalised direct mail was growing rapidly because of digitalisation of personal information and one-to-one marketing strategies of institutions (health care, government) and companies. More and more this kind of personalised communication take place over the internet instead of paper. A more recent threat for personalised direct mail is the European privacy legislation, on the one hand, because it is more difficult to collect and use personalised information, on the other hand, because the public opinion becomes more hostile to personalised direct mail. In Amsterdam, the local government has changed the distribution of all non-addressed commercial print to a system that allows posting only with a sticker YES on the individual post box. The print employers' organization KVGO has lost all court cases against this local legislation. Other cities in the Netherlands, Utrecht, Rotterdam, Haarlem and Tilburg, introduced the same sticker-system in 2020. In 2022, a digital system 'InMijnBus.nl' all Dutch households will be able to use this digital Mailing-system to block or to give access to their mailbox for all unaddressed mailings. With this digital Mailing-system 'InMijnBus.nl', it will be possible to block and to give access to all separate mailings, and to change their preferences every day.

### Other commercial printing (catalogues, advertising...)

Job advertisements, manuals, phone books and timetables moved already complete to internet and social media devices. Product advertising in newspapers partly moved to internet. Advertising in magazines mostly remained. Because of the circulation decline the prices for advertisement declined too and big discounts are offered to advertisers because of strong competition between publishers.

### Printed packaging

Printed packaging is performing well because of economic growth and the development of web shop deliveries at home. In general, the position of paper packaging is growing against the pollution problems with plastic packaging. Paper packaging is gaining ground on plastic packaging already in the Netherlands. The Dutch government wants to introduce a ban on all kinds of plastic and paper packaging for food and drinks such as cups. This ban of plastic and paper cups will even apply to offices and institutions.

## 5.7 The Netherlands

### Trends in printing process

#### Digital printing

Digital printing is rapidly growing in the Dutch printing industry. In 2004, already 22% of the companies had digital printing systems (inkjet and laser) for print productions in addition to offset, flexography and gravure printing systems. These printing systems were used for small runs (max. 250 prints) and for personalised direct mail. In 2022, about three quarters of the printing companies (75%) had also digital printing systems in combination with other more traditional printing techniques. Large label printing companies and small textile printing companies are changing to inkjet printing systems. In 2004, about 5% of total print turnover was realised by digital printing and, in 2022, this is already 32%. Although still not as much as predicted by Frank Romano, who predicted some years ago that this would be at least 50%.

In 2022, a first Dutch printing company installed a nanographic type Landa S10P press machine. In the same year, a second printing company bought a nanographic digital S10P press from Landa.

#### Share of digital printing: companies and total turnover

Year	Companies with digital printing in addition to offset etc.	Share of digital printing in total turnover
2004	22%	5%
2008	43%	8%
2012	62%	17%
2018	64%	21%
2021	71%	28%
2022	75%	32%

Source: GOC Research analysis of annual survey printing industry

#### Web-offset

In the Netherlands, web-offset is still strong in production of newspapers and magazines but is losing share of production to sheetfed offset and flexography. That is because the production quality of flexography has become much better the last ten years, the print speed of sheetfed offset is very high, and while the printing runs are much smaller nowadays.

#### Sheetfed offset

Sheetfed offset still has a strong position in printing production because of outstanding quality and speed (18.000 sheet per hour) combined with automated inking systems, automated plate change, automated clean up systems and automated visual ink density control systems. The automation system creates a complete control circuit. That's why offset is still in the lead of the printing production. Printing companies are using more and more large format and 8 colour unit printing machines to combine different orders in one production run. All the printing companies use computer-to-plate equipment for plate making and for automated digital operation of offset (sheet and web) and flexography presses.

#### Publication gravure

Publication gravure disappeared in 2019 in The Netherlands in web printing of magazines or other publication.

#### Packaging gravure

Packaging gravure is still in production but slowly replaced by flexography.

#### Flexography

In the Netherlands, flexography has a strong position in packaging. These are large presses with 10 printing units and completely automated. Most of the presses are sleeve printing. Behind the presses are fixed robotic arms in production lines like the automotive production industry.

#### Large format

The small sized printing companies (less than 20 staff) have small or medium size format presses. The medium sized and larger printing companies have more and more large format presses. Large format presses offer the possibility to combine different production orders to one press production run. It makes production cheaper and faster. In doing this, the modern printing company has a much larger production capacity than small sized print companies. That's why their prices are lower than in small sized companies.

## 5.7 The Netherlands

### Cross media services

For already 20 years, a growing amount of printing companies were offering more and more new media services like database management and website building. There is however a very strong competition with specialised IT, design and communication companies offering the same services. The large publishing companies have specialised social media and web-based publishing departments of their own. So, it is not an easy way to make more money to compensate the reduction of print.

In 2020, most printing companies still experience digitalisation as an ongoing threat for their business because the total amount of print is declining every year. Their strategy is first of all oriented to more efficiency in printing production process and not in developing more digital media business.

Coding and print-to-web are techniques most companies can offer, creating and hosting websites much less. That is because of competition with designing, communication and IT companies. Mobile apps and mobile marketing are emerging techniques and services, also under strong competition with design and IT companies.

In 2022, there was a growing number of successful printing companies doing business almost only by web-to-print ordering systems. They were collecting a large amount of small digital print runs for low prices. For a part, they created a new market for small runs and cheap printed products.

### Trends in the employment market

Employment is shrinking in 2022, but in a slower rate than before (see figure). The main reason for this is the wage support measures during the Covid-19 period. In the Netherlands, there were 8 periods of wage support from April 2020 to April 2022 (see figure). In 24 months, the support was € 22.768 Million. About 70% of printing companies received one or more periods of wage support. Companies have to pay back a part of the received wage support if their income of the year was too high. That is also the case for some of the printing companies. That's why it is hard to say what is the final economic impact on the printing companies.

Due to the contraction in employment and later retirement at 66 years and 10 months in 2022, the employment in the printing industry is aging. The graph shows the age structure in 2022 compared to 2010 and 2000. The graph shows declining numbers of younger workers and rising number of older workers. The consequences of aging are slowing down innovations, and increasing physical problems with shifts and night shifts, long-term absenteeism and incapacity for work due to physical workload. More short runs in production cause an increase in workload.

The unemployment rate in The Netherlands is measured by dividing the number of unemployment benefits by the number of employees. In the beginning of 2022, the unemployment rate in The Netherlands was 2,4% and at the end of 2022 it was 2,1%. The unemployment rate for the printing industry was at the beginning of 2022 4,4%, and at the end 3,1% (see figure). So, the unemployment rate in the printing industry is falling very fast during the past years. In 2009, the employers' organization and trade unions have established a mobility agency (Centre for Creative Careers; C3works!). This mobility agency organizes career support and training for unemployed printers and other unemployed graphic personnel direct at the start of unemployment, while unemployment agencies of the government only start after 6 months of unemployment. The government has changed the unemployment benefit period step by step from 38 month to 24 months. At the same time, the government has changed the year of retirement in steps of 3 months to 67 in 2024, and 67 years and 3 months in 2028. The age of retirement is coupled on the average life expectancy age of the whole population. In 2021, the government introduced a solution for those employees who are working in physically demanding occupations. The government asked employers organisations and labour unions to make branch arrangements about a system of flexible retirement in combination with a system where employees have more personal options with variation in level and age of pensions. The Dutch printing industry has introduced an early retirement regulation for printing and finishing professions, and a branch funding to pay for early retirement benefits.

### Employment printing industry

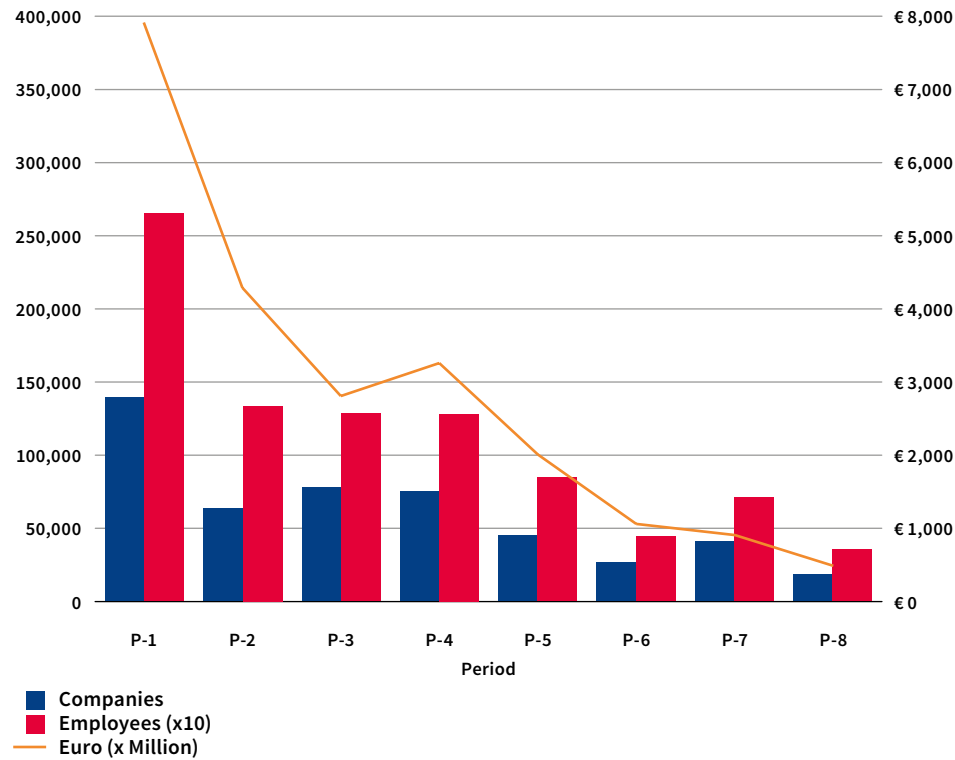
Year	Employees	Self-employed and entrepreneurs	Total employment
2010	29,800	3,835	33,635
2011	28,100	3,715	31,815
2012	26,100	3,730	29,830
2013	24,800	3,595	28,395
2014	22,900	3,485	26,385
2015	20,700	3,320	24,020
2016	19,500	3,235	22,735
2017	19,400	3,195	22,595
2018	18,100	3,080	21,180
2019	17,300	2,970	20,270
2020	16,300	2,885	19,185
2021	15,100	2,755	17,855
2022*	15,000	2,660	17,660

Source: GOC Research analysis of CBS data

\* preliminary data

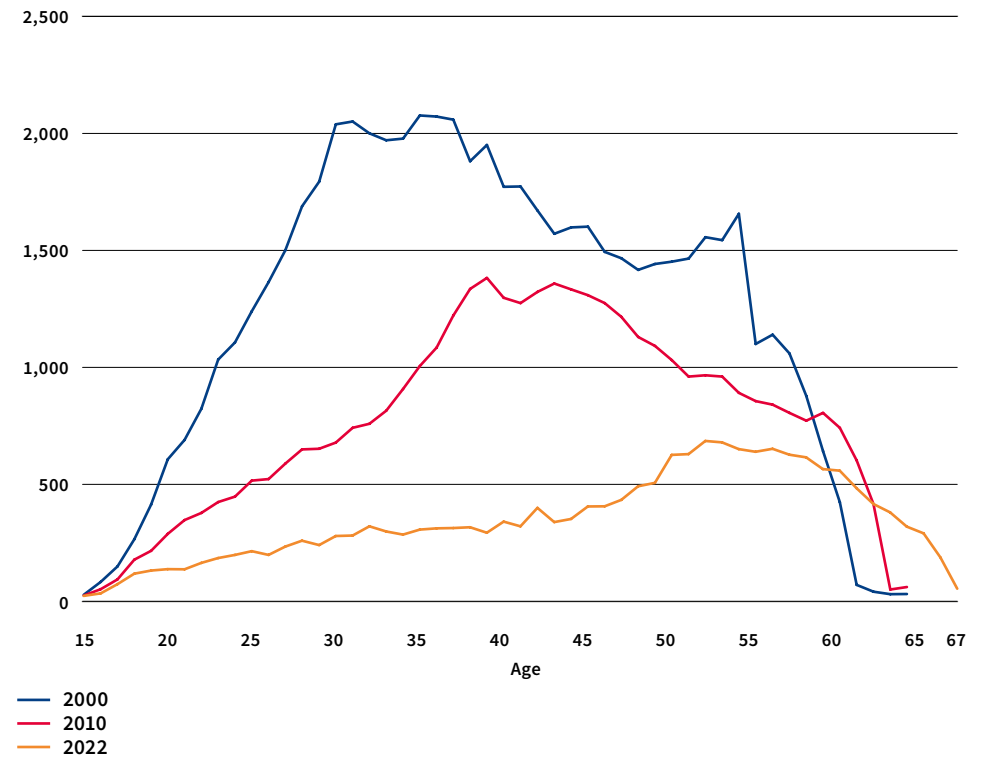
## 5.7 The Netherlands

Wage support Covid-19 period: Emergency measures bridging employment in The Netherlands  
8 Periods from 6 April 2020 - 13 April 2022



Source: GOC Research analysis of UWV data

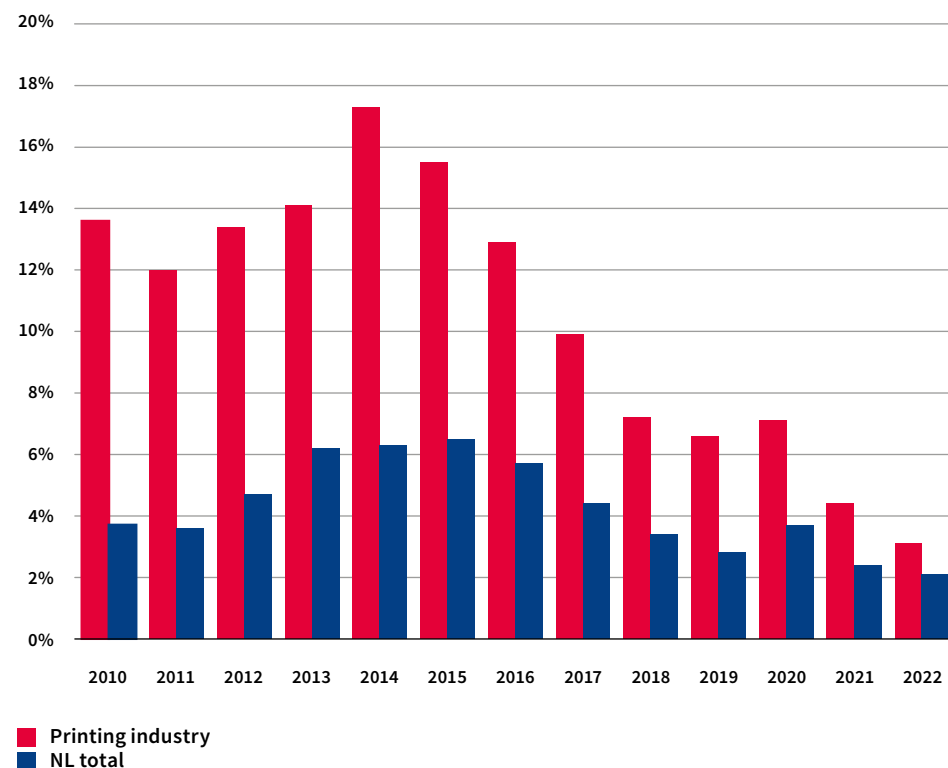
Workers are aging in the printing industry  
In 2022 pension age is 66 years and 7 month, in 2024 67 years



Source: GOC Research analysis of ASF data

## 5.7 The Netherlands

*Unemployment rates in the printing industry and NL total*



Source: GOC Research analysis of UWV data

In the training market, there was a strong shift to alternative training programs for a career move to other professions outside the printing industry. In 2022, it is still very difficult for employers to find qualified personnel. The numbers of students in printing professions in the regular vocational education schools is very low and by far not enough to compensate the numbers of retiring print staff (see table). The branch training centre GOC started in 2017 a dual training program for printing and finishing. In the last five years, the number of staff on temporary work contracts has increased. The Dutch government is preparing legislation to sharply reduce the number of flexible contracts.

In 2022, a large number of staff left the printing industry and entered the industry (see figure). The consequences of the great flows of people leaving and entering the companies translates into the need for ongoing training of entering staff. Often this training is given on the job by qualified workers.

*Total number of students in printing professional education schools*

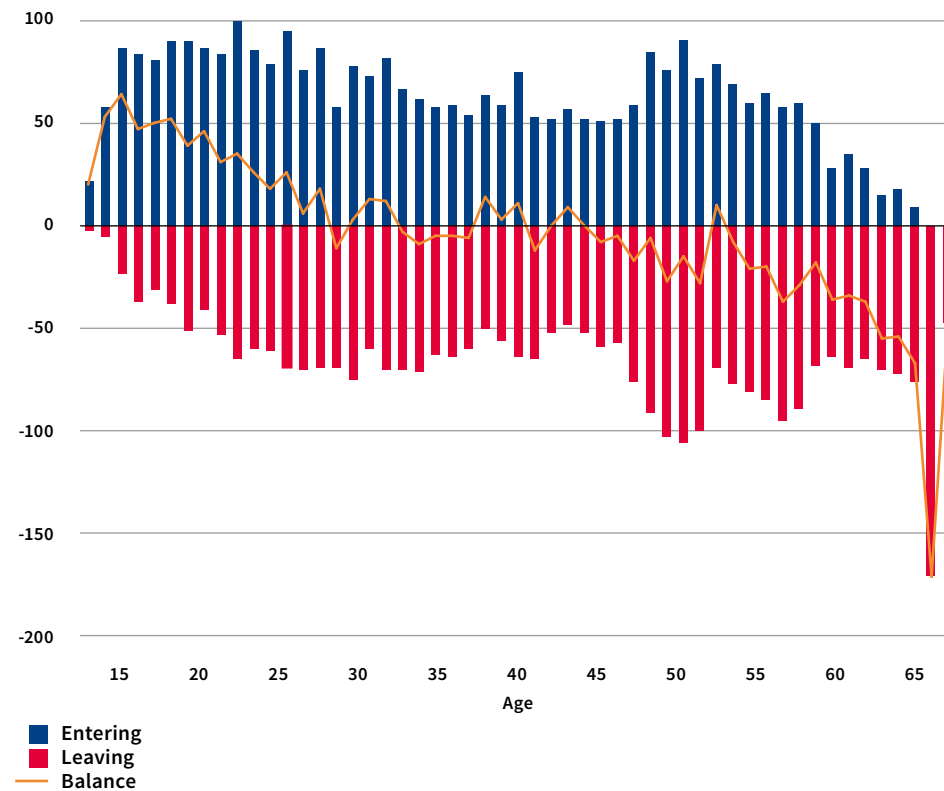
Profession	EQF Level	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Graphic design	4	11,271	10,834	10,668	10,541	9,912	9,641
DTP	2	317	391	303	401	399	403
DTP	3	1,049	1,049	852	831	741	715
DTP	total	1,366	1,440	1,155	1,232	1,140	1,118
Printing and finishing	2	23	24	10	9	14	12
Printing and finishing	3	14	3	0	0	1	2
Printing and finishing	total	37	27	10	9	15	14
<b>Total students</b>	2-4	12,674	12,301	11,833	11,782	11,067	10,773

Source: GOC Research analysis of DUO data



## 5.7 The Netherlands

Number of staff entering and leaving the print industry in 2022



Source: GOC Research analysis of ASF data

### Trends in the number of operating companies

The number of total companies is shrinking already for 25 years. The number of one-person companies (self-employed without personnel) is more stable but is also shrinking in recent Covid-years. The number of small companies (2-9 staff) was falling sharply, but was stable in 2022. The number of larger companies is also stable in 2020 (see table).

Companies and self employed (31 december)

Year	Self-employed 1 person	Small companies 2-9 staff	Small medium-sized 10-49 staff	Large medium-sized 50-99 staff	Large companies 100+ staff	Total
2015	1,705	1,135	315	40	20	3,215
2016	1,735	1,090	295	40	20	3,180
2017	1,710	1,025	285	40	15	3,075
2018	1,690	960	265	35	15	2,965
2019	1,570	995	265	35	15	2,880
2020	1,510	950	245	30	15	2,750
2021	1,540	945	230	25	20	2,760
2022	1,485	900	230	25	20	2,660

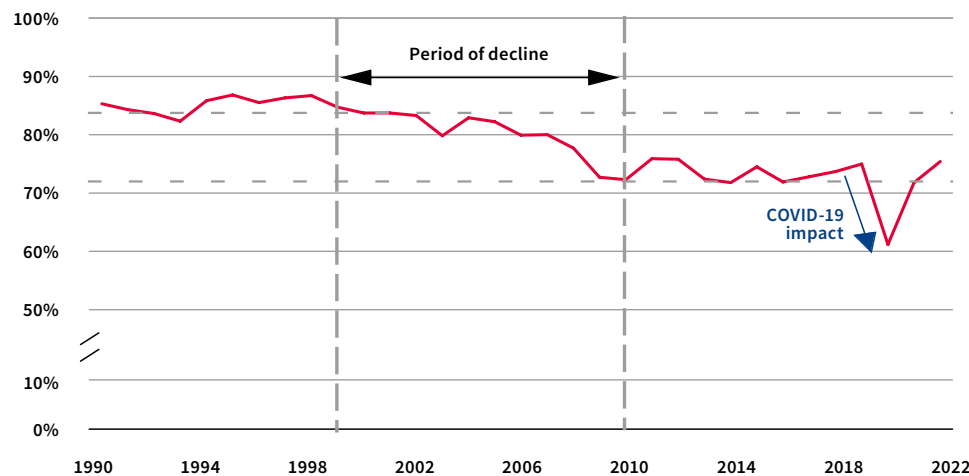
Source: GOC Research analysis of CBS data

## 5.7 The Netherlands

There are three main reasons to declare the long term and structural decline of companies and employment in the printing industry in The Netherlands. First of all, the ongoing change of communication and distribution of information from paper to internet and social media devices is one. Expenditures in advertising follows that trend. It even happened to other older media distribution systems like broadcasting and radio. But the second main reason is the strong productivity growth in production technology in the printing process - first of all, in the prepress, then in the printing process and now also in the binding and finishing process. Less employees are needed in the production process to get the work done. The figure shows the decline of the production utilisation between 1998 and 2010 as a result of the growing production capacity despite of the ongoing shrinking of the number of companies and employees. The third reason is the consequences of the climate policy that changes the attitude of the population about the use of printed paper as an important source of the distribution of information. COVID-19 impact on production utilisation in 2020 and 2021 was temporary. In 2022, the level of production utilisation was back to the pre-COVID-19 levels.

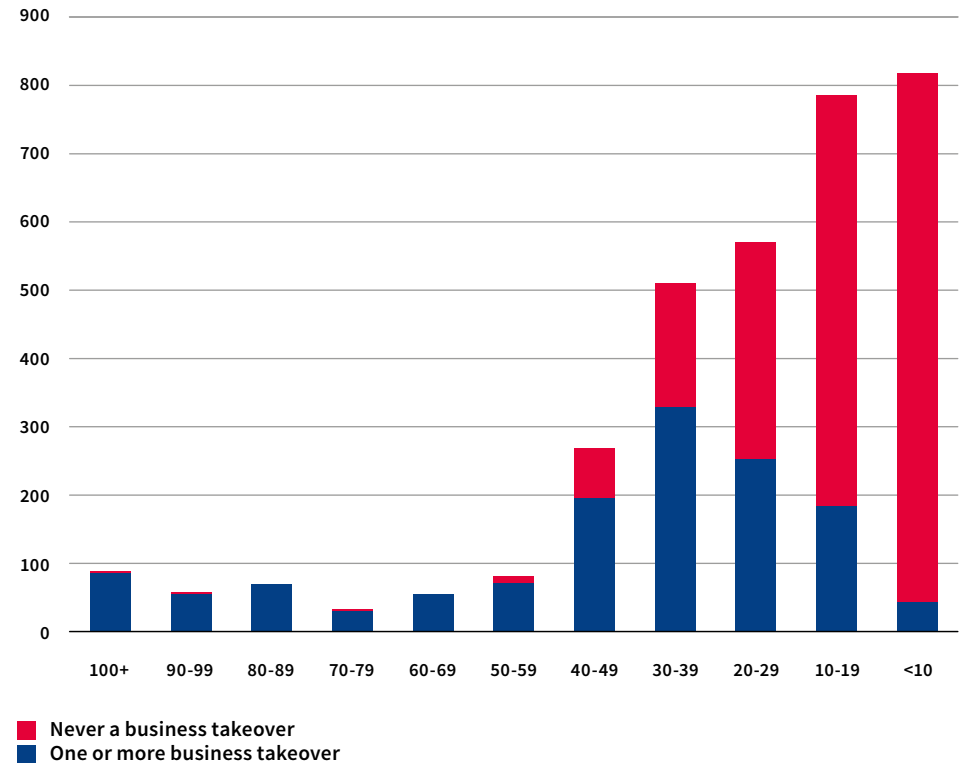
The printing industry has a large share of older companies. The graph shows the age class of companies from their founding year, divided by companies with and without a business takeover. 12% of all companies, including self-employed persons, are older than 50 years, and 88 companies are older than 100 years.

### Production utilization in the printing industry fell down to a structurally lower level



Source: GOC Research analysis of CBS data

### Dutch printing industry, companies by age of business (founding year), in 2020



Source: GOC Research analysis of CBS data

The number of bankruptcies was 6,3% at the beginning of the economic crisis in 2009 but was less every year, with the exception of 2017. In 2017, there was an increase from 1.7% in 2016 to 2.4%. In 2018, the number of bankruptcies was low with 1.5% of total companies (with staff), and in 2019 even lower (1.4%). In 2020, the number of bankruptcies linked to the COVID-19 crisis was very limited with an increase of 0.1% to 1.5%. In 2021, the number of bankruptcies was extremely low (0,3%). The number in 2022 was slightly higher. The reason was the support from the government on labour and fixed operating costs for companies during the COVID-19 period.

## 5.7 The Netherlands

### Bankruptcies (excl. self-employed)

Year	Companies	Share of bankruptcies
2015	58	3.5%
2016	26	1.7%
2017	34	2.4%
2018	20	1.5%
2019	18	1.4%
2020	19	1.5%
2021	4	0.3%
2022	7	0.6%

Source: GOC Research analysis of CBS data

### Trends in foreign trade

In 2019, import and export data were growing strongly and shrinking from outside-EU countries. Export is split up between export of print products made in The Netherlands and transit export. The NL-made export was in 2019 exceptionally high. A large amount of export is transit to other EU countries. All import and export data are very low in 2020 because of the COVID-19 crisis. In 2021, import and export were higher than in 2020, but not at the same level as in 2019. The NL-made export from The Netherlands to the EU in 2021 was higher than in 2019, the transit export from The Netherlands to the EU was almost the same as in 2019. Export to outside the EU was high in 2020 but low in 2021.

### Import and export printed products inside EU and outside EU (x 1.000 Euro)

Year	Import to NL			Export from NL			Total
	EU	Outside-EU	Total	EU NL-made	EU Transit	Outside EU NL-made	
2015	695,373	183,632	879,005	740,818	249,580	164,494	1,154,892
2016	697,427	194,530	891,957	714,691	344,111	163,636	1,222,438
2017	711,358	203,436	914,794	862,546	307,801	175,754	1,346,101
2018	750,980	188,378	939,358	750,165	321,499	179,728	1,251,393
2019	784,206	181,735	965,940	1,070,029	385,793	167,429	1,623,253
2020	557,362	236,674	794,035	984,508	295,737	236,899	1,517,146
2021	743,778	188,387	932,165	1,155,921	385,307	77,174	1,618,402
2022	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: GOC Research analysis of CBS data

n.a.: data not yet available

## 5.7 The Netherlands

Country data of import and export in 2021 was not yet available. The most important countries for import and export of printed products are Germany, Belgium and the United Kingdom. France is also an important country for the Dutch export of printed products but less important for import. In the last ten years (2010-2021), import and export of print from and to the UK reduced strongly. Import from and export to Germany was shrinking somewhat in the past ten years. The export to Belgium grew in ten years strongly and import remained stable. So, Belgium is very important for The Dutch printing industry. Trade with the US was stable in the last ten years. China counts in 2021 for 8% in total import of printed products to The Netherlands, so not very large compared to our neighbouring countries.

### Top export and import countries for printed products in 2021

Countries	Import to NL from country		Export from NL to country	
	Share of total import	Growth 2010-2021	Share of total export	Growth 2010-2021
België	21,6%	=	44,3%	++
China	8,0%	=	0,4%	=
Denemarken	0,9%	=	1,8%	=
Duitsland	23,2%	-	12,6%	-
Frankrijk	2,6%	=	9,3%	=
Hongarije	0,7%	=	0,3%	=
Italië	2,2%	=	2,1%	=
Oostenrijk	1,1%	=	0,8%	=
Polen	3,9%	+	1,5%	=
Spanje	0,9%	=	1,9%	=
Tsjechië	1,7%	=	0,5%	=
Verenigd Koninkrijk	10,5%	--	7,5%	--
VS	7,4%	=	1,3%	=
Zweden	0,6%	=	1,2%	-
Zwitserland	1,2%	=	1,3%	=

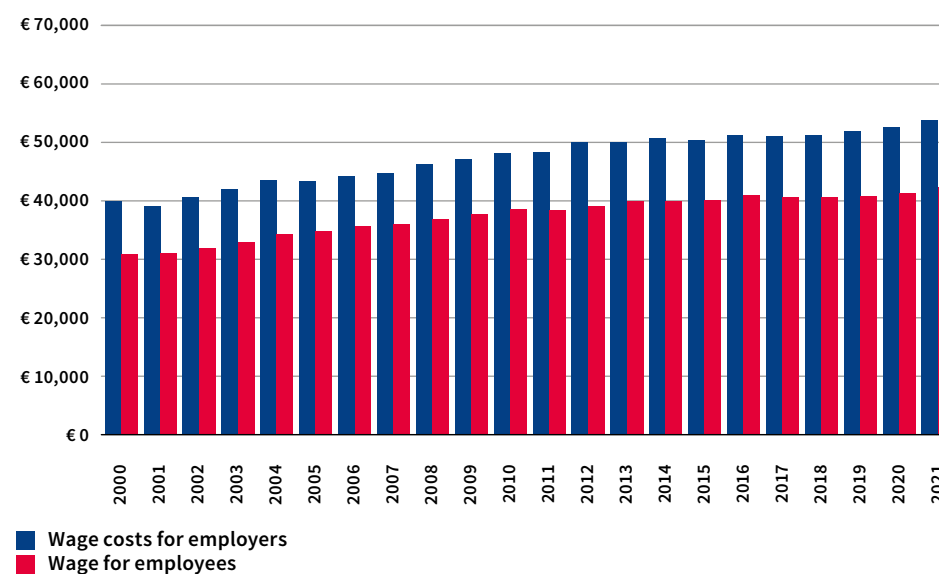
Source: GOC Research analysis of CBS data

### Trends in labour costs

In the Dutch printing industry, the total gross wage costs, including social premiums and wage tax, represent 27.6% of the net turnover in value. The graph shows the progress in average gross wage costs per working year (fte) in the printing industry. That means that the total costs for an average employee in the printing industry in 2021 is € 53.800 for the employer. The average employee, working fulltime and includes shift work allowance, received in 2021 a gross wage of € 42.400.

The government raised the minimum wage and old-age pensions on 1 January 2023 with 10% and the graphic pension fund raised the pensions by 7%. The collective bargaining in 2021 between the employers' organisation and labour unions in the printing industry ended in an agreement about a step by step increase of wages of 6,5% in a period of 27 months, starting 1 January 2022 until 1 April 2024. To compensate for the high inflation, the largest union in The Netherlands FNV is demanding in all sectors a collective wage increase of 14.3% in 2023.

### Average gross wage costs per working year (fte) in the printing industry Wage costs for the employers and wage of employees



Source: GOC Research analysis of CBS data

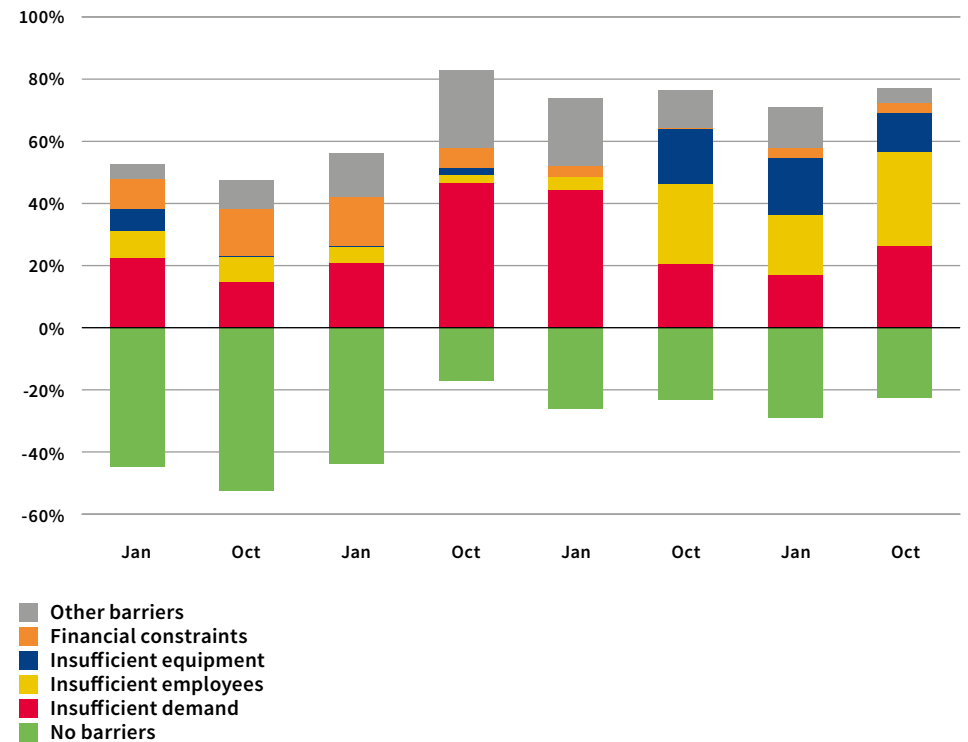
## 5.7 The Netherlands

### Developments affecting competitiveness

In 2022, there are seven main trends with uncertain effects for the graphic industry in the (near) future:

1. The consequences of high inflation on the demand for printed products on the local market and the export market;
2. The long-term consequences of Brexit for the import and export of printed products. The UK is the third in importance for foreign trade for the Dutch printing industry;
3. The cost effects of the energy transition and climate measures by the government. Energy costs will go up for the energy intensive paper industry and thus for the paper prices, but all energy prices are going up strongly for all the printing companies. Also, the climate measures by the government will increase costs for the printing industry;
4. The changeover in packaging materials from printing on many plastics to printing more and more on paper packaging. Print companies have to invest in new production equipment. On the other hand, some throw-away-products will be banned, like plastic and paper drink cups;
5. The consequences of major legislation (national and local) for reducing environmental pollution and waste of raw materials from printed products. The introduction of a national digital mail-system for free advertising papers will reduce paper advertising with about probably 50%;
6. The consequences of ongoing automation and robotisation in production. The rise of the fully automated printing company will reduce employment.
7. The barriers for printing companies to attract young people from an increasingly tight labour market (see figure).

### Production barriers for printing companies



Source: GOC Research analysis of CBS data

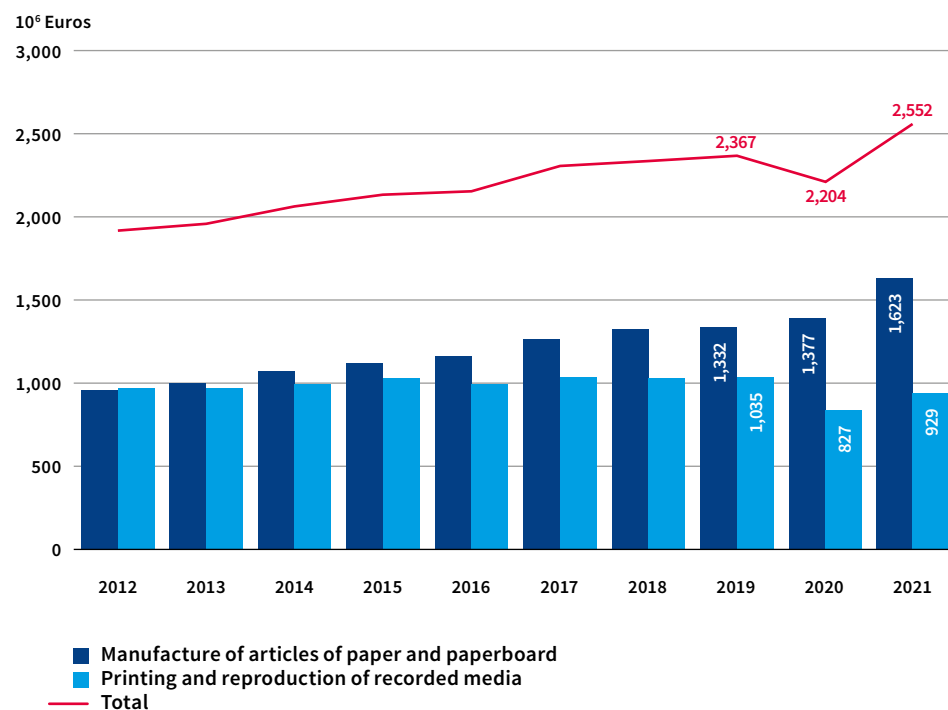
## 5.8 Portugal

### 2022 turnover

Turnover in 2021 shows the start of a recovery path after the pandemic, with an increase of more than 15.8% for the manufacture of paper products and printing industry as a whole. This increase was, however, more expressive in the manufacture of paper products sector, having reached a growth of 17.8% (12.3% in the printing and reproduction of recorded media sector).

However, the economic cost of the war, which is hitting Europe hard, can be expected to negatively influence this recovery and growth trajectory in the coming years.

#### Printing industry annual turnover



Source: INE (Portuguese National Statistical Institute – <http://www.ine.pt>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

The invasion of Ukraine by the Russian Federation continues to be a source of uncertainty, and the conflict may escalate, translating into new shocks on the supply and prices of raw materials and negatively affecting the activity and confidence of agents.

Although the Portuguese economy is one of the least affected at European level by the conflict between Ukraine and Russia, many Portuguese companies suffer from its effects on the global economy, with increased costs and rising inflation, difficulty in access to raw materials and instability in financial markets being the main consequences.

The energy crisis - on top of the effects of the pandemic and rising paper prices - has left many printing companies in a critical situation, which could have serious repercussions for the supply of printed products to all markets.

#### Trends in specific market segments

Among the trends observed is the increasing use of paper in packaging products. If at first the consumption of paper in packaging was exacerbated by the pandemic, currently there seem to be more profound changes in consumption patterns. Growing environmental awareness is resulting in an increased demand for packaging materials that are more sustainable. The significant recycling rate of paper and board is one factor that has contributed to the popularity of these materials in many industries, also benefiting from the support of European policies to phase out plastic packaging.

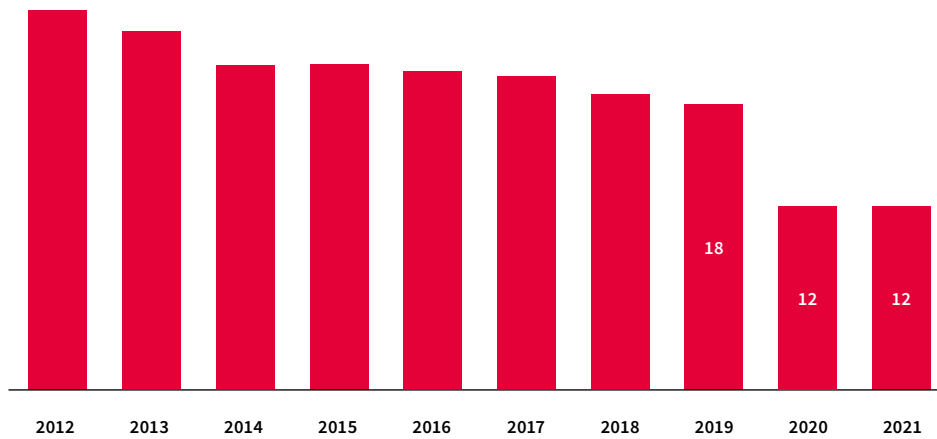
#### Trends in specific market segments

Books	▼	Proxy: Book Publishing
Magazines	-	Proxy: Magazines Publishing
Newspapers	-	-
Direct mail	▲	Proxy: Advertising
Other commercial printing	•	No data available
Printed packaging	▲	Proxy: Paper packaging

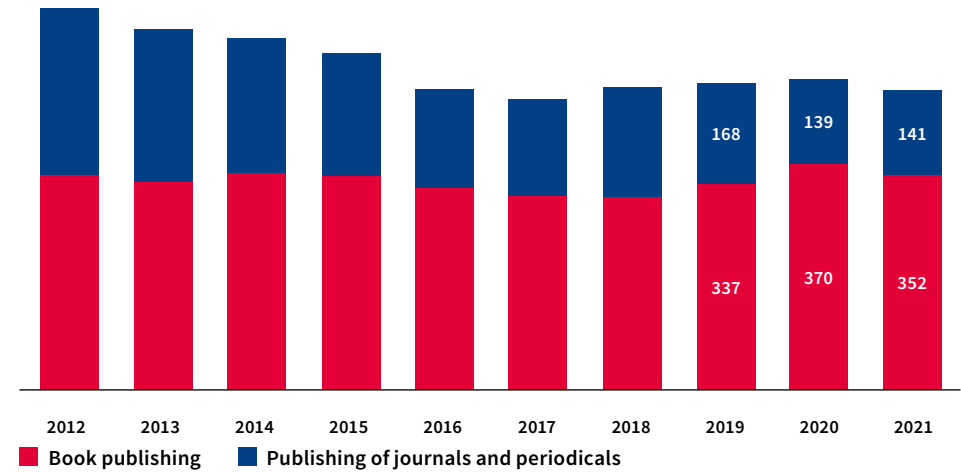
## 5.8 Portugal

Source: INE (Portuguese National Statistical Institute - <http://www.ine.pt>), NACE Rev. 2: 18.11 – Printing of newspapers; 17.21 – Manufacture of corrugated paper and paperboard and of containers of paper and paperboard; 58.11 – Book Publishing; 58.14 – Publishing of journals and periodicals; 73.1 – Advertising

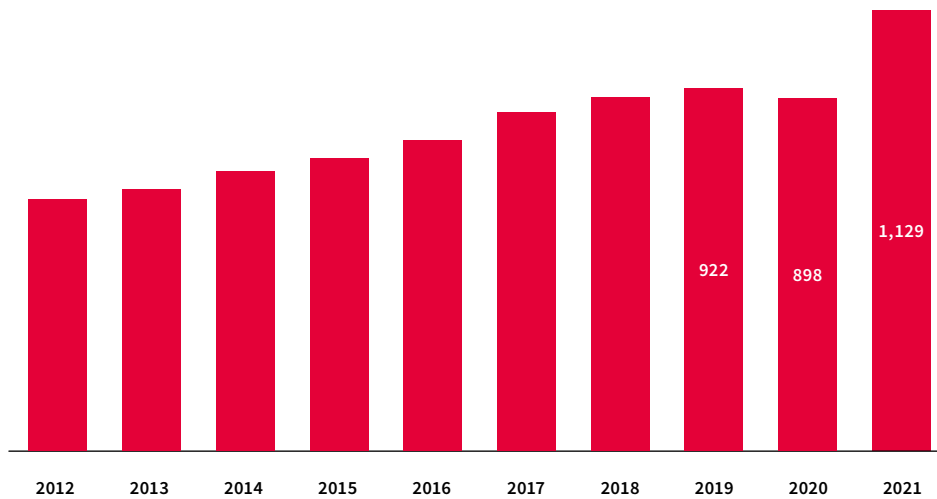
Newspapers printing annual turnover (10<sup>6</sup> Euros)



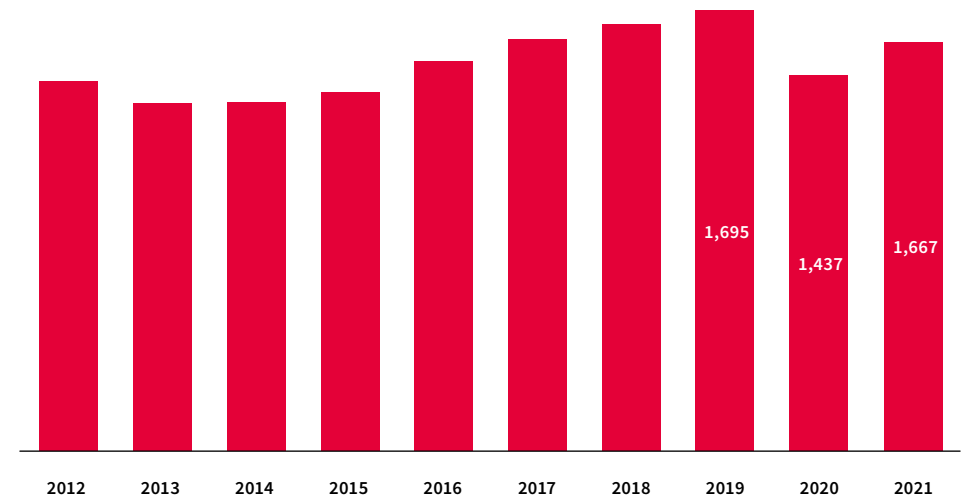
Book, journals and periodicals publishing annual turnover (10<sup>6</sup> Euros)



Paper packaging annual turnover (10<sup>6</sup> Euros)



Advertising (10<sup>6</sup> Euros)



## 5.8 Portugal

### Trends in printing process

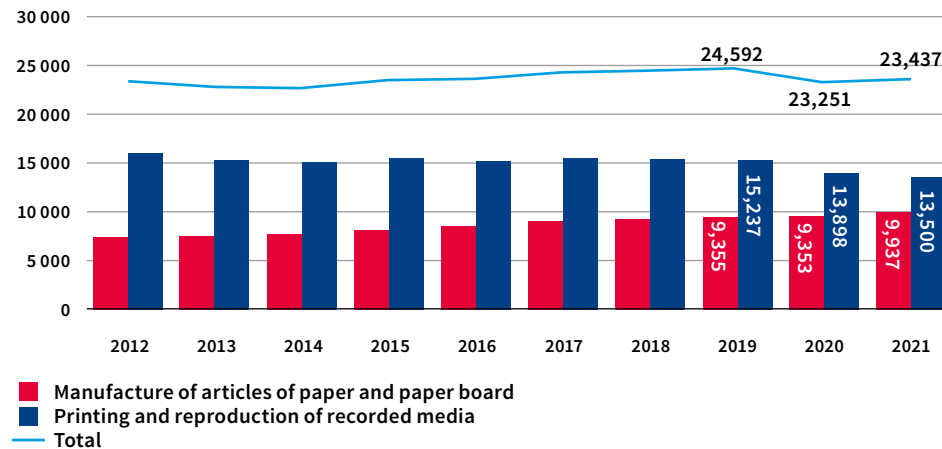
Based on qualitative analysis, we see that digital printing continues to grow, driven by technology and changes in the market, where large print runs will be increasingly rare. The demand for customised products, made according to the specific needs of each client, will be increasingly greater, in all sectors, and where in fact digital printing can make a difference.

Digital printing	▲
Weboffset	▼
Sheetfed offset	▼
Publication gravure	▼
Packaging gravure	▲
Flexography	▼
Large format	—

### Trends in the employment market

The number of employees in companies in the printing industry as a whole fell slightly in 2021, by about 0.3% year-on-year.

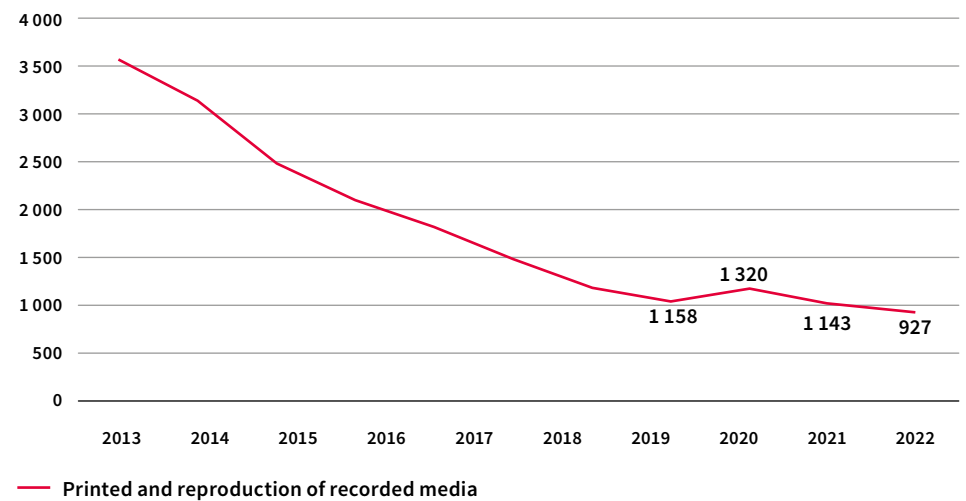
#### Persons employed in the printing industry



Source: INE (Portuguese National Statistical Institute - <http://www.ine.pt>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

In relation to registered unemployment originating from companies in the printing and reproduction of recorded media sector, it should be noted the strong decrease of this value observed in the years 2021 and 2022, -13.4% and -18.9% respectively (data referring to 31 December of each year).

### Registered unemployment (N°)



Source: INE (Portuguese National Statistical Institute - <http://www.ine.pt>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media



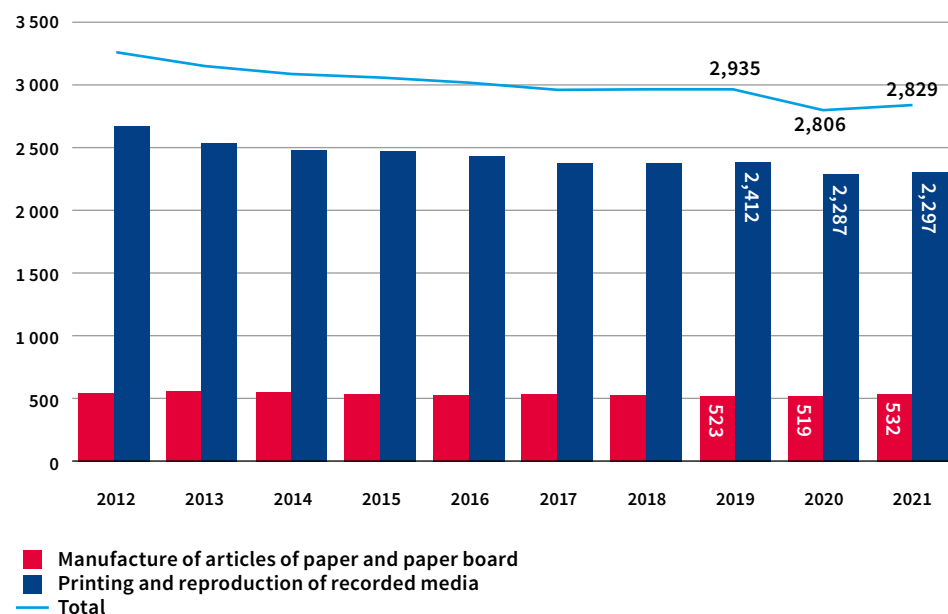
## 5.8 Portugal

### Trends in the number of operating companies

In 2021, there were 2 829 registered companies (considering the manufacture of paper products and the printing and reproduction of recorded media), 23 more units than in 2020, which may indicate the beginning of a negative trend reversal. Both sectors register an increase in the number of companies, but the growth is more expressive in the production of paper articles.

The available data on company demographics confirms a positive trend in both the death rate and the birth rate.

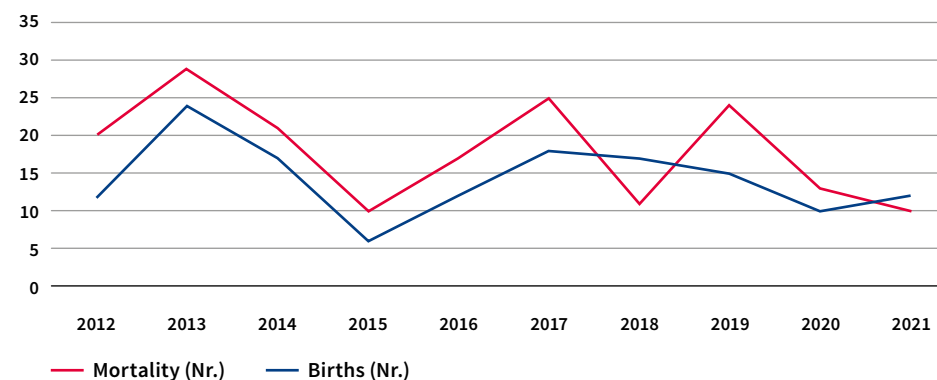
#### Printing industry companies



Source: INE (Portuguese National Statistical Institute – <http://www.ine.pt>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

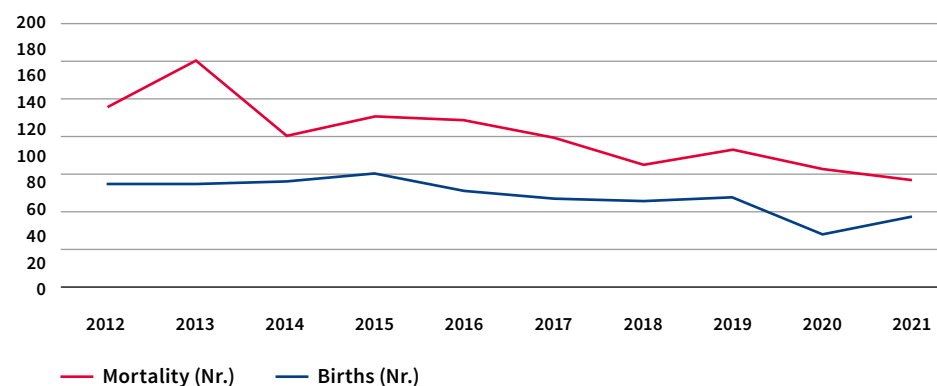
### Trends in Business Demography

#### Manufacture of articles of paper and paper board



Source: BP (Bank of Portugal – <https://www.bportugal.pt/>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

#### Printing and reproduction of recorded media



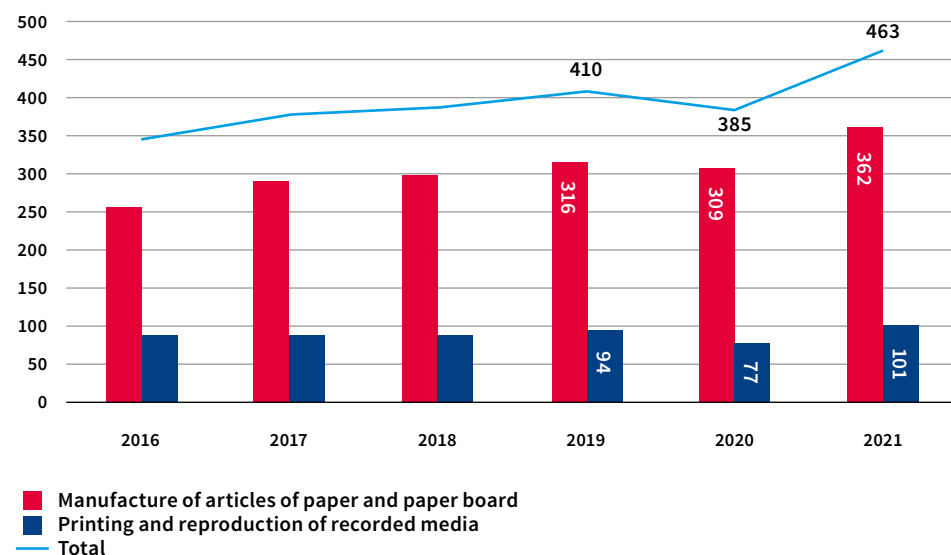
Source: BP (Bank of Portugal – <https://www.bportugal.pt/>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

## 5.8 Portugal

### Trends in foreign trade

Printing industry exports reached an overall value of €463 million in 2021, which represents an impressive increase of just over 20%, compared to 2020. This increase is more expressive in the printing and reproduction of recorded media sector, where it exceeded 30%.

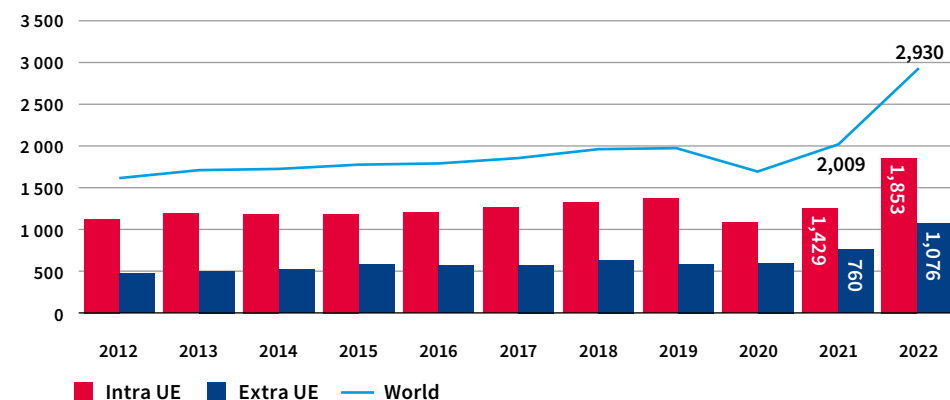
#### Printing industry annual exports (10<sup>6</sup> Euros)



Source: BP (Bank of Portugal – <https://www.bportugal.pt/>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

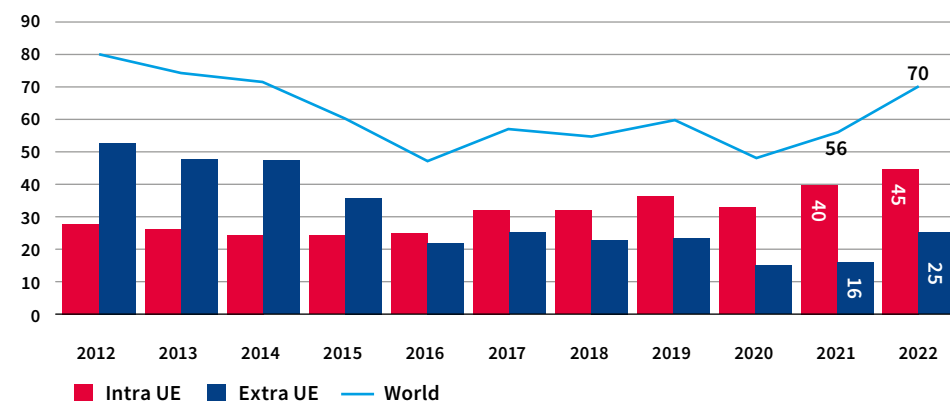
Exports of paper products and printed products (NC8 48 and 49), not only from companies in the printing industry but also from other economic sectors, reached an overall value of €3 000 million in 2022. The total volume of exports thus represents a strong increase of 45.8% compared to the previous year, with pre-pandemic export levels having been clearly surpassed.

### Exports – paper and paperboard; articles of paperpulp, of paper or of paperboard



Source: INE (Portuguese National Statistical Institute - <http://www.ine.pt>), NC8 48 – Paper and paperboard; articles of paper pulp, of paper or of paperboard, NC8 49 – Printed books, newspapers, pictures and other products of the printing industry

### Exports – printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans



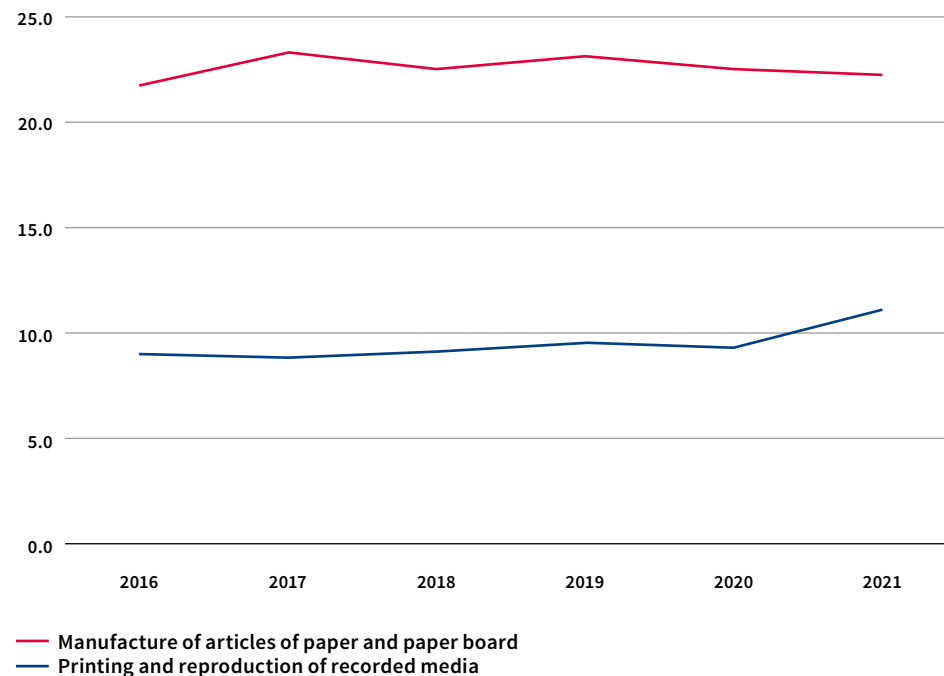
Source: INE (Portuguese National Statistical Institute - <http://www.ine.pt>), NC8 48 – Paper and paperboard; articles of paper pulp, of paper or of paperboard, NC8 49 – Printed books, newspapers, pictures and other products of the printing industry

## 5.8 Portugal

Globally, exports of these products are still mostly oriented towards European markets, i.e. around two thirds of their total value. This conclusion is valid for both paper and printed products.

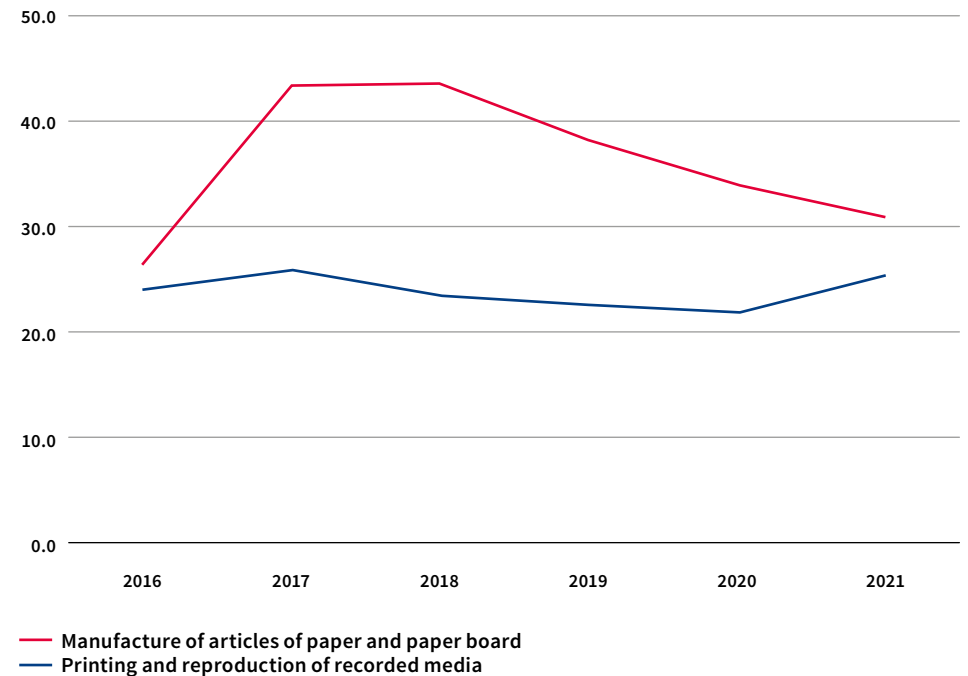
The weight of foreign markets in the sales and purchases of companies in the printing industry registered in 2021 movements in opposite directions, depending on whether they are in the paper production or printing sectors. In the first case there was a decrease of -0.2 and -2.9 percentage points and in the second case an increase of 1.7 and 3.6 percentage points in the weight of exports and imports, respectively.

### Weight of external markets – Exports (%)



**Source:** BP (Bank of Portugal – <https://www.bportugal.pt/>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

### Weight of external markets – Exports (%)



**Source:** BP (Bank of Portugal – <https://www.bportugal.pt/>), NACE Rev. 2: 17.2 – Manufacture of articles of paper and paperboard; 18 – Printing and reproduction of recorded media

Spain was the main competitor of the Portuguese printing industry in 2022. This country was the main source of imports of paper products (NC8 48) and of the printed products (NC8 49), representing almost 60% (59.1%) of the total annual import value.

## 5.8 Portugal

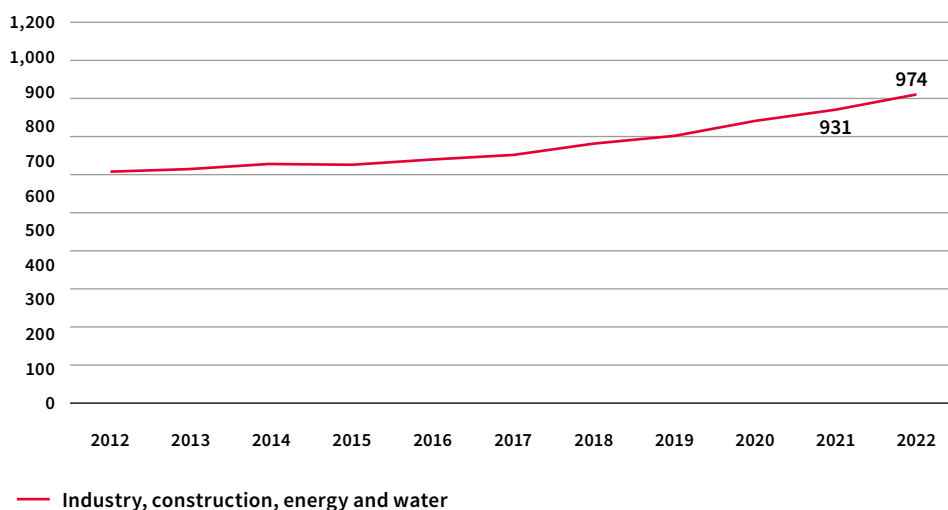
### Trends in labour costs

Labour costs maintain an upward trend, although the average monthly net salary still remains below €1 000 per month. An average net monthly salary of 974 euros was reached in 2022, representing an increase of 4.6% compared to the previous period.

The most recent projections of the Bank of Portugal point to a growth of the nominal wages per worker in the private sector by 7.1% in 2023 and by an average of 5% in 2024-25. These projections incorporate the evolution of the minimum wage announced by the Government (7.8% in 2023, 6.6% in 2024 and 5.6% in 2025).

The projected labour market evolution reflects a continued high inflation and efforts to minimise the shock to purchasing power. In real terms, wages per employee in the private sector are projected to increase by 1.3% in 2023. In 2024-25, the expected decline in inflation should lead to a reduction in wage pressures.

### Net monthly wages



Source: INE (Portuguese National Statistical Institute - <http://www.ine.pt>)

### Developments affecting competitiveness

The continued conflict in Ukraine and the risk of this conflict escalating or extending over time continues to strongly affect the economy and its uncertain nature entails added difficulty in the recovery trajectory from the pandemic period.

Since the end of 2022, there has been a reduction in the costs of energy commodities, contributing to an improvement in the situation of the economy and a reduction in external pressures on consumer prices. In the coming quarters, the decline in inflation will essentially rely on energy and food price developments, but their magnitude is uncertain. The moderation in the increase of prices of other goods and services will be slower, due to the lagged effects of energy prices, the recovery of profit margins and wage growth. The persistence of strong price increases in the euro area, particularly in the components with less volatile prices, has implied a tighter monetary policy with higher interest rates.

The outlook for global activity and trade improves in 2023-25, but growth remains below the pre-pandemic period. After resurfacing signs of weakness in late 2022, the global economy regains momentum in the near term as the effects of lower energy commodity prices, the reopening of China, less disruption in supply chains and rising confidence are felt.

The Bank of Portugal in its projections for the period 2023-2025 points to:

- > Portuguese economy is expected to grow by 1.8% in 2023 and 2% in 2024 and 2025;
- > Inflation is projected to stand at 5.5% in 2023, decreasing to 3.2% in 2024 and 2.1% in 2025;
- > Employment is expected to remain strong, against a background of projected gains in real average wages;
- > Unemployment rate is projected to increase to 7% in 2023, declining in the following years, to stand at 6.7% in 2025;
- > Investment is projected to grow by 2.3% in 2023, constrained by rising financing costs. In 2024-25, it is expected to accelerate to 4.7%, on average, continuing to benefit from EU funds, in particular those associated with the Recovery and Resilience Plan and the Partnership Agreement Portugal 2030;
- > Total exports are expected to outgrow foreign demand, 4.1% compared with 2.9% respectively, on average, in 2023-25, with buoyant exports of services standing out.

However, given geopolitical instability of uncertain magnitude and impact, there is a real risk of more adverse scenarios materialising at short-term.

## 5.9 Sweden

### 2022 turnover

The turnover increased in 2022 compared to 2021, ie +13 % among Grafiska members. The first half of the year registered a higher growth than the second half. Some of the growth can be explained by the increase in paper and energy prices which in turn have resulted in higher prices in the printing sector in Sweden.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

All of our paper consuming members were impacted by the supply deficit of last year, in particular label manufacturers with the strike in Finland.

Although printers could pass on the cost to the customers, it had a negative impact on the printed volumes. The concern now is that customers are getting used to lower volumes and even if the prices go down, the concern is that volumes do not return to pre-crisis level.

Higher energy and transport costs also had an impact on printing companies in Sweden.

In particular, businesses in the southern region saw their energy costs rise significantly.

### Trends in specific market segments

Books: book sales remained strong in 2022, although the figures did not reach the record year of 2021.

Magazines: In 2022, there has been a decrease compared to 2021.

Newspapers: Due to digitalisation, the total readership revenue from the web, apps and printed newspapers increased by 2% in 2022, compared to 2021.

Direct mail: The number of letters sent continues to decline and in 2022 a total of 1.35 billion letters were delivered. This was a decrease of 11% compared to the previous year.

Other commercial printing (catalogues, advertising...): declining.

Printed packaging: stable.

### Trends in printing process

Digital printing: Increasing

Weboffset: Increasing

Sheetfed offset: Increasing

Flexography: Increasing

Large format: Increasing

### Trends in the employment market

There is a shortage of workers in the printing industry in Sweden. Many companies experience problems finding offset-, screen- and digital printers.

### Trends in the number of operating companies

In 2022, the market was stable with a low number of bankruptcies. In 2022, there were a few mergers and company acquisitions, but not in the same frequency as a few years back.

### Trends in foreign trade

Sweden is exporting only small amounts of printed products. Sweden imports catalogues, books and magazines.

Large quantities of book printing has moved to the Baltic countries during the last decade. In the last years, there is also an increasing interest from Danish and German printers to expand in the Swedish market. Some large Danish printers have acquired facilities in Sweden.

### Trends in labour costs

During 2022, labour costs have increased by around 3%.

### Developments affecting competitiveness

New legislation regarding packaging and packaging waste may have a significant impact on companies. Legislation on labour migration with a wage base that may affect the ability to hire staff.

## 5.10 Switzerland

### 2022 turnover

The “post-covid” recovery of the Swiss printing industry came to a standstill in the course of the second half of 2022. Turnover fell by 1.9% in the fourth quarter of 2022.

Within the year, however, the increase in turnover in the last quarter of 2022 still amounted to 10.3%. This means that the turnover was not only higher than in the comparable quarters of 2020 and 2021, but also exceeded the turnover level of the fourth quarter of 2019. However, this is only after taking into account the price increases that have occurred in the meantime. If these are excluded, real demand for graphic products is around 10% lower than three years ago.

At the same time, the high price increases of the recent past are not sufficient to compensate for the even stronger increase in input costs for graphic products. The growth in sales is accompanied by margin losses in many places.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

Both sheetfed and web printers (coldset and heatset) are impacted by the increased input costs. A large proportion of the companies have managed to pass on paper price increases to customers, at least in part. This has only been achieved to a limited extent for energy prices. Costs vary greatly depending on local conditions. In addition, not all companies can or want to buy electricity on the free market. At the political level, the goal remains to prevent cyclical power cuts, e.g. at night.

### Trends in the employment market

Compared to 2019, and even more so to 2020 and 2022, the situation for employees in the printing industry has improved in Switzerland. The number of employees registered as unemployed in the printing industry was around 40% lower at the end of 2022 than it was at the end of 2019. Behind this development, which is positive in itself, there is a major limiting factor: the shortage of skilled workers that can be observed across all sectors. The latest figures from the viscom/p+c association indicate that the replacement demand for skilled workers cannot be covered by apprentices. The baby boomer effect is hitting hard in the Swiss printing industry.

### Trends in the number of operating companies

The number of workplaces continues to decline slightly. Various investors are on the move in Switzerland and continue to expand their groups. Thus, machine capacities are disappearing from the market.

### Trends in foreign trade

Global exports of graphic products have increased significantly in the course of 2022 and are again roughly in the range of exports as of mid-2019. Global imports peaked in the second quarter of 2019 and have since been subject to slight fluctuations but are generally declining.

## 5.11 United Kingdom

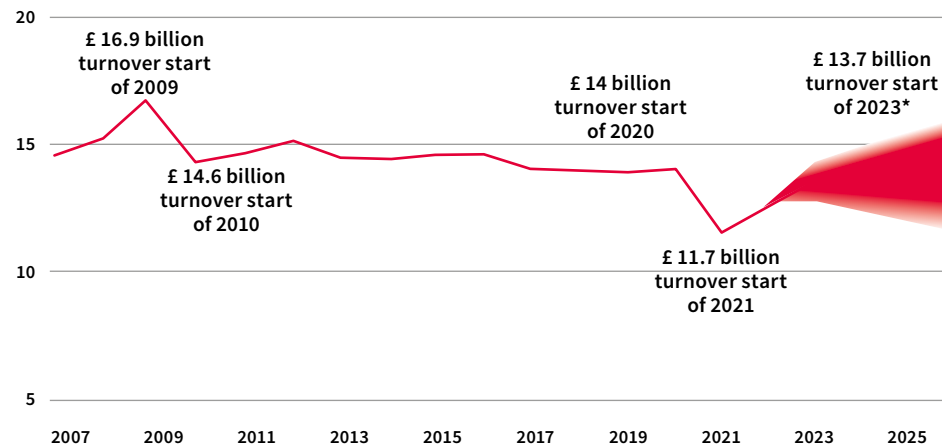
### 2022 turnover

Annual data shows that turnover for the UK print and printed packaging industry (including the carton, label, and paper stationery sectors) was severely affected by the impacts of Covid-19 and contracted by around 18% in 2020 (to approximately £11.7 billion). The printing industry suffered more than many other sectors; the UK economy contracted by 11% in 2020.

Data for 2021 suggests that the industry finished 2021 with a 7.7% recovery (just ahead of the UK's 7.6% economic growth), and an annual turnover of £12.6 billion. The printing industry has recovered stronger in 2022, to around £13.7 billion – representing annual growth of 9.4%, somewhat stronger than the UK's GDP growth of 4.1% in 2022.

Forecasts for 2023 are subject to heightened uncertainty as energy costs and other global inflationary and cost of living pressures work through the economy.

### Annual turnover - including cartons, labels and paper stationery



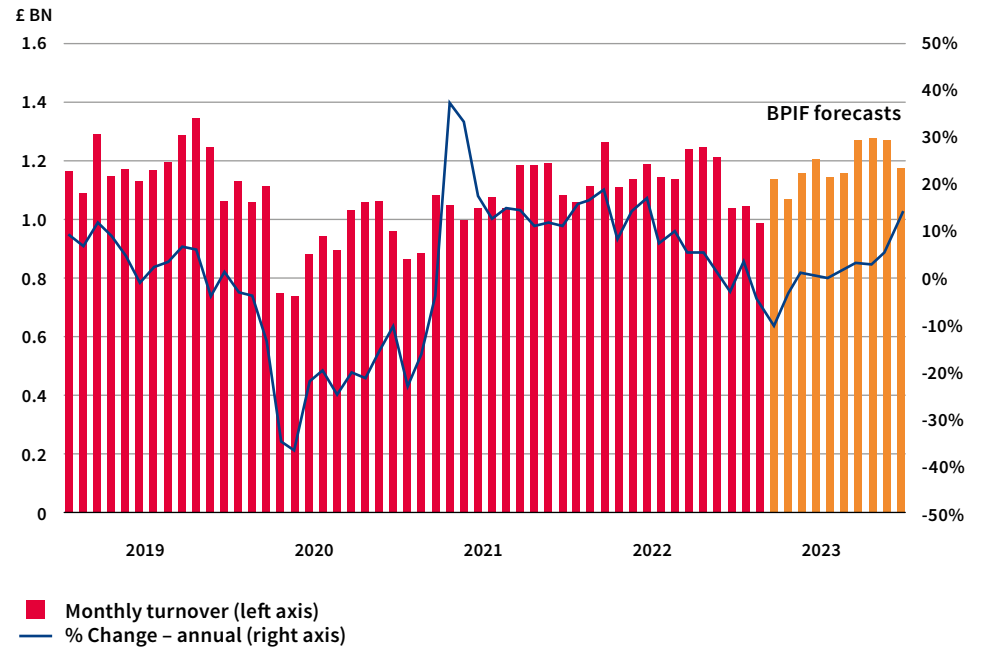
Source: BPIF

\*2020 – 2025 forecast estimates

Turning attention to the monthly turnover tracking for the industry, in particular the last 15 months or so, we see that a downturn in the face of 2021 Christmas holidays, and some Omicron-induced restrictions and isolations extended into January 2022 before growth returned in February and picked-up very strongly in March. In March industry turnover, at just under £1.3 billion, was 19.1% greater than March 2021, and 12.7% above the pre-Covid comparison to March 2020.

There was, unfortunately, a downturn in April but this was followed by a pick-up in May and stronger trading in June. However, a more pronounced than forecast deterioration led to reduced turnover figures in July and August. Stronger growth returned in September, with higher levels more-or-less maintained in October and November. Unfortunately, there has since been a drop-off in turnover. December, January, and February in particular, all reported disappointingly low levels of turnover. Data for March is expected to be better and, whilst April may be subdued, growth is forecast to be a little stronger in May and June.

### Monthly turnover - including cartons, labels and paper stationery



Source: BPIF analysis of ONS data

## 5.11 United Kingdom

As before, prospects for later in the year will still depend upon the UK navigating a smooth path through a period of continued high energy costs, stubborn inflation, and economic instability. Whilst there is no shortage of pressures for companies to deal with – inflation is still expected to come down as we progress further through 2023, and energy costs are expected to settle further.

### Print sectors most been impacted by the paper crisis and generally by raw materials, energy and transport costs' increase

Up until April 2022, substrate costs had been the number one ranked business concern for printing companies in the UK since July 2021. In April 2022, energy costs became the number one concern, and it has so far remained there. The comments below apply to April 2023.

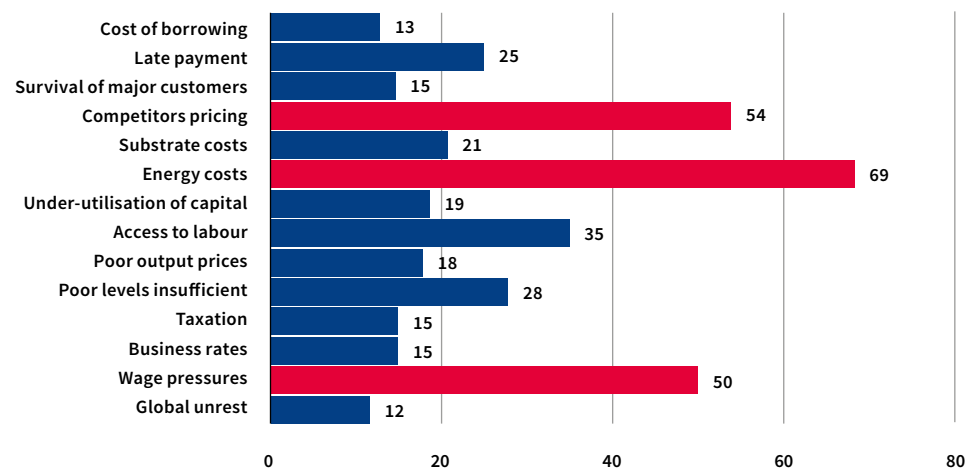
Energy costs remain the top business concern for printing companies, they have been the number one concern since April last year. Energy costs were selected by 68% of respondents, down from 75% in January, and 83% in October. As previously mentioned, energy costs attract concerns beyond their direct impact on energy bills to printers as companies are aware of the energy intensity required to make paper and board and the effect the cost of energy can have on the cost of the paper and board supplies they purchase (though as most paper or board is imported from Europe, it will primarily be the cost of energy in Europe influencing prices).

Competitor pricing levels – or rather the perception that some competitors are pricing below cost – was the second highest ranking concern, selected by 54% of respondents in April, the same proportion as in January. Prior to January, competitor pricing had not featured in the top three concerns since January 2022, and has not been selected by as many respondents since July 2021.

The third ranking concern is now wage pressures, selected by 50% of companies. This is down from 51% in January but has entered the top three ranked concerns primarily due to a significant drop-off in the proportion of companies selecting substrate costs (paper, board, plastics etc.) as one of their top business concerns. Substrate costs has now fallen outside the top five ranking of concerns for the first time since January 2021. Concern over wage pressures has been heightened by recent minimum wage increases, and the knock-on effect that has on wage structures and pay differentials throughout businesses. Continued high levels of inflation, and the effect that has on pay review demands, has also added to wage pressure concerns.

Further back, but down in fourth position, was access to labour – this was ranked fifth in January with 39% of respondents selecting it, whilst it is up to fourth in this occasion it has been selected by a smaller proportion of respondents – 35%. Profit levels insufficient to ensure investment was the fifth ranked concern – it was selected by 28% of respondents.

### Top business concerns - % of respondents selecting



Source: BPIF printing outlook

After a four-year period of stability, paper and board price increases returned strongly in 2016. They intensified throughout 2017, climbed further in 2018 and in early 2019. However, paper and board price increases then largely stalled in Q2 2019, eased further in Q3, and were relatively subdued through to Q4 2020. However, market signalling for future price increases did start to come through in the second half of 2020 and increases have come through in 2021 and 2022 that are stronger than any time in recent history. The latest data does suggest that, whilst there was some expectation that further increases may come early in 2023, prices plateaued or peaked for many paper grades and have more recently decreased.

In April 2023, 19% of responding companies reported increasing paper and board costs in Q1 – much less than 69% in Q4 and the 80% in Q3. 62% reported stable costs and 19% experienced some decreases. The resulting balance was therefore exactly zero, significantly lower than +67 in Q4, +78 in Q3, and below the Q1 forecast of +13.

Fewer still (11%) expect to see price increases in Q2. 45% predict that their average paper and board costs will remain stable, and 14% expect a decline. The resulting balance for the Q2 forecast is therefore -33, if realised this would be the first negative balance for almost three years.



## 5.11 United Kingdom

*Cost of paper & board - decreases offset increases for first time in over 2 years*



Source: BPIF printing outlook

**The paper and board costs balance was zero in Q1, below the projection of +13. A balance of -33 is forecast for Q2.**

Energy price increases have still been coming through, but the proportion of companies subject to price increases is now falling. Two-fifths (40%) of respondents reported rising energy costs during Q1. Most of the remaining (55%) reported stable energy costs, and 5% reported a decrease in average energy costs. The resulting balance was therefore +35, just below the Q1 forecast of +38.

Energy costs increases are forecast to ease in Q2. 26% expect that the cost of energy will increase, 60% forecast that it will remain stable, and 14% predict to see some decreases coming through. The forecasted balance for Q2 is therefore +12.

*Energy costs - increases slowing in line with expectations*



Source: BPIF printing outlook

**A balance of +35 for energy costs was just below the forecast (+38). A balance of +12 is forecast for Q2.**

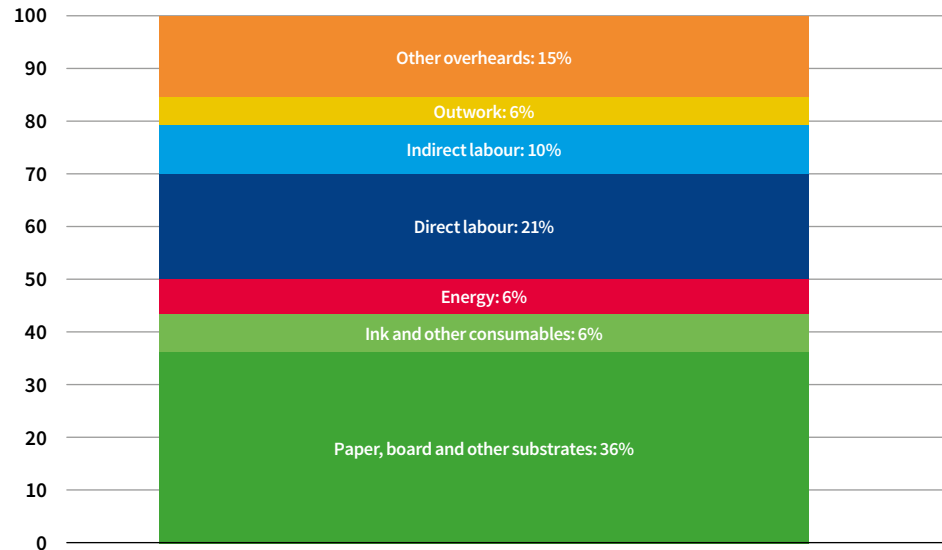
With persistent cost increases exerting significant pressure on the industry, it has become important to monitor the balance and changing nature of different cost areas for companies in the printing and printed packaging industry.

In April 2023, paper, board, and other substrate costs was the largest cost component with a 36% share, on average, of total costs. Direct labour was the next largest component, with 20%. Indirect labour accounted for 9% of costs, on average – meaning that altogether labour was 29%. Ink and other consumables had a 7% share, as did both energy. Outwork had a 5% of total costs.

The 'other overheads' category currently includes a number of categories such as rent, taxes, depreciation, repairs and maintenance, distribution, marketing and insurance – it had a 16% share of total costs in April.

## 5.11 United Kingdom

Cost structure - average % by cost category



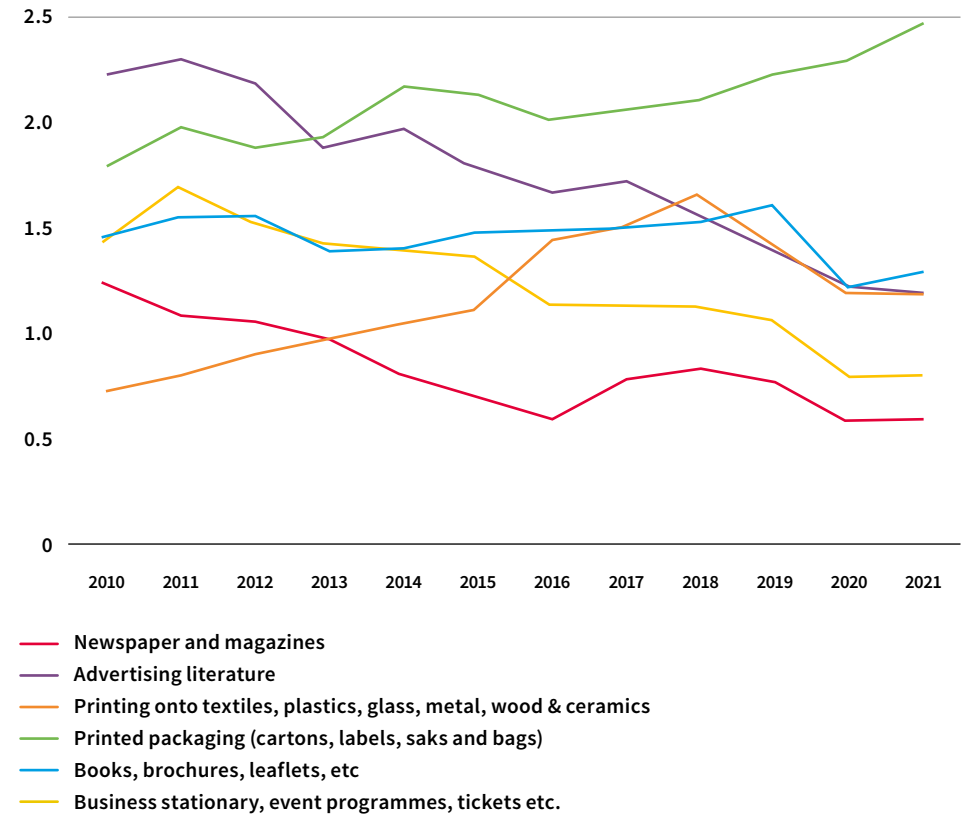
Source: BPIF printing outlook

There have not been any drastic changes to the cost category proportions since this question has been introduced to the survey, so it would be easy to question why energy costs are currently in the spotlight, given that they still only amount to 6% of costs on average. However, a closer inspection on the energy costs component revealed a significant variance in energy costs amongst respondents – from as low as 1% to as high as 40%. Only some of this variance is explained by energy usage patterns across sectors and type of companies – a bigger influence is the timing of energy contracts; companies that have recently come out of an energy contract, or have recently recontracted, have been subject to some extreme price increases.

Trends in specific market segments

Detailed sector data for 2022 was not available at time of publication. The chart below shows broad sector turnover from 2010 to 2021. All of these sectors, with the exception of printed packaging, experienced a Covid-enforced decline in 2020 and mostly flatlined in 2021. Books, brochures and leaflets have exhibited some recovery in 2021, whilst the packaging sector has experienced growth.

UK printing industry - sector performance 2010-2021 (turnover £bn)



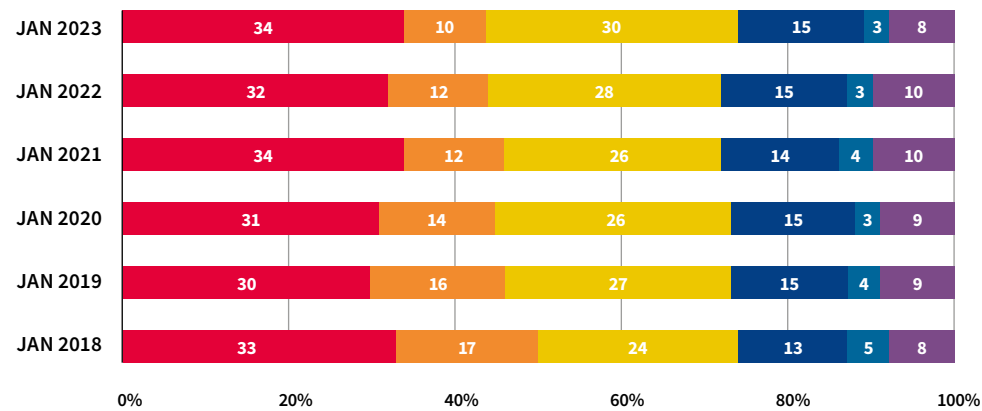
Source: BPIF Research analysis of ONS PRODCOM data

## 5.11 United Kingdom

### Trends in printing process

Digital printing has recovered after losing some market share during the pandemic as it was dominant in sectors that were most effected by the enforced restrictions and economic slowdown. Litho has continued to gain share mostly because of a dominance in carton packaging which maintained a strong performance throughout the pandemic and since.

#### UK printing process share 2018-2023



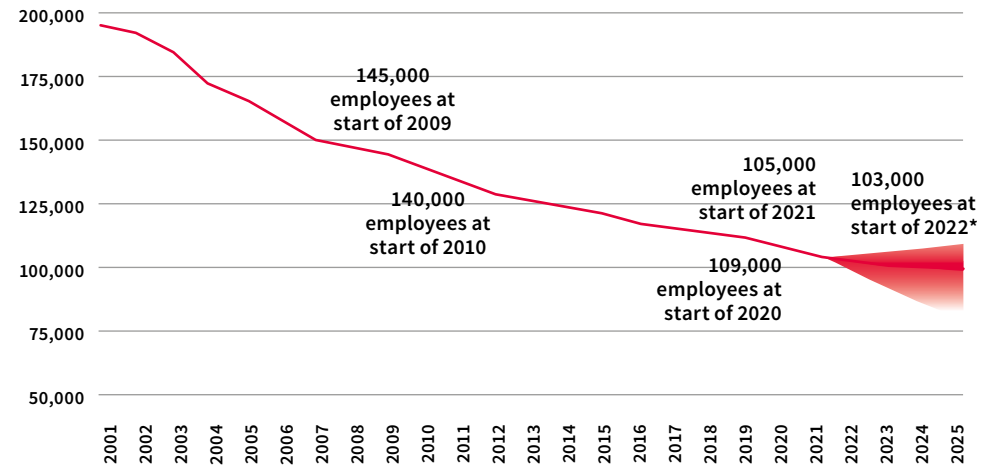
Source: BPIF printing outlook

### Trends in the employment market

Employment numbers on a steady but slow decline as some employees leave the industry for other occupations and the supply of labour from overseas declines. The Government's furlough scheme slowed what would have been a much hastier decline in employment during the pandemic.

Despite there being an overall decline in employment numbers in the industry, there are now many companies that are attempting to recruit new employees once again. Developments in automation and efficiency improvements in workflow are becoming increasingly important, especially for those companies experiencing labour shortages (skilled and unskilled).

#### UK printing industry - number of employees 2001-2025



Source: BPIF Research

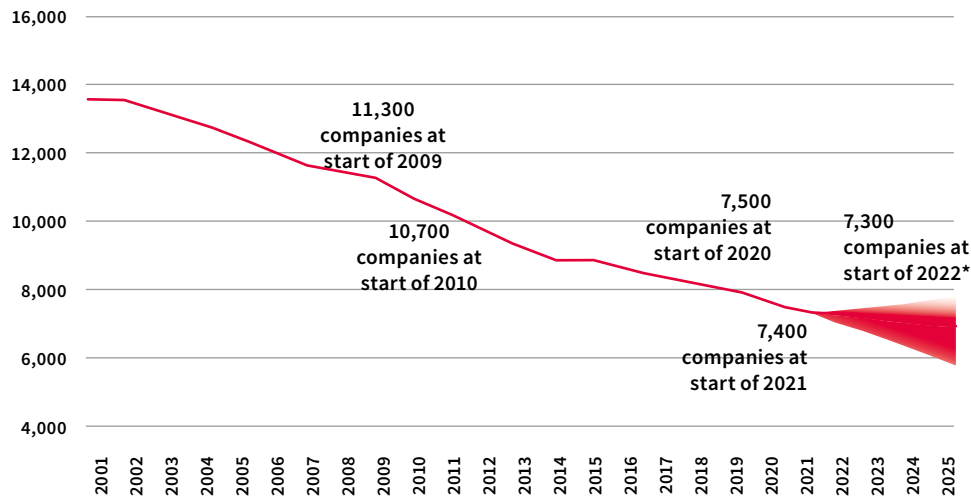
\*2022 – 2023 forecast estimates

## 5.11 United Kingdom

### Trends in the number of operating companies

Like the decline in employment numbers, the number of companies in the industry has also experienced a slow and steady fall. The decline has perhaps eased very slightly in recent years, but a continued economic recovery is crucial if cash flow pressure and significant cost inflation is to be overcome.

#### UK printing industry - number of companies 2001-2025

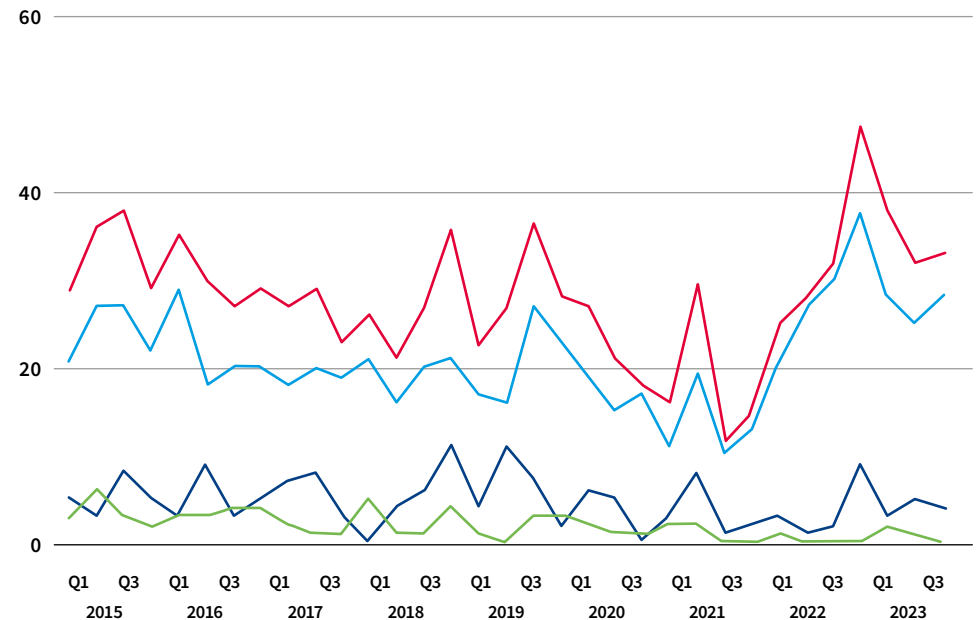


Source: BPIF Research

\*2022 – 2023 forecast estimates

Government measures in response to Covid-19 (not just the financial support available to companies and individuals but also reduced HMRC enforcement, operation of courts and temporary restrictions on the use of statutory demands and winding-up petitions) dampened insolvencies throughout much of 2020 and early 2021. Insolvencies did spike in Q4 2020, before easing in Q1 and then increasing every quarter to a peak in Q2 last year, before falling back down slightly in Q3, Q4, before a small increase with the latest Q1 data. Total insolvencies in 2022 were 150, the highest level since 2013, and almost a 90% increase from the 79 insolvencies in 2021.

### Company insolvencies - printing (sic 181)



- Total New Company Insolvencies
- Creditor's Voluntary Liquidation
- Compulsory Liquidations
- Other

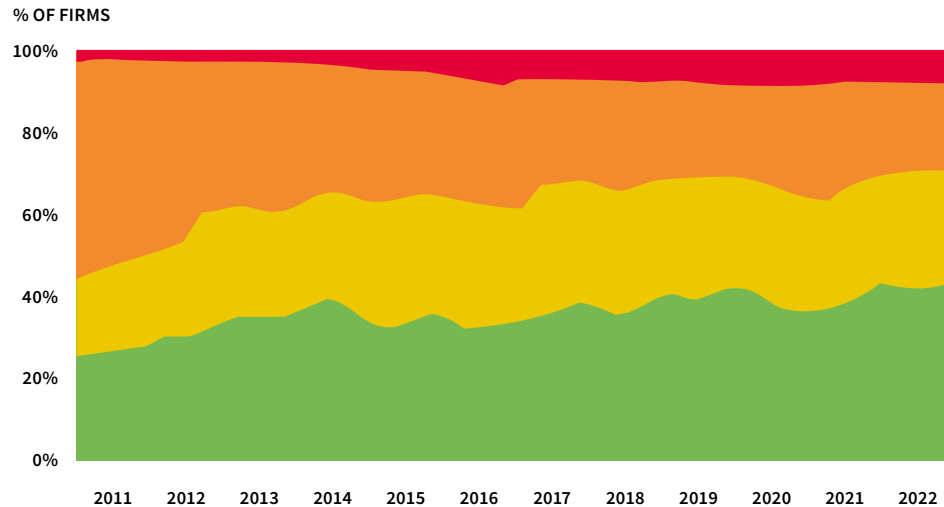
Source: The Insolvency Service

A detailed financial health analysis of data for the 5,000 largest print and printed packaging companies (as selected by total asset value ranking) provides some further interesting insights. This financial health analysis rates the financials for each company and updates them over time so that a financial health chart can be produced.

## 5.11 United Kingdom

Looking at the financial health chart and working from the bottom up – the green proportion shows the share of the top 5,000 companies that are in a strong and secure financial position; the number of companies categorised here has increased from a low of 25.4% in Q1 2011, to its current high of 44.2% in Q4 2022. The yellow section shows the proportion of companies with a less strong financial position, representing an average credit risk. The percentage of companies assigned to yellow has increased from 17.3% in Q1 2011 to a high of 31.2% in Q2 2017; it stands at 26.1% in Q4 2022.

### Financial health - printing & printed packaging companies



**Source:** Begbies Traynor and BPIF analysis of financials from the top\* 5,000 print and printed packaging companies (\*selected by total assets value).

The orange shading depicts the share of the top 5,000 companies that are considered a higher credit risk due to their financial results, past trading history, the lack of available information or the presence of detrimental information against them. The proportion of companies in the orange section has fallen from 53.2% in Q1 2011, to its current low of 20.5% in Q4 2022. Finally, the red section is for high-risk companies with poor credit scores and/or serious detrimental information filed against them and companies that have undergone insolvency or have a striking-off action registered against them. The red section represents a smaller proportion of companies, but one that has grown throughout the pandemic. The red portion's low was 3.2% in Q2 2011, whilst its high was 9.3% in Q4 2020; it has subsequently fallen back slightly to 9.1% in Q4 2022.

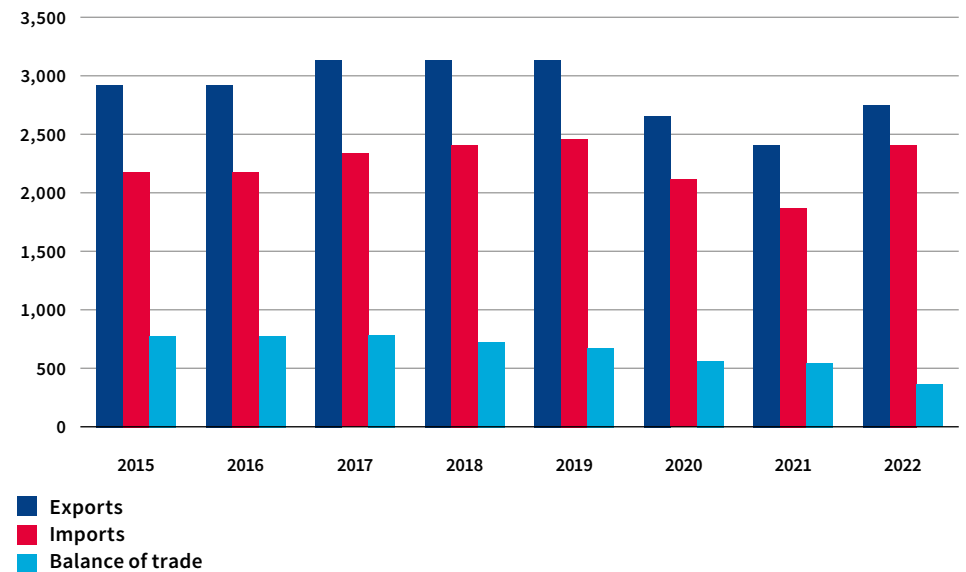
### Trends in foreign trade

In recent years foreign trade has had to deal with a global pandemic, recession, extreme conditions in haulage and distribution, dramatic cost increases, Brexit and war in Ukraine.

The value of exports and imports of printed matter both declined by around 15% in 2020 – the majority of this coming from non-EU trade. In 2021 exports have fallen by a further 10% and imports by 12% - on this occasion all of this has come from EU trade; non-EU trade actually increased slightly in 2021. Exports to the EU declined by 23%, imports from the EU decreased by 30%.

In 2022, the value of exports of printed matter recovered by 14%, but the value of imports increased by 29%. The EU/Non-EU trade breakdowns reveal that an increase in imports from the EU was the main changing factor. EU imports increased by 73% from their level in 2021; whilst exports to the EU only increased by 9%. The UK's exports to Non-EU destinations increased by 20%, considerably more than imports from outside the EU, which increased by 6%.

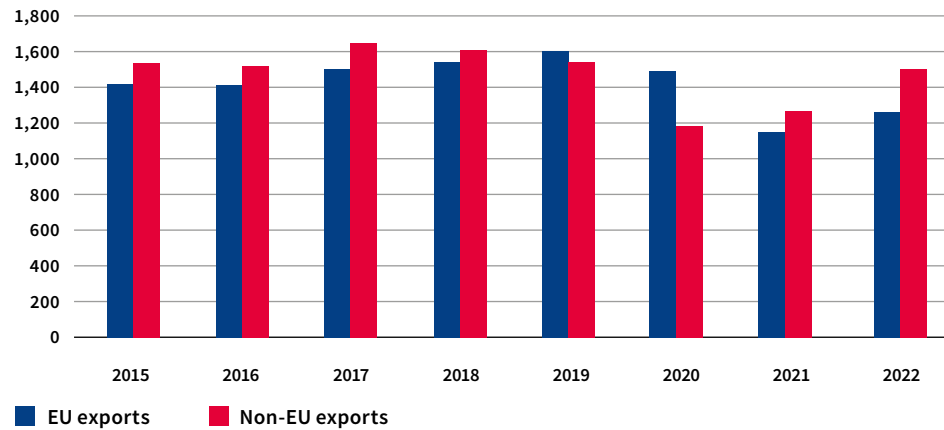
### UK printing industry - overseas trade in printed matter 2015 - 2022 (£m)



**Source:** BPIF Research analysis of HM Revenue and Customs data

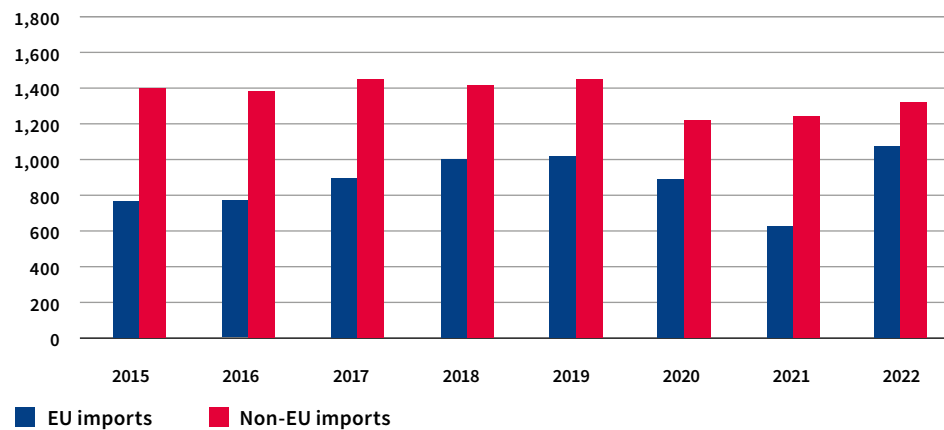
## 5.11 United Kingdom

UK printing industry - exports 2015 - 2021 (£m)



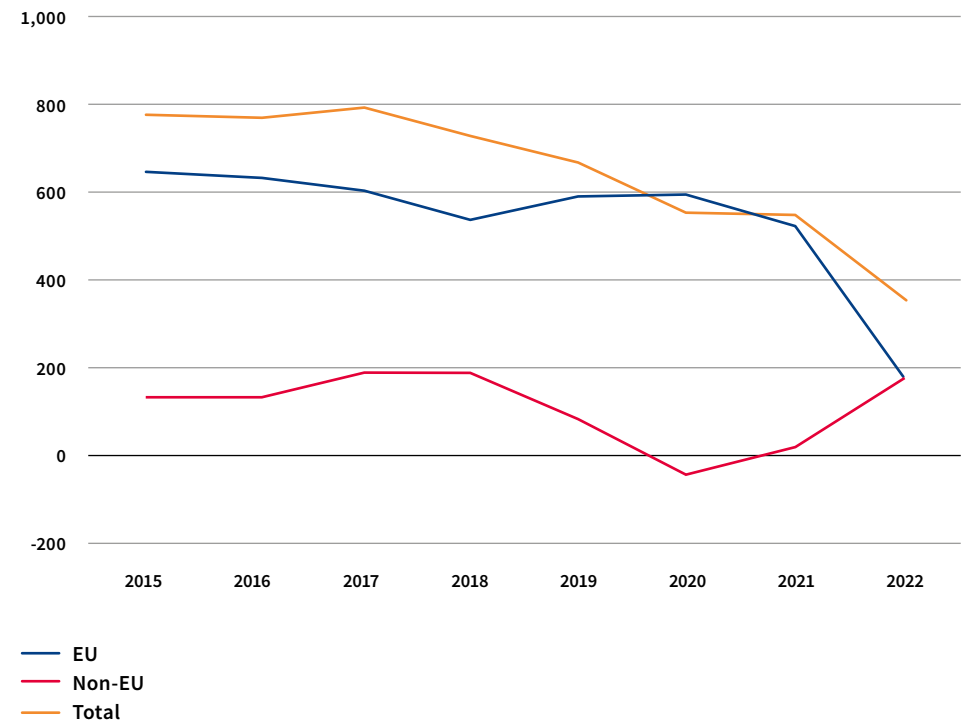
Source: BPIF Research analysis of HM Revenue and Customs data

UK printing industry - imports 2015 - 2022 (£m)



Source: BPIF Research analysis of HM Revenue and Customs data

UK printing industry - balance of trade 2015 - 2022 (£m)



Source: BPIF Research analysis of HM Revenue and Customs data

## 5.11 United Kingdom

### Trends in labour costs

As of April 2023, Labour costs are now dominating the cost pressure landscape. 49% of all responding companies were subject to increasing costs for labour in Q1. Most of the remaining companies (49%) managed to hold average labour costs steady. Leaving just 2% that experienced a decline in average labour costs. The resulting balance (+47) was a little below the level reported in Q4 (+51), but a little above the Q1 forecast (+44).

Average labour costs are expected to remain under a similar level of upward pressure in Q2. Just less than half of all respondents (48%) expect some increases in Q2. A similar proportion (49%) do not expect any further change in Q2. Only 3% expect a decline in average labour costs in Q2, the resulting forecast balance for Q2 is therefore +45.

### Labour costs – wage pressures continue in Q1 and Q2



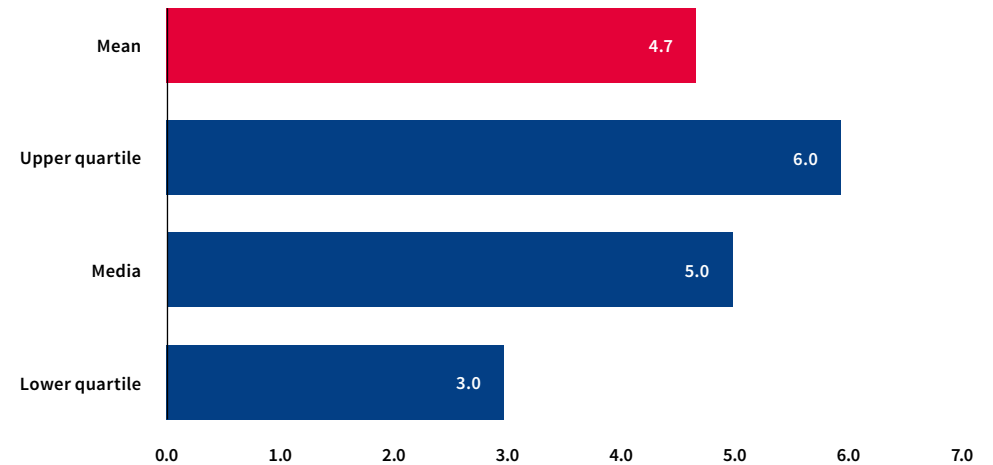
Source: The Insolvency Service

A balance of +47 in Q1 was above the forecast of +44. A balance of +45 is projected for Q2.

Almost half (46%) of respondents reported that they had conducted a pay review in Q1 2023. This is more than the proportion that reviewed wages last quarter, and more than in Q1 last year. Current wage pressures are strongly linked to stubbornly high inflation, minimum wage legislation and the impact of that on maintaining wage differentials and, in some areas, competition over employees.

Where pay reviews were conducted in Q1, the resulting average (mean) change in basic pay was 4.7%, down from 5.2% in Q4. The median level (which dissects the highest 50% reporting change from the lowest 50%) was 5.0%, unchanged from Q4.

### Pay review – average change in Q1



Source: The Insolvency Service

## 5.11 United Kingdom

### Developments affecting competitiveness

#### Plastic Packaging Tax (PPT)

The UK Government introduced a new Plastic Packaging Tax (PPT) on the 1st April 2022. After this time tax at the rate of £200 per tonne will have to be paid on any plastic packaging that falls within the tax rules. The tax applies when the plastic packaging component does not contain a minimum of 30% recycled content.

If you manufacture or import packaging, you will need to take steps to establish your status within the tax. Companies that manufacture or import more than 10 tonnes of plastic in 12 months will have to register and keep additional records to calculate and pay the tax if they are the company performing the last substantial modification before filling, packing, and labelling.

As announced at the Spring Budget 2023, the PPT rate will be increased from £200 per tonne to £210.82 per tonne in line with the Consumer Price Index (CPI) from 1 April 2023. This change will maintain the real term value of the price incentive to use recycled plastic and supports the government's environmental goals. The new rate will apply to all plastic packaging manufactured or imported into the UK on or after 1 April 2023. Any packaging that has been manufactured or imported prior to 1 April 2023 will be charged at the existing rate of £200 per tonne.

The tax applies when the plastic packaging component does not contain a minimum of 30% recycled content. If you manufacture or import packaging, you will need to take steps to establish your status within the tax.

Companies that manufacture or import more than 10 tonnes of plastic in 12 months will have to register and keep additional records to calculate and pay the tax if they are the company performing the last substantial modification before filling, packing and labelling. As printing has been designated as a 'substantial modification' many packaging producers will undertake the last substantial modification and be required to pay the tax.

#### Extended Producer Responsibility (EPR)

EPR will see the full cost of managing household waste move to the producers, with the expectation of delivering a more circular economy for packaging and increased quantities of recyclable packaging being reprocessed rather than ending up as waste.

EPR will also impact how non-household packaging waste is managed and how the cost of reprocessing this waste is financed.

Businesses will be obligated under EPR if ALL the following points apply:

- > A UK turnover in excess of £1 million, AND
- > A physical presence in the UK, AND
- > Handles more than 25 tonnes of packaging and/or packaging materials.

EPR Obligated Print and Packaging businesses need to be aware of the following key points:

- > Manufacturers and producers will be incentivised to:
  - use packaging that is widely collected from householders for recycling.
  - and to increase recycled content in packaging.
- > There will be additional 6 monthly collection and reporting requirements starting in October 2023 for data that includes packaging type and recyclability.
- > These data reporting requirements will increase in both their detail and complexity.
- > There will be an introduction of eco-modulation of EPR fees that obligated businesses must pay which could see producer compliance costs increase if using costly or difficult to recycle packaging.
- > There will be a requirement for UK nation reporting, separating out packaging supplied to each UK nation.
- > All packaging (except for flexible films) will need to display a binary recyclability label from 1 April 2026, declaring that the product is either "recycle" or "do not recycle".



## 6.1 Classification

### Industry profile

#### NACE classification

18	Printing and reproduction of recorded media
18.1	Printing and service activities related to printing
18.11	Printing of newspapers
18.12	Other printing
18.13	Pre-press and pre-media services
18.14	Binding and related services

### Production value

#### PRODCOM classification

Note books:	17231315 - Note books, letter pads, memorandum pads, of paper or paperboard
Diaries:	17231317 - Diaries, of paper or paperboard
Telephone books:	17231319 - Engagement books, address books, telephone number books and copy books, of paper or paperboard (excluding diaries)
Exercise books:	17231330 - Exercise books, of paper or paperboard
Blotting pads:	17231390 - Blotting pads and book covers, of paper or paperboard
Labels:	17291120 - Self-adhesive printed labels of paper or paperboard 17291140 - Printed labels of paper or paperboard (excluding self-adhesive)
Newspapers:	18111000 - Printed newspapers, journals and periodicals, appearing at least four times a week
Security printing:	18121100 - Printed new stamps, stamp-impressed paper, cheque forms, banknotes, etc
Catalogues:	18121230 - Printed commercial catalogues
Advertising:	18121250 - Printed trade advertising material (excluding commercial catalogues)
Magazines:	18121300 - Printed newspapers, journals and periodicals, appearing less than four times a week
Books:	18121407 - Printed books, brochures, leaflets and similar printed matter, in single sheets 18121414 - Printed books, brochures, leaflets and similar printed matter (excluding in single sheets)

Colouring books:	18121421 - Printed children's picture, drawing or colouring books
Dictionaries:	18121428 - Printed dictionaries and encyclopaedias, and serial instalments thereof
Maps:	18121435 - Printed maps, hydrographic or similar charts, in book-form 18121442 - Printed maps, hydrographic or similar charts (excluding in book-form)
Postcards:	18121449 - Printed postcards, whether or not illustrated
Cards:	18121456 - Printed cards bearing personal greetings, messages or announcements, whether or not illustrated, with or without envelopes or trimmings
Photographs:	18121463 - Printed pictures, designs and photographs
Calendars:	18121910 - Printed calendars of any kind, including calendar blocks
Music:	18121920 - Printed music (including braille music)
Transfers:	18121930 - Printed transfers (decalcomanias)
Others:	18121990 - Other printed matter, n.e.c

### Trade data

#### Combined nomenclature

49	PRINTED BOOKS, NEWSPAPERS, PICTURES AND OTHER PRODUCTS OF THE PRINTING INDUSTRY; MANUSCRIPTS, TYPESCRIPTS AND PLANS (printed products)
4901	Printed books, brochures, leaflets and similar printed matter, whether or not in single sheets (books)
4902	Newspapers, journals and periodicals, whether or not illustrated or containing advertising material (newspapers)
4903 00 00	Children's picture, drawing or colouring books (colouring books)
4909 00 00	Printed or illustrated postcards; printed cards bearing personal greetings, messages or announcements, whether or not illustrated, with or without envelopes or trimmings (postcards)
4910 00 00	Calendars of any kind, printed, including calendar blocks (calendars)
4911 10	Trade advertising material, commercial catalogues and the like (advertising)
4911 91 00	Pictures, designs and photographs (photographs)

## 6.2 Background data

### Background to 2.1

#### Companies, 2020

	Printing and service activities related to printing	Printing of newspapers	Other printing	Pre-press and pre-media services	Binding and related services
Austria	765	6	580	108	71
Belgium	3,905	135	1,387	2,259	124
Bulgaria	960	12	718	162	68
Croatia	1,331	13	883	357	78
Cyprus	248	:	232	16	:
Czechia	7,349	:	:	:	:
Denmark	533	8	394	97	34
Estonia	362	1	314	37	10
Finland	663	9	521	109	24
France	14,702	24	4,563	9,543	572
Germany	11,099	139	7,522	2,661	777
Greece	2,568	37	1,455	925	151
Hungary	2,856	15	1,302	1,367	172
Ireland	1,068	15	716	289	48
Italy	13,327	17	10,532	1,757	1,021
Latvia	427	3	311	68	45
Lithuania	709	3	333	211	162
Luxembourg	61	0	40	17	4
Malta	129	:	117	6	:
Netherlands	3,024	25	2,065	400	534
Poland	9,650	359	5,253	3,078	960
Portugal	2,254	16	1,469	634	135
Romania	2,522	49	2,121	181	171
Slovakia	1,705	4	745	856	100
Slovenia	1,127	7	569	496	55
Spain	12,355	85	9,669	2,268	334
Sweden	2,333	5	1,681	535	112
Iceland	110	3	72	25	10
Norway	742	28	472	229	13
Switzerland	919	:	:	:	:
UK	11,035				
<b>TOTAL*</b>	<b>110,073</b>				
<b>EU27</b>	<b>98,000</b>	<b>1,010</b>	<b>57,205</b>	<b>32,681</b>	<b>7,151</b>

\* (EU27+UK+NO+CH+IS)

#### Turnover, in million euro, 2020

	Printing and service activities related to printing	Printing of newspapers	Other printing	Pre-press and pre-media services	Binding and related services
1,603.2	111.7	1,378.0	66.5	47.0	
1,958.6	14.4	1,614.5	297.8	31.9	
351.3	8.8	328.2	14.3	:	
639.5	13.4	579.4	42.1	4.6	
51.1	:	49.8	1.3	:	
1,529.2	:	:	:	:	
708.2	:	600.9	53.9	53.4	
215.5	:	:	:	:	
848.6	121.7	684.7	40.2	2.1	
6,891.4	:	5,412.6	1,230.7	:	
15,743.0	478.4	12,648.7	1,996.1	619.8	
535.1	10.1	390.2	108.7	26.1	
864.6	0.9	761.8	88.1	13.9	
566.5	7.8	502.1	48.3	8.3	
8,495.3	236.7	7,175.2	662.8	420.6	
254.2	:	248.0	6.2	:	
261.6	:	243.9	15.7	2.0	
71.6	0.0	70.4	1.2	:	
274.6	:	272.9	0.4	:	
2,821.2	:	2,515.6	:	:	
4,100.0	51.4	3,551.3	323.8	173.5	
824.4	11.9	661.0	135.6	15.9	
770.2	59.8	663.4	27.5	19.4	
370.8	1.3	275.9	82.4	11.1	
392.4	0.5	333.0	58.9	:	
5,259.3	199.6	4,478.9	440.5	140.3	
1,308.8	:	1,133.2	62.3	:	
47.9	4.9	40.1	2.8	0.1	
649.7	116.9	456.4	62.1	14.3	
2,579.8	:	:	:	:	
9,862.2					
<b>70,850</b>					
<b>57,465.7</b>	<b>1,593.6</b>	<b>47,788.6</b>	<b>6,125.6</b>	<b>1,957.8</b>	

#### Employees, 2020

	Printing and service activities related to printing	Printing of newspapers	Other printing	Pre-press and pre-media services	Binding and related services
8,728	421	7,383	527	397	
9,171	54	7,378	1,456	283	
8,204	154	7,458	430	162	
7,620	145	6,791	600	84	
865	:	840	25	:	
15,617	:	:	:	:	
3,939	:	3,381	346	212	
2,601	:	:	:	:	
5,790	545	4,784	432	29	
44,104	:	33,490	8,521	:	
129,580	4,823	100,040	16,909	7,809	
6,522	176	4,483	1,382	481	
13,910	21	11,963	1,441	485	
4,329	56	3,897	291	85	
58,110	1,075	47,508	5,098	4,429	
3,454	7	3,181	142	124	
3,687	:	3,436	221	30	
488	0	483	5	:	
1,697	:	1,662	9	:	
14,911	37	12,814	875	1,185	
43,030	608	36,363	3,357	2,702	
12,920	197	9,839	2,523	361	
14,428	917	11,942	814	755	
4,296	31	3,124	941	200	
3,622	7	2,991	571	54	
50,282	1,574	40,852	5,275	2,581	
7,508	:	6,494	460	:	
463	24	406	32	1	
3,942	502	2,913	373	154	
15,200	:	:	:	:	
109,000					
<b>608,018</b>					
<b>477,610</b>	<b>12,179</b>	<b>386,365</b>	<b>53,986</b>	<b>25,083</b>	

## 6.2 Background data

### Background to 2.2

*Labour cost per employee full-time equivalent, thousand euro*

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Austria	52.0	50.7	53.8	54.1	56.4	58.2	58.8	61.7	59.3	59.4	60.3	61.9	61.2
Belgium	51.6	53.6	55.8	56.3	59.4	60.6	60.4	60.3	59.9	60.3	58.1	58.6	61.8
Bulgaria	4.2	4.3	4.2	4.6	4.8	5.2	5.5	5.9	6.4	7.3	8.1	9.1	9.8
Croatia	14.9	14.5	15.3	14.8	15.0	14.8	14.4	14.9	14.2	14.8	16.1	16.9	17.1
Cyprus	22.1	23.2	22.9	23.4	22.0	19.7	20.0	18.5	19.2	19.0	19.1	19.8	16.5
Czechia	14.2	14.1	14.8	15.3	15.1	14.8	14.2	14.8	15.2	16.4	17.9	18.9	18.5
Denmark	58.0	57.2	59.6	58.5	60.6	60.3	60.8	61.9	62.8	64.5	64.3	65.4	66.2
Estonia	14.2	13.2	13.1	13.6	14.9	15.4	16.0	16.3	17.9	19.2	20.2	21.0	21.0
Finland	43.4	43.0	44.5	46.4	47.0	47.2	48.7	48.8	50.5	48.9	51.0	52.5	49.1
France	49.6	49.6	51.3	52.6	51.9	52.3	53.0	55.0	53.2	54.9	57.2	58.8	55.6
Germany	40.9	41.0	40.3	39.9	41.6	41.8	41.3	43.2	42.9	45.4	43.2	45.3	42.8
Greece	23.8	34.7	29.0	28.1	25.6	22.8	22.1	21.6	21.5	21.3	18.0	18.9	17.3
Hungary	11.0	9.7	9.9	10.1	10.5	10.6	10.7	10.6	11.0	12.0	12.1	13.0	13.2
Ireland	49.4	62.3	41.4	46.1	45.6	45.0	42.0	49.4	51.5	45.6	45.6	47.5	47.5
Italy	40.0	40.6	41.2	41.6	42.2	42.4	44.5	44.7	45.5	43.2	43.2	44.7	45.6
Latvia	8.8	7.9	9.0	10.1	10.5	11.6	11.2	12.4	14.3	14.3	15.0	18.2	18.6
Lithuania	9.4	8.7	7.9	8.8	9.6	10.5	10.8	11.6	12.2	13.0	14.7	16.2	16.9
Luxembourg	50.8	50.8	50.8	50.8	50.8	48.1	48.7	50.1	49.3	51.7	50.8	51.0	51.0
Malta	23.6	23.6	23.6	23.6	23.6	22.4	22.5	22.0	23.8	22.1	28.9	33.2	32.7
Netherlands	45.0	47.2	49.5	53.5	52.8	53.5	55.5	55.6	51.6	52.9	52.9	53.4	55.1
Poland	12.2	12.2	12.2	12.2	12.6	13.0	14.0	13.8	13.9	15.0	16.3	17.3	18.7
Portugal	17.4	17.7	18.1	18.3	17.7	17.9	17.9	18.0	18.4	18.7	19.5	19.7	19.6
Romania	6.4	5.7	5.7	5.8	6.4	6.4	6.4	6.4	9.5	9.5	9.5	10.9	10.0
Slovakia	15.9	17.7	12.8	12.8	13.5	13.5	12.4	13.2	13.0	14.0	15.3	15.7	16.5
Spain	32.4	32.3	33.5	33.2	33.8	33.2	33.1	31.7	32.3	32.6	34.3	34.5	31.6
Sweden	49.5	45.3	51.4	54.9	59.2	61.1	59.0	58.4	59.2	59.7	56.6	54.7	56.1
Iceland	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	54.6	63.3	69.3	64.2	53.5
Norway	57.1	57.2	66.1	66.8	74.4	74.0	67.2	67.2	62.0	65.0	66.8	64.4	54.5
Switzerland	57.5	57.5	64.0	72.5	70.8	69.7	69.7	69.7	69.7	69.7	69.7	79.6	76.9
United Kingdom	34.8	37.5	28.8	28.7	32.6	33.8	32.9	35.0	35.0	35.7	:	:	:
Europe (EU27)	29.3	30.0	29.7	30.4	30.9	30.9	30.9	31.6	31.9	32.1	32.6	33.7	33.5

## 6.2 Background data

### Background to 2.3

Production value, in €

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Newspapers</b>	4,209,633,628	3,455,665,628	3,348,893,559	3,309,664,830	3,137,906,488	2,937,884,277	2,830,400,174	2,331,920,258	2,467,561,800	2,296,926,474	2,027,272,286	1,737,202,860	1,711,579,534	1,638,000,000
<b>Magazines</b>	8,005,426,112	7,201,261,674	6,220,699,838	5,898,918,209	6,000,000,000	5,004,029,667	4,633,096,618	4,239,219,754	3,909,577,049	3,719,673,446	3,432,949,701	3,383,902,845	2,729,523,825	2,790,000,000
<b>Catalogues</b>	3,951,032,611	3,655,137,479	3,445,682,256	3,460,000,000	3,462,149,472	3,093,797,565	3,009,633,504	3,311,538,521	3,357,896,110	3,399,949,536	3,247,866,985	2,952,493,820	2,286,000,000	2,560,000,000
<b>Advertising</b>	13,269,502,609	11,769,852,299	11,452,905,135	11,631,552,299	10,880,000,000	10,044,805,747	9,895,602,995	9,822,694,028	9,489,024,693	9,340,025,808	9,020,199,161	9,065,811,053	7,676,298,341	7,832,000,000
<b>Books</b>	7,022,569,909	6,085,492,510	5,918,472,328	5,765,334,657	5,493,973,763	5,446,568,215	5,456,673,010	5,476,335,513	5,355,369,096	5,384,581,460	5,078,103,716	5,389,525,306	4,550,415,661	5,146,087,337

	Newspapers	Catalogues	Advertising	Magazines	Books	Other print products
<b>Austria</b>	:	27,703,000	339,977,000	109,476,000	67,223,000	583,079,000
<b>Belgium</b>	64,211,000	42,331,000	397,857,000	:	135,492,000	432,621,000
<b>Bulgaria</b>	:	4,768,381	41,227,631	7,571,326	49,759,689	184,378,260
<b>Croatia</b>	27,621,000	51,182,000	43,194,000	38,832,000	63,216,000	589,644,000
<b>Czechia</b>	37,817,278	40,170,632	187,707,332	80,149,844	219,197,504	281,032,412
<b>Denmark</b>	:	:	227,108	:	48,541	356,804,356
<b>Estonia</b>	5,351,000	528,000	28,393,000	37,729,000	28,548,000	53,870,000
<b>Finland</b>	69,064,000	1,392,000	80,334,000	91,903,000	41,366,000	286,386,000
<b>France</b>	193,851,000	301,598,000	1,269,797,000	353,621,000	267,608,000	3,160,849,000
<b>Germany</b>	583,113,000	713,544,000	3,226,933,000	1,043,779,000	857,852,000	4,544,847,000
<b>Greece</b>	18,630,000	4,910,000	37,663,000	21,443,000	37,282,000	181,753,000
<b>Hungary</b>	1,549,729	4,189,217	78,318,588	39,208,861	104,607,818	236,326,411
<b>Ireland</b>	:	65,987,000	:	7,649,000	55,522,000	145,193,000
<b>Italy</b>	178,090,000	901,015,000	702,204,000	231,829,000	688,783,000	4,048,202,000
<b>Latvia</b>	:	2,939,000	15,260,000	:	55,655,000	24,937,000
<b>Lithuania</b>	1,476,000	1,562,000	21,154,000	21,529,000	55,093,000	171,406,000
<b>Netherlands</b>	:	41,872,000	560,384,000	84,303,000	213,603,000	833,298,000
<b>Poland</b>	52 635 372	14 504 074	103 283 098	155 129 458	614 819 285	653 016 299
<b>Portugal</b>	:	10 632 000	93 206 000	20 000 000	110 739 000	327 462 000
<b>Romania</b>	9 203 495	:	44 641 268	6 996 241	60 260 287	447 644 010
<b>Slovakia</b>	:	30 881 000	5 772 000	69 461 000	109 930 000	41 735 000
<b>Slovenia</b>	:	6 599 000	58 879 000	6 547 000	80 666 000	58 353 000
<b>Spain</b>	137 570 000	241 963 000	396 028 000	99 410 000	698 899 000	1 448 355 000
<b>Sweden</b>	125 728 182	:	:	:	77 709 752	352 948 800

## 6.2 Background data

### Background to 2.4

Trade of printed products, 2022, in €

	EU27 EXTRA EXPORT	EU27 INTRA EXPORT	TOTAL EXPORT	EU27 EXTRA IMPORT	EU27 INTRA IMPORT	TOTAL IMPORT	BALANCE
Austria	97,454,225	361,664,438	459,118,663	35,360,096	721,040,517	756,400,613	-297,281,950
Belgium	151,480,963	590,611,646	742,092,609	162,655,195	601,055,926	763,711,121	-21,618,512
Bulgaria	15,848,091	48,958,547	64,806,638	7,158,060	27,813,131	34,971,191	29,835,447
Cyprus	259,121	1,423,907	1,683,028	6,949,325	17,701,400	24,650,725	-22,967,697
Czechia	58,935,073	746,009,966	804,945,039	55,851,143	468,294,073	524,145,216	280,799,823
Germany	1,476,472,175	2,253,517,252	3,729,989,427	688,107,956	2,353,786,065	3,041,894,021	688,095,406
Denmark	82,777,332	175,082,484	257,859,816	64,746,773	242,442,912	307,189,685	-49,329,869
Estonia	13,237,311	86,290,695	99,528,006	7,988,393	13,545,655	21,534,048	77,993,958
Spain	331,263,091	482,189,416	813,452,507	209,176,171	426,770,009	635,946,180	177,506,327
Finland	22,399,632	26,445,268	48,844,900	35,417,573	97,378,225	132,795,798	-83,950,898
France	648,145,402	830,108,881	1,478,254,283	480,166,135	1,630,242,618	2,110,408,753	-632,154,470
Greece	59,096,940	45,505,966	104,602,906	57,233,224	39,144,756	96,377,980	8,224,926
Croatia	19,556,339	57,054,714	76,611,053	16,341,690	40,489,881	56,831,571	19,779,482
Hungary	55,270,942	188,942,462	244,213,404	41,858,867	136,216,969	178,075,836	66,137,568
Ireland	55,938,425	14,321,939	70,260,364	460,925,483	56,847,467	517,772,950	-447,512,586
Italy	544,689,983	785,473,199	1,330,163,182	198,548,591	352,476,447	551,025,038	779,138,144
Lithuania	51,391,325	89,333,655	140,724,980	13,391,435	21,735,761	35,127,196	105,597,784
Luxembourg	1,694,873	11,231,842	12,926,715	3,199,386	69,652,822	72,852,208	-59,925,493
Latvia	44,854,096	147,328,767	192,182,863	11,910,742	23,545,933	35,456,675	156,726,188
Malta	262,928,656	19,866,899	282,795,555	12,562,368	4,774,221	17,336,589	265,458,966
Netherlands	268,626,189	1,657,491,828	1,926,118,017	533,025,949	662,946,689	1,195,972,638	730,145,379
Poland	250,368,841	1,966,888,303	2,217,257,144	73,771,789	699,342,321	773,114,110	1,444,143,034
Portugal	25,124,885	44,904,471	70,029,356	36,464,079	166,118,436	202,582,515	-132,553,159
Romania	24,671,124	83,006,574	107,677,698	32,704,207	101,708,495	134,412,702	-26,735,004
Sweden	142,119,930	100,478,630	242,598,560	144,434,583	254,623,006	399,057,589	-156,459,029
Slovenia	48,256,582	177,718,646	225,975,228	46,770,973	47,600,857	94,371,830	131,603,398
Slovakia	5 084 087	226 143 825	231 227 912	9 186 904	133 240 832	142 427 736	88 800 176
EU-27	4 757 945 633	11 217 994 220	15 975 939 853	3 445 907 090	9 410 535 424	12 856 442 514	3 119 497 339

## 6.2 Background data

### Background to 2.5

Import of printed products from China, 2022, in €

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>EU27</b>	125,749,852	132,070,203	139,231,329	176,936,623	246,448,466	289,900,963	365,781,327	479,059,818	565,187,814	553,973,730	602,666,946	643,441,573	682,734,140	608,052,079	569,736,254	566,582,308	564,434,378	544,597,127	542,646,070	583,257,646	528,748,228	713,009,981	902,585,304

	2022
<b>Austria</b>	4,846,948
<b>Belgium</b>	53,770,283
<b>Bulgaria</b>	2,175,980
<b>Croatia</b>	4,576,802
<b>Cyprus</b>	475,578
<b>Czechia</b>	24,843,540
<b>Denmark</b>	11,082,444
<b>Estonia</b>	1,434,408
<b>Finland</b>	3,215,195
<b>France</b>	158,120,779
<b>Germany</b>	187,125,939
<b>Greece</b>	13,889,800
<b>Hungary</b>	15,604,106
<b>Ireland</b>	35,168,717
<b>Italy</b>	63,126,904
<b>Latvia</b>	865,093
<b>Lithuania</b>	2,121,306
<b>Luxembourg</b>	73,750
<b>Malta</b>	1,425,409
<b>Netherlands</b>	154,827,426
<b>Poland</b>	36,930,188
<b>Portugal</b>	6,405,107
<b>Romania</b>	7,000,365
<b>Slovakia</b>	2,771,016
<b>Slovenia</b>	3,465,430
<b>Spain</b>	86,150,479
<b>Sweden</b>	21,092,312
<b>EU-27</b>	902,585,304

## 6.2 Background data

### Background to 2.6

Trade of printed product with the US, 2022, in €

	EXPORT	IMPORT	BALANCE
Austria	5,912,102	6,992,346	-1,080,244
Belgium	31,993,110	25,241,748	6,751,362
Bulgaria	1,888,015	397,227	1,490,788
Croatia	414,618	887,642	-473,024
Cyprus	27,442	1,316,189	-1,288,747
Czechia	3,338,778	8,264,948	-4,926,170
Denmark	6,165,989	17,254,770	-11,088,781
Estonia	232,755	303,621	-70,866
Finland	5,734,781	3,039,302	2,695,479
France	67,463,223	44,662,612	22,800,611
Germany	192,252,161	183,545,257	8,706,904
Greece	2,409,277	7,505,786	-5,096,509
Hungary	1,902,939	6,260,936	-4,357,997
Ireland	11,368,254	90,425,611	-79,057,357
Italy	207,509,730	30,788,492	176,721,238
Latvia	1,942,555	260,849	1,681,706
Lithuania	4,423,577	779,812	3,643,765
Luxembourg	787,371	1,121,590	-334,219
Malta	23,307	2,181,930	-2,158,623
Netherlands	24,788,339	99,607,498	-74,819,159
Poland	72,783,557	4,957,266	67,826,291
Portugal	1,312,961	4,424,046	-3,111,085
Romania	1,883,730	5,417,231	-3,533,501
Slovakia	504,589	800,342	-295,753
Slovenia	4,144,098	542,422	3,601,676
Spain	25,240,250	18,973,996	6,266,254
Sweden	11,538,978	40,129,914	-28,590,936

## 6.2 Background data

### Background to 4.6 & 4.7

EU electricity prices for industrial consumers, in €/KWh

	2022-S1
Belgium	0.2349
Bulgaria	0.2084
Czechia	0.1904
Denmark	0.3516
Germany	0.2616
Estonia	0.1950
Ireland	0.2417
Greece	0.3210
Spain	0.2255
France	0.1520
Croatia	0.1755
Italy	0.2949
Cyprus	0.2921
Latvia	0.1512
Lithuania	0.2182
Luxembourg	0.1404
Hungary	0.1928
Malta	0.1479
Netherlands	0.2084
Austria	0.1940
Poland	0.1674
Portugal	0.1459
Romania	0.2793
Slovenia	0.1933
Slovakia	0.2592
Finland	0.1002
Sweden	0.1397
EU27	0.2220
Iceland	0.0934
Norway	0.1833

Postal rates, 2022

	Nominal price for a domestic standard letter	Nominal price for letter mail within Europe
Austria	0.85	1.00
Belgium	1.89	2.23
Bulgaria	0.56	1.18
Croatia	0.86	1.86
Cyprus	0.41	0.64
Czech Republic	1.01	1.52
Denmark	3.90	4.84
Estonia	1.50	1.90
Finland	3.45	2.05
France	1.43	1.65
Germany	0.85	1.10
Greece	1.90	2.00
Hungary	0.56	1.99
Iceland	1.49	1.76
Ireland	1.25	2.20
Italy	2.80	3.50
Latvia	1.20	1.61
Lithuania	0.55	0.81
Luxembourg	0.80	1.05
Malta	0.30	0.59
Netherlands	0.96	1.55
Norway	1.87	2.76
Poland	0.99	1.75
Portugal	0.74	3.25
Romania	0.79	2.03
Slovakia	1.00	1.50
Slovenia	0.67	2.37
Spain	0.75	1.65
Sweden	1.28	2.56
Switzerland	1.02	1.66
United Kingdom	1.11	2.15
European average	1.25	1.89



## 6.2 Background data

### Background to 4.8

#### VAT rates, 2022

	Exceptions				
	VAT standard rate, generally applicable to printed products	VAT printed books	VAT printed magazines	VAT printed newspapers	VAT electronic books, magazines, newspapers
Austria	20%	10%	10%	10%	10%
Belgium	21%	6%	0%	0%	6%
Bulgaria	20%	20%	20%	20%	9%
Croatia	25%	5%	5%	5%	5%
Cyprus	19%	5%	5%	5%	19%
Czech Republic	21%	10%	10%	10%	10%
Denmark	25%	25%	25%	0%	25%
Estonia	20%	9%	9%	9%	20%
Finland	24%	10%	10%	10%	10%
France	20%	5.5%	2.1%	2.1%	5.5%
Germany	19%	7%	7%	7%	7%
Greece	24%	6%	6%	6%	24%
Hungary	27%	5%	5%	5%	5%
Ireland	23%	0%	9%	9%	9%
Italy	22%	4%	4%	4%	4%
Latvia	21%	12%	12%	12%	21%
Lithuania	21%	9%	5%	5%	21%
Luxembourg	17%	3%	3%	3%	3%
Malta	18%	5%	5%	5%	5%
Netherlands	21%	9%	9%	9%	9%
Norway	25%	0%	0%	0%	0%
Poland	23%	5%	5%	8%	5%
Portugal	23%	6%	6%	6%	6%
Romania	19%	5%	5%	5%	19%
Slovakia	20%	10%	20%	20%	10%
Slovenia	22%	9.5%	9.5%	9.5%	9.5%
Spain	21%	4%	4%	4%	4%
Sweden	25%	6%	6%	6%	6%
Switzerland	20%	2.5%	2.5%	2.5%	7.7%
United Kingdom	20%	0%	0%	0%	0%



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