2018 INTERGRAF ECONOMIC REPORT

The evolution of the European graphic industry

INTERGRAF AISBL
European Federation for Print and Digital Communication

Foreword

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 as well as print buyers.

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, economic data and forecasts 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. The 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 new 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 at the beginning of each relevant chapter.

We are thankful to Smithers Pira for their contribution in Chapter 3.

Information in the market reports (Chapter 4) is from Eurostat and from recognised European trade associations (CEPI, EUROGRAPH, EUPIA, FEP) and from WAN-IFRA.

We are grateful to our Member Federations who contribute with qualitative and quantitative data to the country reports (chapter 5). The general economic information is from DG Economic and Financial Affairs of the European Commission (OECD for Norway) and the data provided in the profiles are from Eurostat.

Chapter 6 includes the supporting data used in the different chapters.

We are thankful to the members of the Intergraf Economic and Statistics Working Party for their valuable comments in the elaboration of this report.

Liability
The information given in the report has been established to our best knowledge and is as accurate as possible. The textual parts reflect views of the contributors, which are not necessarily those of Intergraf.

Intergraf is not responsible for the use which might be made of the information contained in the report. Intergraf accepts no liability for business decisions based on the content of the report. These remain the total responsibility of users of the information.

INTERGRAF, the voice of the European printing industry

Intergraf represents 22 national printing federations in 20 countries in Europe. Intergraf's main task is to promote and protect the interests of the printing and digital communication industries, working with the European Institutions, and to enhance the sector's competitiveness through lobbying, informing and networking.

Lobbying

Intergraf covers a wide range of European policies related to the graphic industry. Intergraf represents the interests of the printing industry and interacts with several different Directorates General at the European Commission as well as with the European Parliament.

Informing

Intergraf is the source of information for its members regarding the different policies of the European Union affecting the printing industry. Our members receive information on legislative and regulatory processes concerning competitiveness, environment, social issues, health & safety, statistics and other relevant matters.

Networking

Intergraf provides its members with contacts to other federations across Europe through meetings and conferences as well as expert working groups which ensure a close participation of its members in the process of European policy making and on market issues. Moreover, Intergraf has 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 printing industry.

For more information on Intergraf and its Member Federations, please visit the Intergraf website: *www.intergraf.eu*

1. GENERAL ECONOMIC SITUATION

Sources

1.1: Economic outlook, OECD annual projections, March 2018
Interim economic assessment, OECD, March 2018

1.2: OECD database
Winter forecast 2018, European Commission, Economic and Financial Affairs, February 2018

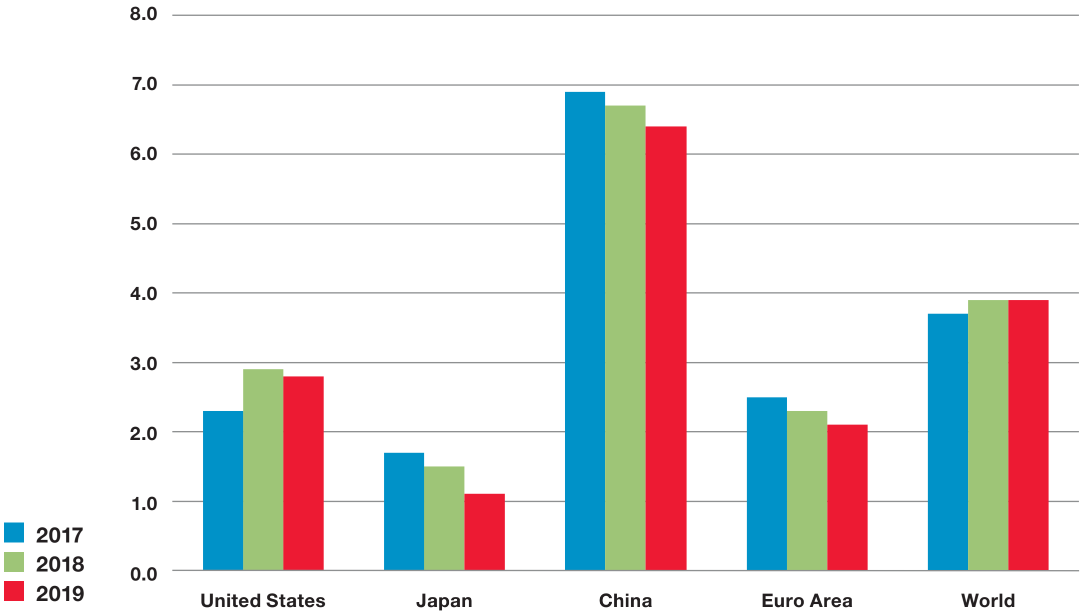
1.3: Eurostat
DG Economic and Financial Affairs

Note

: = data not available

1.1 Global economic situation

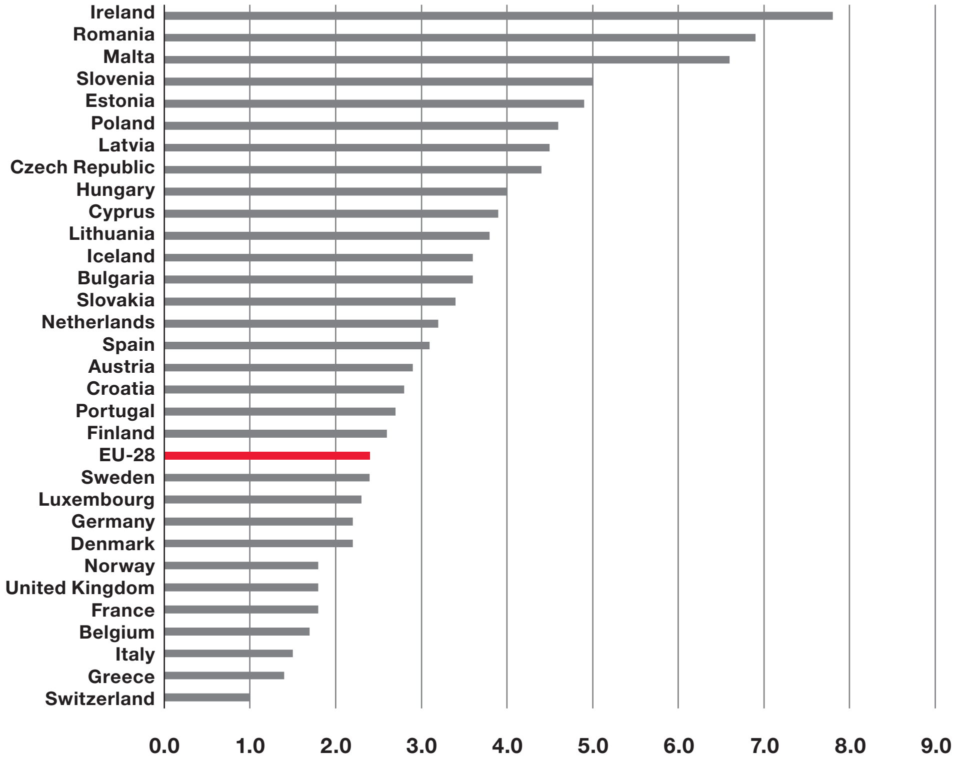
Projections in real GDP growth, OECD Economic Outlook, March 2018



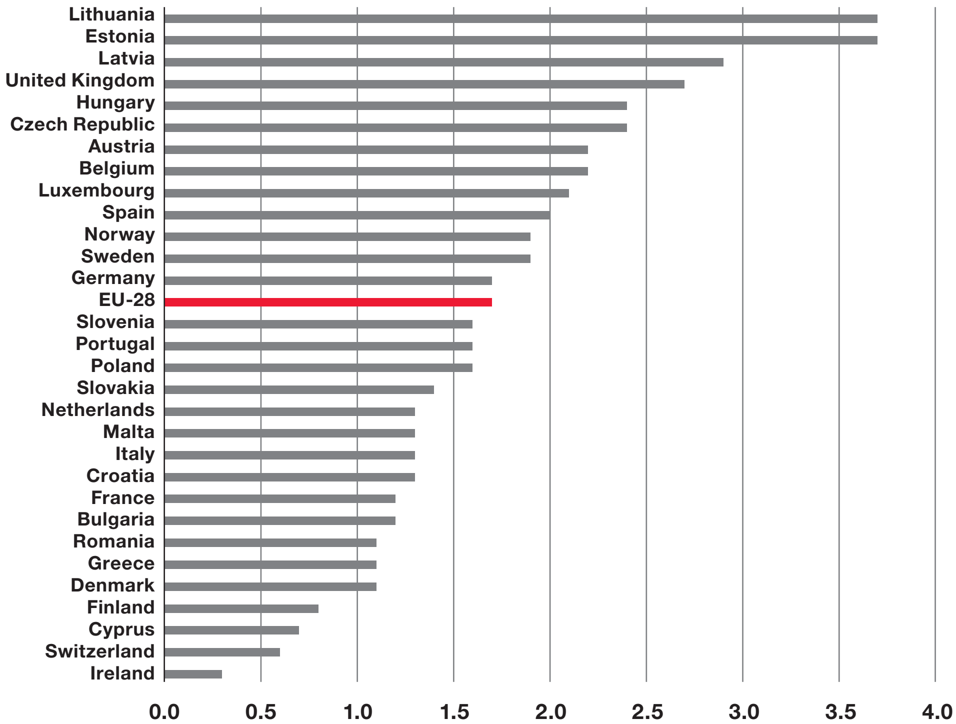
- Global GDP growth is estimated at 3.7% in 2017, the strongest outcome since 2011, with positive growth surprises in the Euro area, China, Turkey and Brazil.
- Industrial production, investment and trade growth have rebounded and business and consumer confidence remain elevated.
- The world economy will continue to strengthen in 2018 and 2019, with global GDP growth projected to rise to about 4%, from 3.7% in 2017.
- Stronger GDP growth is being accompanied by solid job creation although the recovery in employment remains uneven.
- In the United States, GDP growth is projected to pick up to between 2.8-2.9% over 2018-2019. Tax reductions and higher government expenditure reinforce the momentum in domestic demand from strong confidence, solid job creation, past gains in household wealth and the rebound in oil production.
- Growth surprised on the upside in China in 2017, helped by a strong rebound in exports, but is set to soften to just below 6.5% in 2019. Macroeconomic and regulatory policies are gradually becoming more restrictive, the working age population is now declining and credit conditions are less expansionary. Regulatory efforts are continuing to reduce financial risks, deal with overcapacity in some sectors and improve environmental quality.
- GDP growth in Japan is set to remain at around 1.5% in 2018 before easing to around 1% in 2019, supported by improved export growth, especially in Asian markets, and the additional spending announced in the recent supplementary budget.

1.2 European economic situation

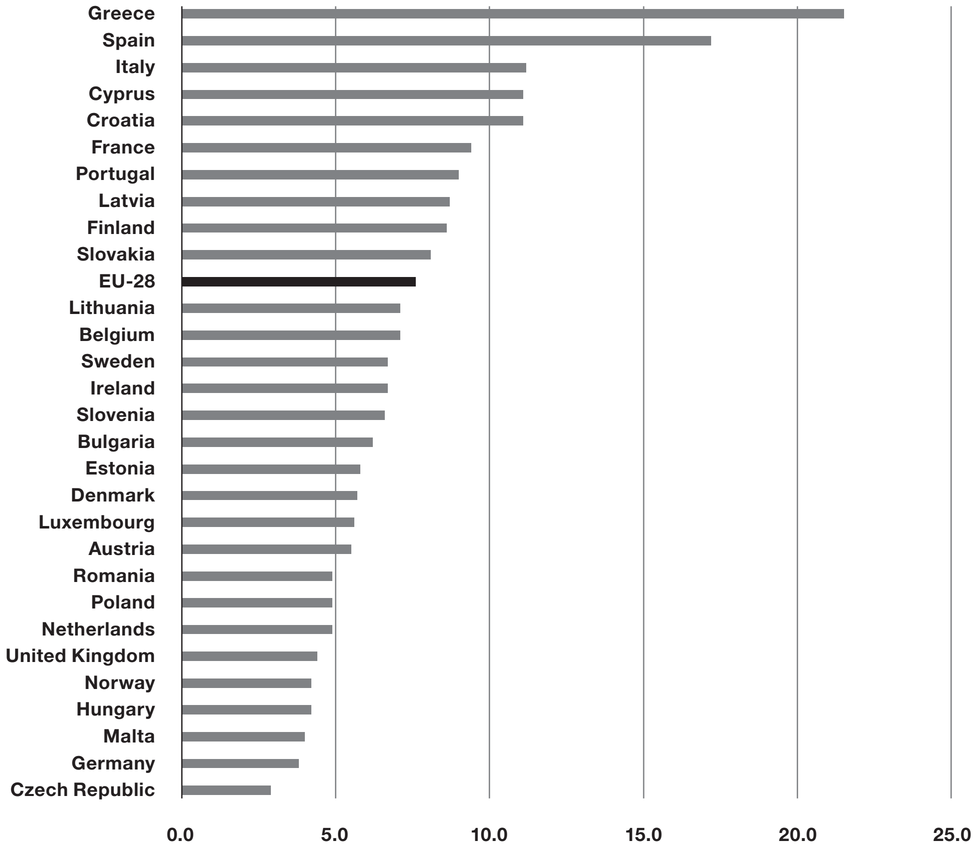
GDP growth rate, 2017, in %



Inflation rate, 2017, in %



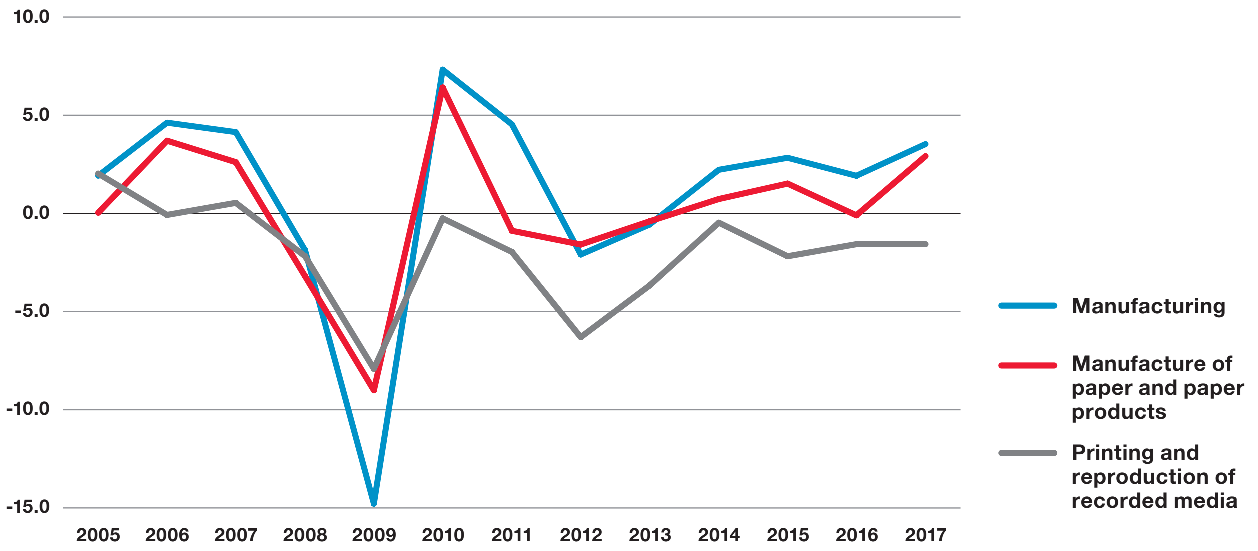
Unemployment rate, 2017, in %



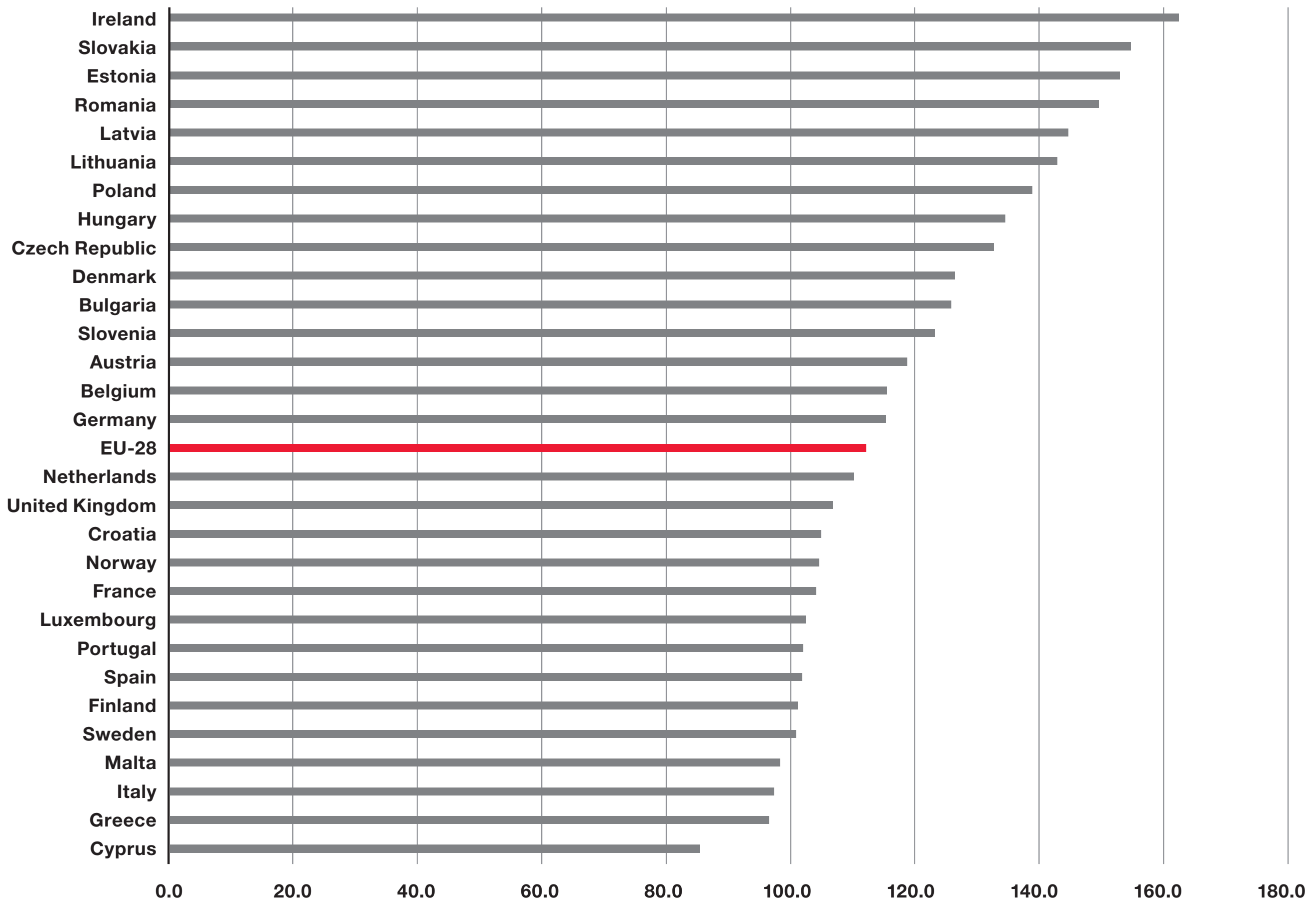
- GDP growth rates for the EU beat expectations with an estimated growth rate of 2.4% in 2017, the fastest pace in a decade.
- This robust performance is set to continue in 2018 and 2019 with growth of 2.3% and 2.0% respectively.
- This is a result of both stronger cyclical momentum in Europe, where labour markets continue to improve and economic sentiment is particularly high, and a stronger than expected pick-up in global economic activity and trade.
- Strong demand, high capacity utilisation and supportive financing conditions are set to favour investments.
- Inflation, which reached 1.7% in 2017, continues to reflect the significant influence of energy prices and is forecast to rise modestly.
- Labour market conditions have improved across all Member States though significant differences remain. Although unemployment continues to fall, long-term unemployment remains above its pre-crisis level. There are growing signs of labour shortages in some Member States and sectors, implying that employment growth is set to moderate in the future.

1.3 European industrial production

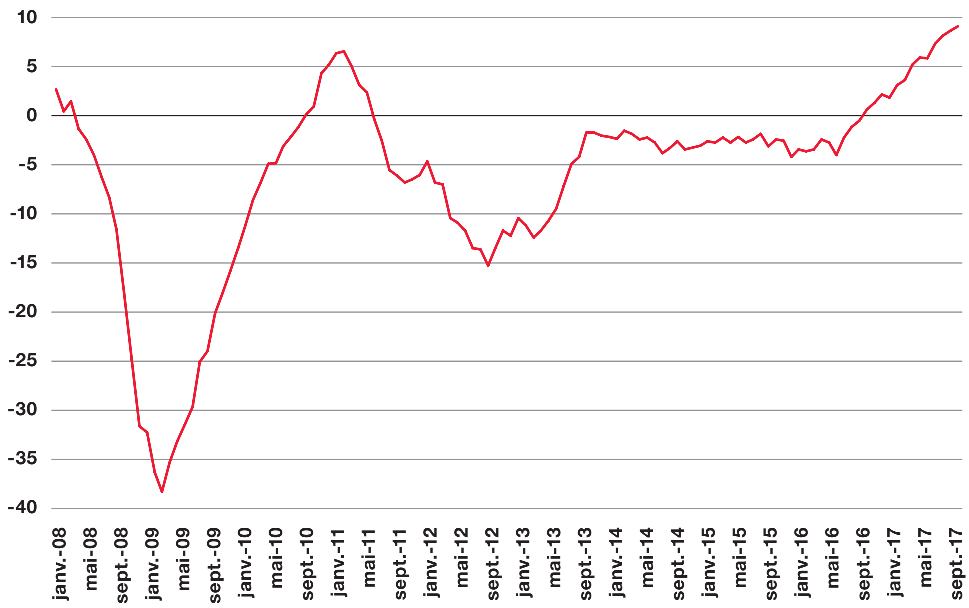
Industrial production, % change compared to the previous year, 2005-2017, EU-28



Industrial production index, European manufacturing sector, EU-28, 2017, calendar adjusted data, 2010=100



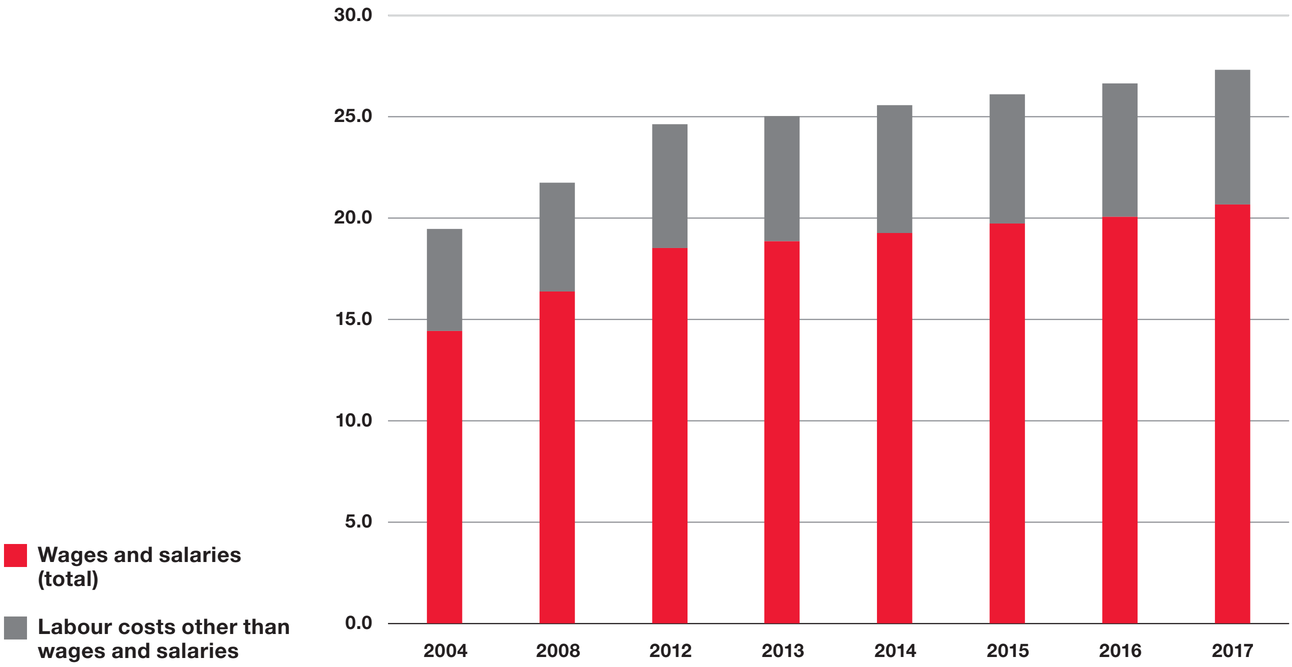
Industrial confidence, 2008 - 2017



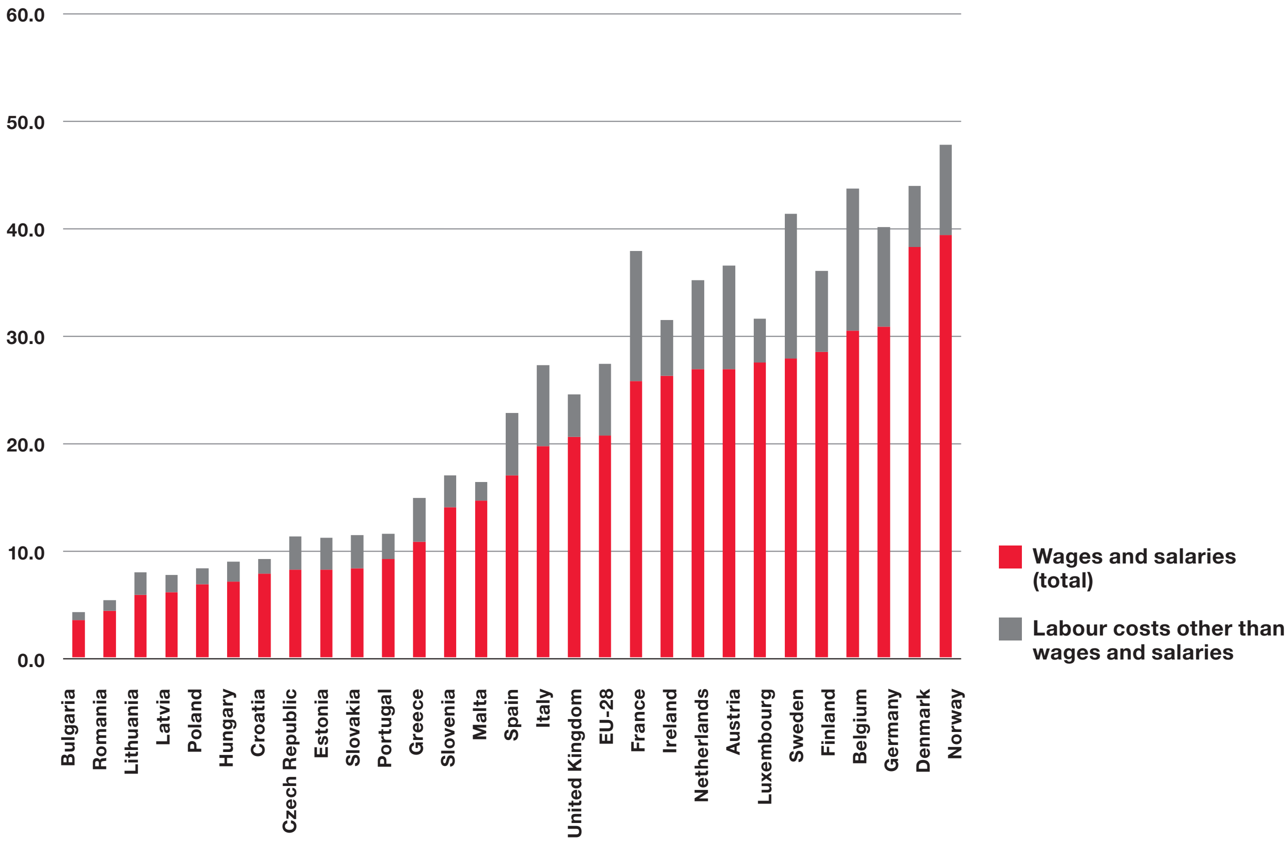
- Industrial production in the European manufacturing industry has increased by 3.5% in 2017 compared to 2016. However, for the printing and recorded media industry, industrial production has decreased by 1.6%.

- Industrial confidence has significantly increased since mid-2016.

Hourly average labour costs in the European manufacturing industry, in €, 2004-2017



Hourly labour costs for the European manufacturing industry, 2017



- Labour costs in the manufacturing industry have increased by 2.6% in 2017 compared to 2016 and by 10.9% compared to 2012.

- The average hourly labour cost in the manufacturing industry in 2017 reached 27.4€ (20.6€ of wages and salaries and 6.7€ of other labour costs) and ranged from 4.9€ to 42.5€.

- The highest total labour costs in the manufacturing industry in 2017 have been registered in Denmark, Belgium and Sweden. The lowest labour costs are registered in Bulgaria and Romania.

2. EUROPEAN GRAPHIC INDUSTRY

Sources
Eurostat

Notes
: = data not available
italic = Intergraf calculation

2.1 Profile of the European graphic industry

Classification: NACE Rev 2

18 Printing and reproduction of recorded media

This division includes printing of products, such as newspapers, books, periodicals, business forms, greeting cards, and other materials, and associated support activities, such as bookbinding, plate-making services, and data imaging. The support activities included here are an integral part of the printing industry, and a product (a printing plate, a bound book, or a computer disk or file) that is an integral part of the printing industry is almost always provided by these operations.

Processes used in printing include a variety of methods for transferring an image from a plate, screen or computer file to a medium, such as paper, plastics, metal, textile articles, or wood. The most prominent of these methods entails the transfer of the image from a plate or screen to the medium through lithographic, gravure, screen or flexographic printing. Often a computer file is used to directly "drive" the printing mechanism to create the image or electrostatic and other types of equipment (digital or non-impact printing).

Though printing and publishing can be carried out by the same unit (a newspaper, for example), it is less and less the case that these distinct activities are carried out in the same physical location.

This item also includes: This division also includes the reproduction of recorded media, such as compact discs, video recordings, software on discs or tapes, records etc.

This item excludes: This division excludes publishing activities

18.1 Printing and service activities related to printing

This group includes printing of products, such as newspapers, books, periodicals, business forms, greeting cards, and other materials, and associated support activities, such as bookbinding, plate-making services, and data imaging. Printing can be done using various techniques and on different materials.

18.11 Printing of newspapers

- printing of other periodicals, appearing at least four times a week

This class excludes:
- publishing of printed matter, see 58.1
- photocopying of documents, see 82.19

18.12 Other printing

This class includes:
- printing of magazines and other periodicals, appearing less than four times a week
- printing of books and brochures, music and music manuscripts, maps, atlases, posters, advertising catalogues, prospectuses and other printed advertising, postage stamps, taxation stamps, documents of title, cheques and other security papers, smart cards, albums, diaries, calendars and other commercial printed matter, personal stationery and other printed matter by letterpress, offset, photogravure, flexographic, screen printing and other printing presses, duplication machines, computer printers, embossers etc., including quick printing
- printing directly onto textiles, plastic, glass, metal, wood and ceramics

The material printed is typically copyrighted.

This class also includes:
- printing on labels or tags (lithographic, gravure printing, flexographic printing, other)

This class excludes:
- manufacture of stationery (notebooks, binders, registers, accounting books, business forms etc.), when the printed information is not the main characteristic, see 17.23
- publishing of printed matter, see 58.1

18.13 Pre-press and pre-media services

This class includes:

- composing, typesetting, phototypesetting, pre-press data input including scanning and optical character recognition, electronic make-up
- preparation of data files for multi-media (printing on paper, CD-ROM, Internet) applications
- plate-making services including image setting and plate setting (for the printing processes letterpress and offset)
- cylinder preparation: engraving or etching of cylinders for gravure printing
- plate processing: “computer to plate” CTP (also photopolymer plates)
- preparation of plates and dies for relief stamping or printing
- preparation of:
- artistic works of technical character, such as preparation of lithographic stones and wood blocks
- presentation media, e.g. overhead foils and other forms of presentation
- sketches, layouts, dummies, etc.
- production of proofs

This class excludes:

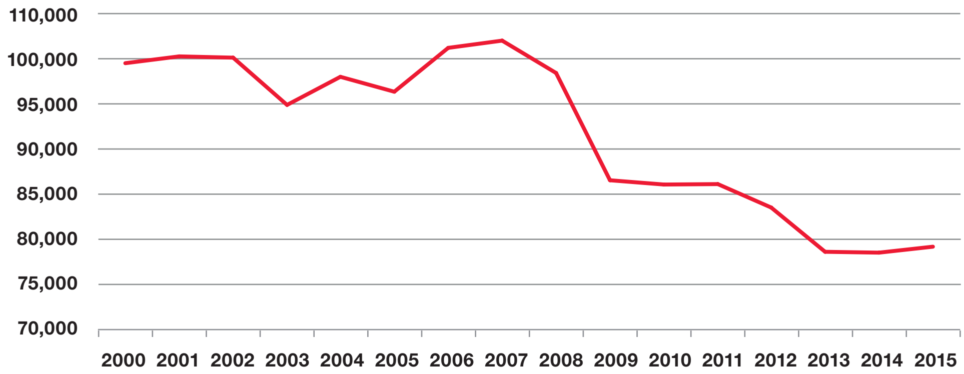
- specialised design activities

18.14 Binding and related services

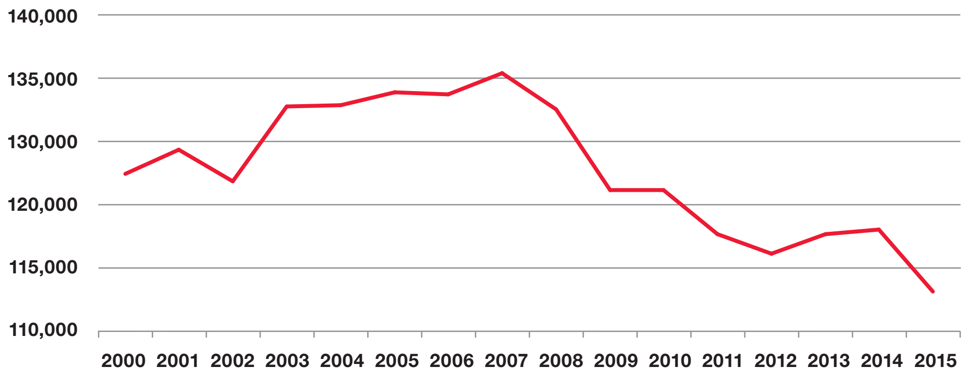
This class includes:

- trade binding, sample mounting and post press services in support of printing activities, e.g. trade binding and finishing of books, brochures, magazines, catalogues, etc., by folding, cutting and trimming, assembling, stitching, thread sewing, adhesive binding, cutting and cover laying, gluing, collating, basting, gold stamping; spiral binding and plastic wire binding
- binding and finishing of printed paper or printed cardboard, by folding, stamping, drilling, punching, perforating, embossing, sticking, gluing, laminating
- finishing services for CD-ROMs
- mailing finishing services such as customisation, envelope preparation
- other finishing activities such as die, sinking or stamping, Braille copying

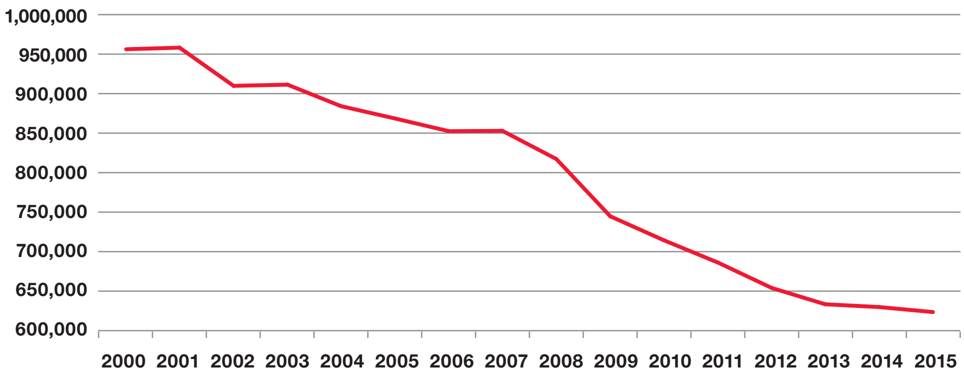
Turnover, EU graphic industry, 2000-2015, in million €



Number of EU graphic companies, 2000-2015



Number of employees in the EU, graphic industry, 2000-2015



- Approximately 622,000 employees were working in the European printing industry in 2015. 61,000 employees were working in pre-press and 33,000 were working in binding and related services.

- In 2015, the European printing industry counted more than 110,000 companies, which generated a turnover of around € 80 billion.

- After 2 years of an increasing trend, the number of printing companies in Europe has decreased by approximately 5% compared to 2014.

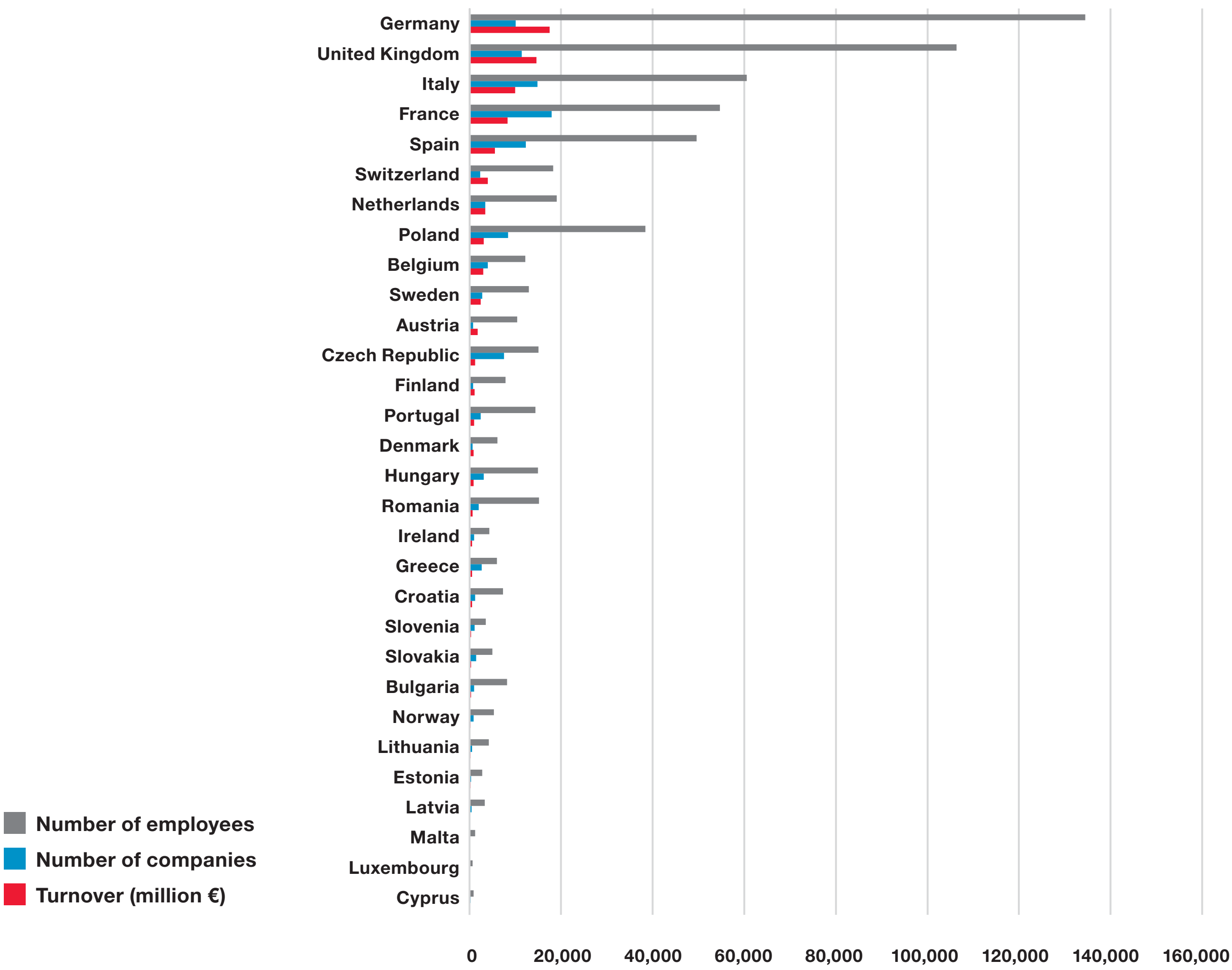
- The number of employees in the European printing industry decreased by approximately 1% in 2015. The turnover on the other hand increased by 1%.

- Over the past decade (2005-2015), the number of employees in the printing industry has decreased by almost 30%. The turnover decreased by 20% and the number of companies fell by 14%.

- National data show that the largest decreases since 2014 in the number of employees have been registered in Slovakia and Greece (approximately -10%).

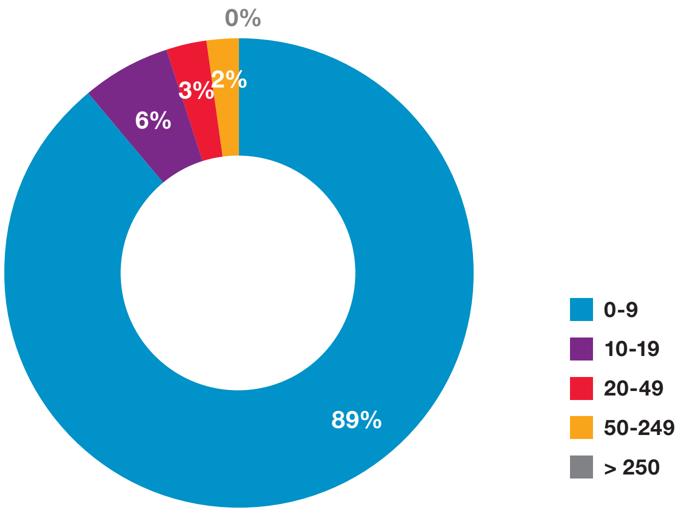
- The highest increases in 2015 in the number of companies have been registered in Hungary (+12%).

Profile of the European printing industry, EU-28, 2015



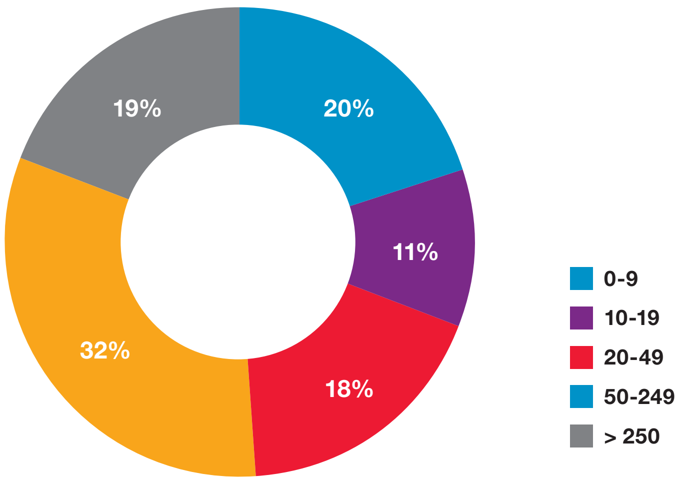
- Germany, the UK and Italy generate the largest turnover and register the highest number of employees in Europe whereas France, Italy and Spain have the highest number of printing companies in Europe.
- Germany generated in 2015 a turnover of € 17.5 billion. This is double the one of France, which ranks fourth.
- France has the highest number of printing companies (more than 17,000), which is well above the number of companies in Germany (10,000).
- The German printing industry employed approximately 134,000 workers in 2015. This is more than two times more than France.

Size of the european printing industry (number of employees), EU-28, 2015



- 89% of European printing companies have fewer than 10 employees.
- 95% of European printing companies are SMEs employing fewer than 20 employees.
- Less than 1% of European printing companies employ more than 250; this corresponds to approximately 90 companies in the European Union.
- 6% of European printing companies have more than 20 employees.

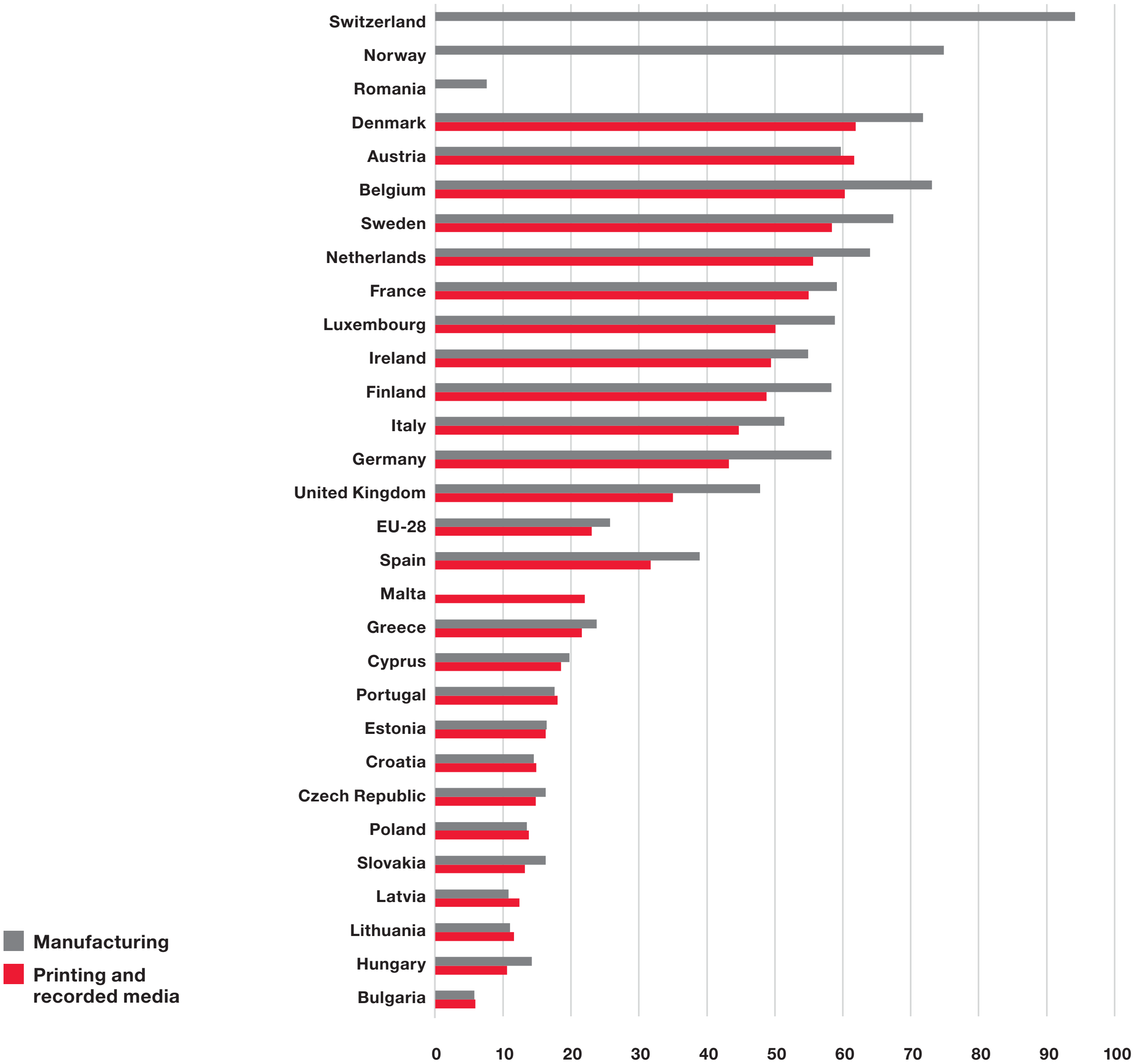
Distribution of the European printing industry turnover (by number of employees), EU-28, 2015



- 89% of European printing companies having fewer than 10 employees generate 19% of the European printing industry turnover.
- Whereas, the less than 1% European printing companies employing more than 250 workers generate 19% of the total turnover.
- Half of the European printing industry turnover is generated by companies with fewer than 20 employees and the other half is generated by companies employing more than 20 workers.

2.2 Labour costs

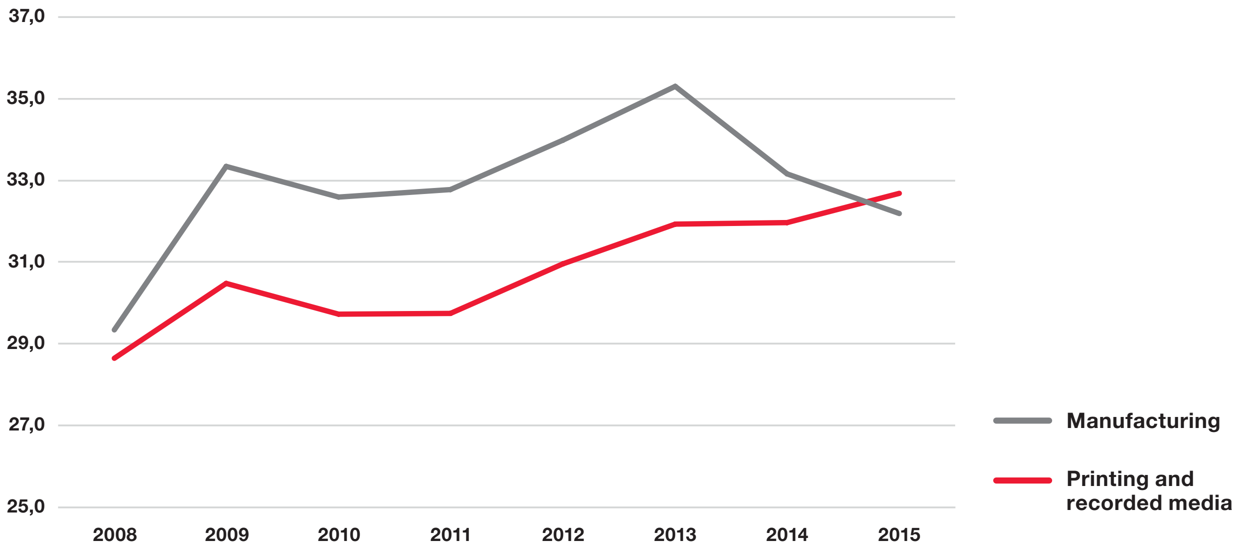
Labour costs per full time equivalent employee, in thousand €, 2015



- In the printing and recorded media industry, Denmark and Austria have the highest labour costs per employee (full time equivalent). Bulgaria has the lowest labour costs, which are more than 10 times less than in Denmark or Austria.
- On average, labour costs in the printing and recorded media industry are 10% lower than in the whole manufacturing industry. The difference can reach up to 35% in Hungary, the UK and Germany.

Sources
Eurostat

Labour costs per full time equivalent employee, EU-28, in thousand €, 2008-2015



- Labour costs in the printing and recorded media industry have increased by 14% between 2008 and 2015.
- Following the economic crisis of 2008, costs have decreased in 2010 and 2011 but have since then continuously increased, contrary to labour costs in the manufacturing industry which have decreased by 8.7% since 2013.

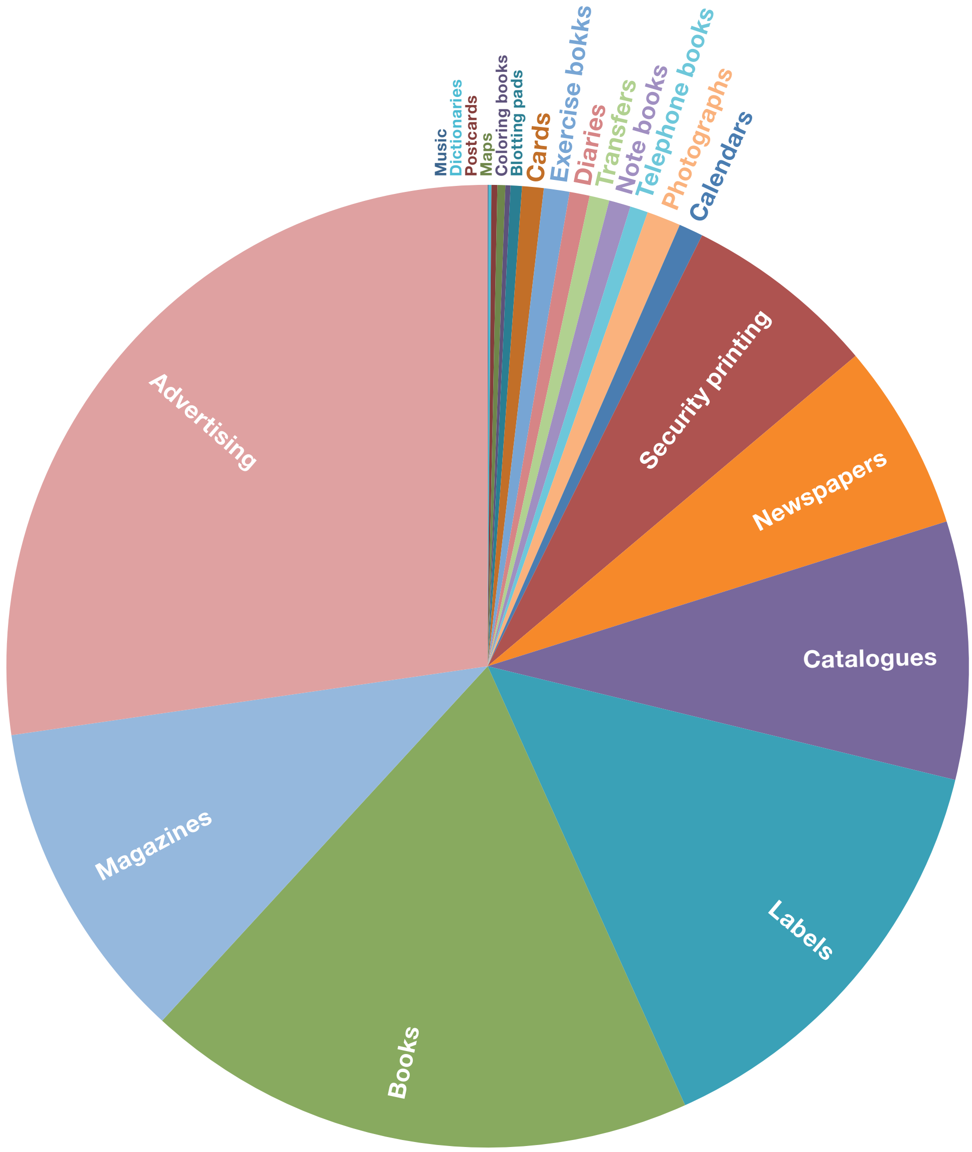
2.3 Production value

Classification: PRODCOM

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.

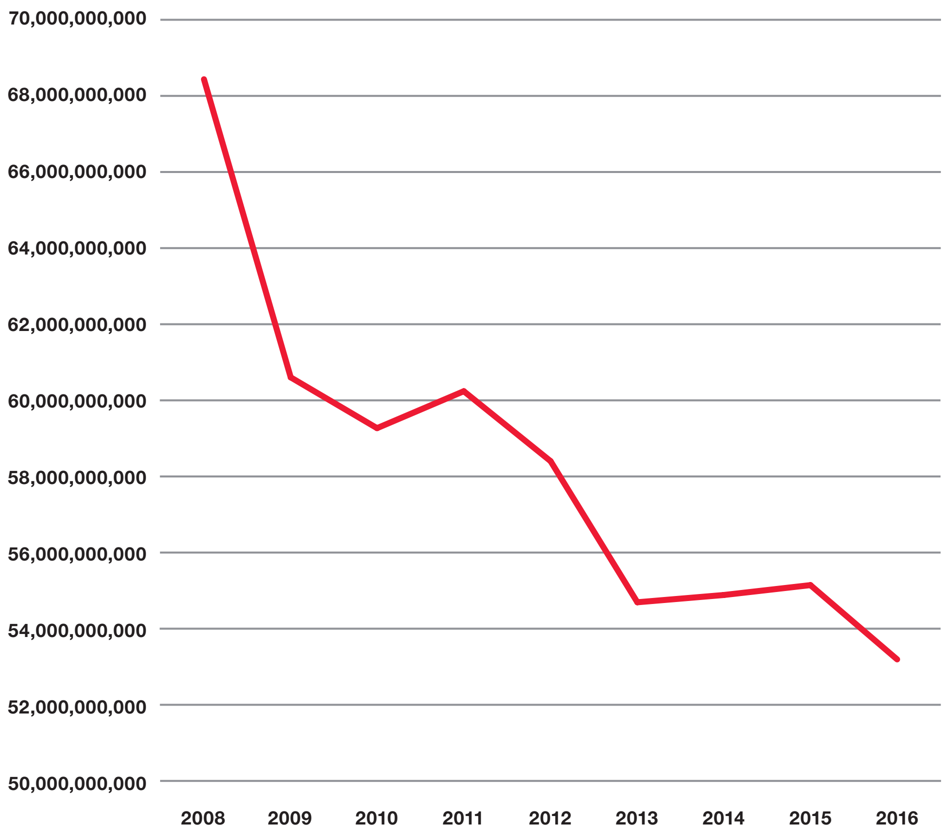
Sources
Eurostat (PRODCOM), figures are in €, by value of sold production

Share in production value, 2016, %



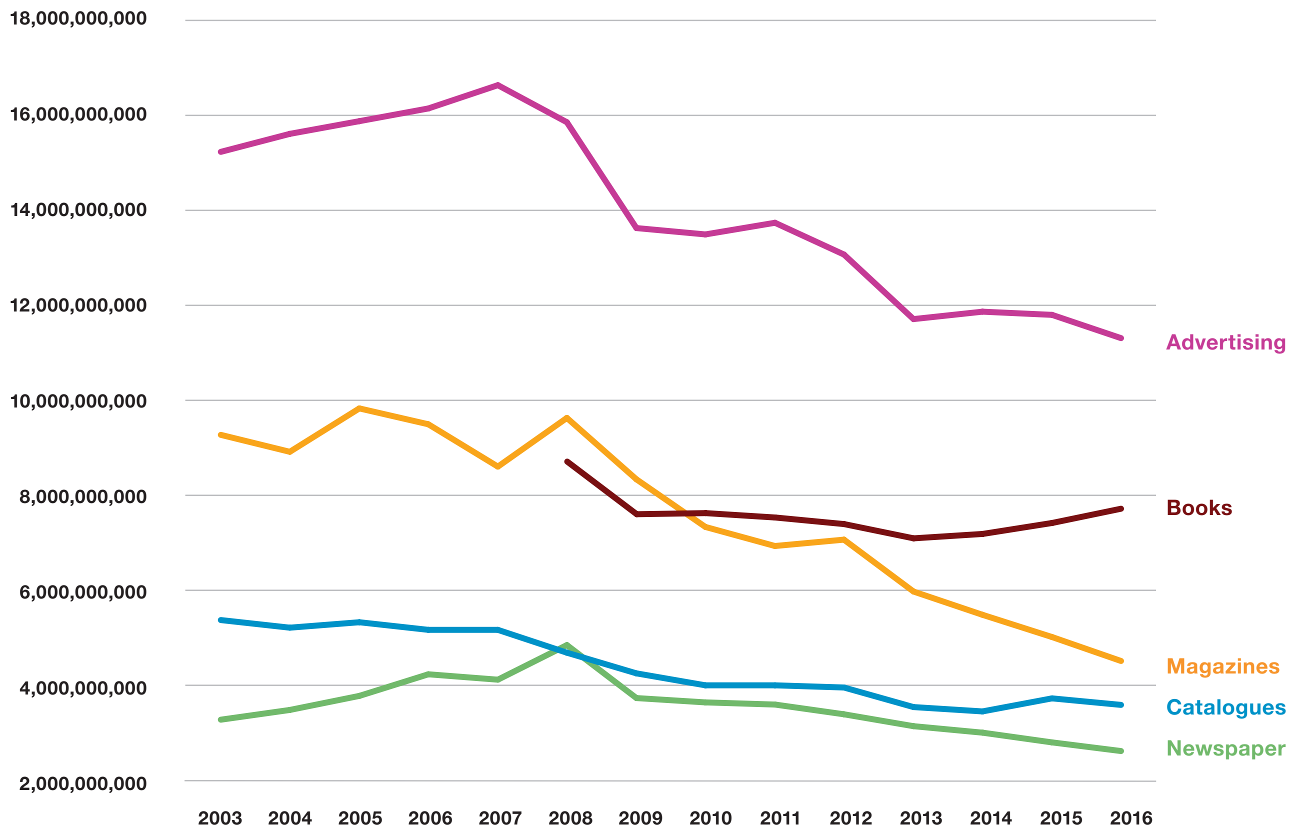
- In 2016, approximately €53 billion worth of printed products were produced in the European Union.
- From the identified categories of printed products, 27% of European production in value is classified as advertising; this corresponds to approximately € 11.3 billion. Catalogues represent 8.7% of European production of printed products.
- Magazines and newspapers represent respectively 10.9% (€ 4.5 billion) and 6.3% (€ 2.6 billion). Books has a share of 18.6%; € 7.7 billion worth of books are printed in Europe.
- 14.5% of the production belongs to the category of labels, i.e. € 6 billion. Security printed products represent 6.5% of the total production of printed products in Europe in 2016.

Evolution of production value of total printed products, 2008-2016, in €



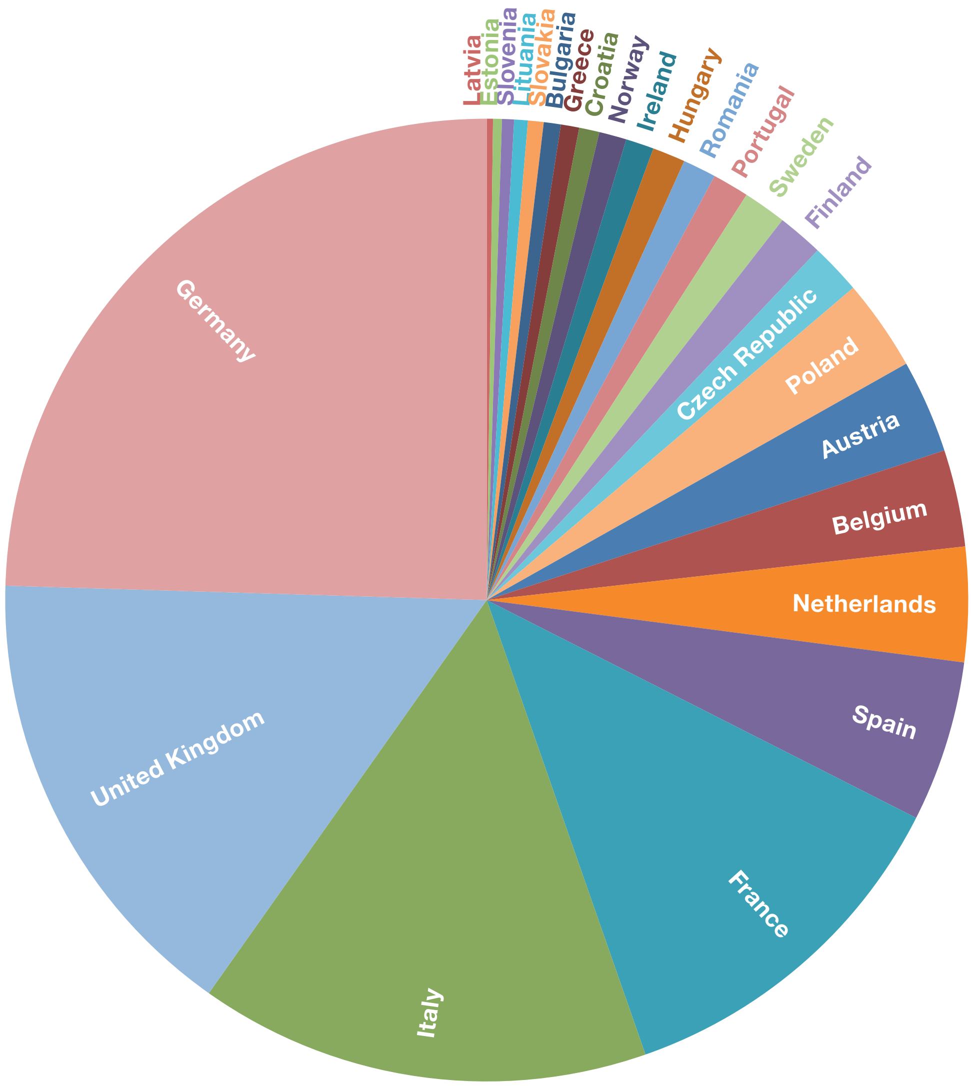
- The total production of printed products in 2016 declined compared to 2015; it decreased by 3.5%.
- After a sharp fall from 2008 to 2010 of 13.4%, the European production of printed products steadily decreased, including sharp falls in 2011 and 2012.
- The total production of printed products overall decreased by 22.3% between 2008 and 2016.

Evolution of production value of selected printed products, 2003-2016, in €



- As in 2015, books is the only category (note: printed packaging is not included) which registered a production increase in 2016 compared to 2015 (+3.7%).
- Magazines registered the sharpest decrease (-10%).
- Newspapers' production fell by 6.3%, advertising material by 4.1% and catalogues by 3%.
- Taking 2008 as a reference, the production of magazines decreased by 52.7%, newspapers by 45.2%, advertising material by 28.4%, catalogues by 22.7% and books by 11.1%.

Production value of printed products, 2016, in %



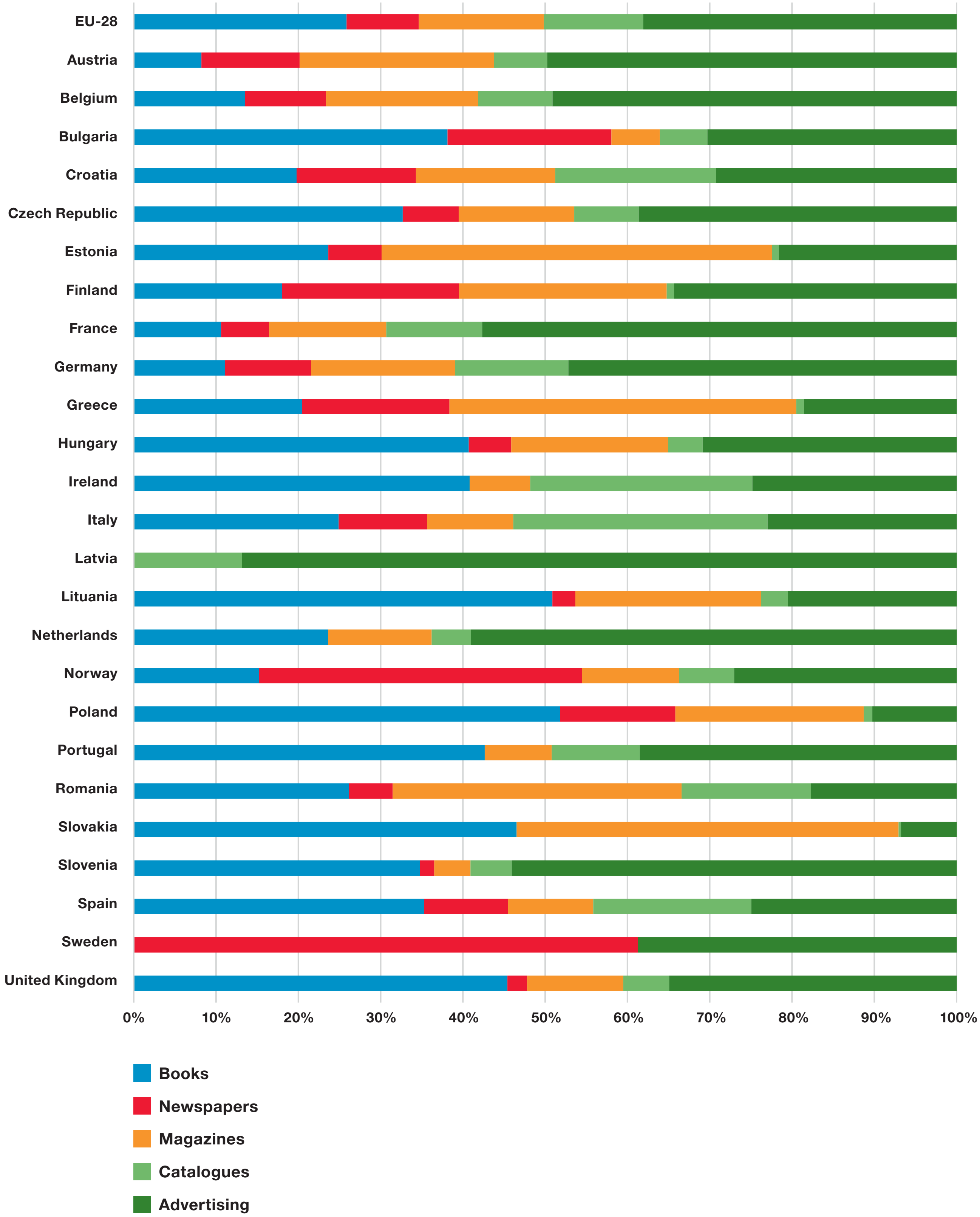
- The main producer of printed products in Europe is Germany with a total production value of € 12.4 billion. This corresponds to a quarter of the total European production value. Germany is the largest producer of printed advertising (€ 4 billion), which represents one third of its print production. Germany is also the main producer of magazines (€ 1.5 billion).

- With a total production value of € 7.9 billion, the UK is the second largest producer in Europe. The UK dedicates the largest share of its production to books and advertising. The UK is the largest producer of books in the European Union (€ 2.2 billion).

- Italy has a total production of 7.7%. This represents 14.5% of the total European production. Its production value is mainly allocated to catalogues and books.

- 11.7% of European printed products are produced in France; this is worth € 6.1 billion. A quarter of France's production is allocated to advertising material.

Production value of printed products, 2016, in €



2.4 Trade figures

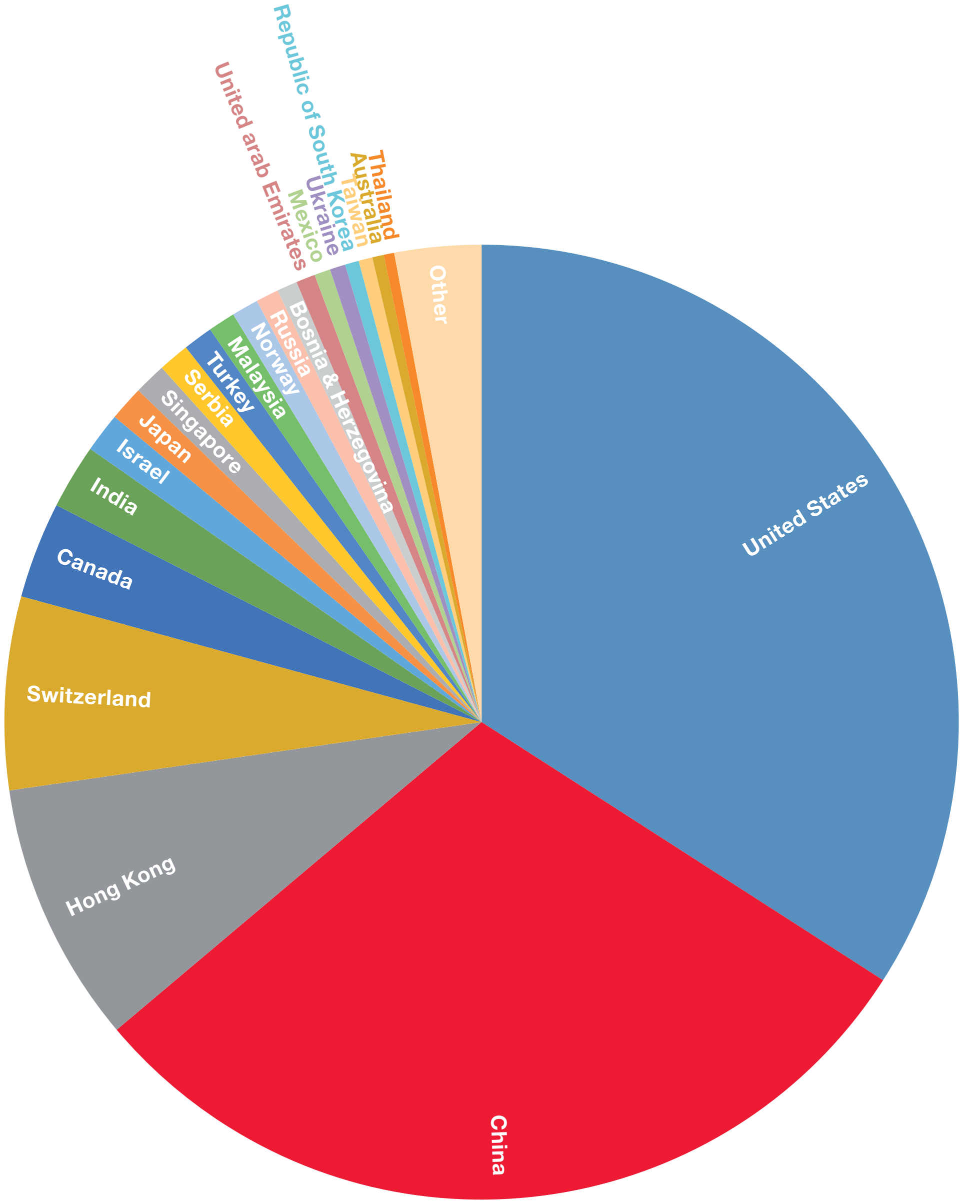
Classification: Combined nomenclature

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)**

Sources

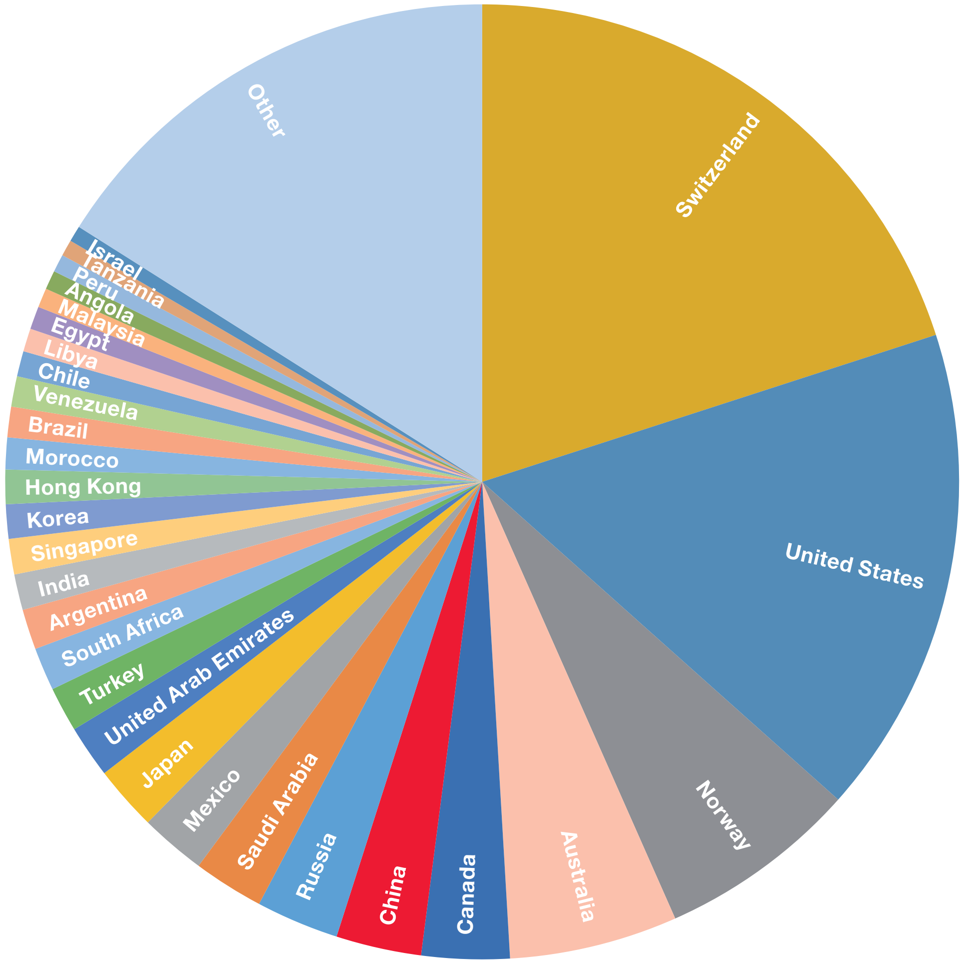
Eurostat, data are in €

Trade partners, imports to the EU, 2017



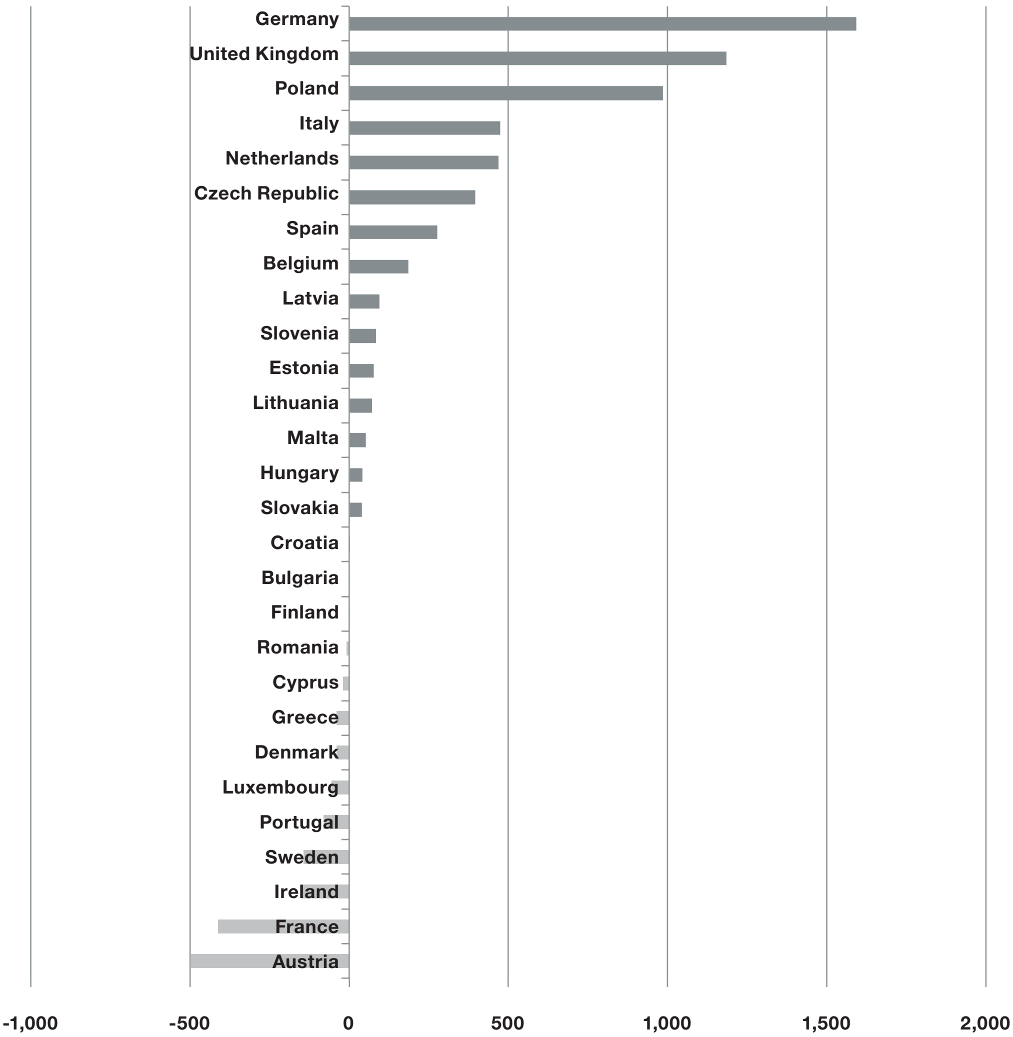
- In 2017, the European Union imported € 2.9 billion worth of printed products from non-EU countries. Half of these (€ 1.5 billion) are books.
- About one third of the total EU imports originated from China (see Chapter 2.4) and another third came from the United States (see Chapter 2.5).
- The next largest importers in 2017 were Hong Kong, Switzerland, Canada and India.

Trade partners, exports from the EU, 2017



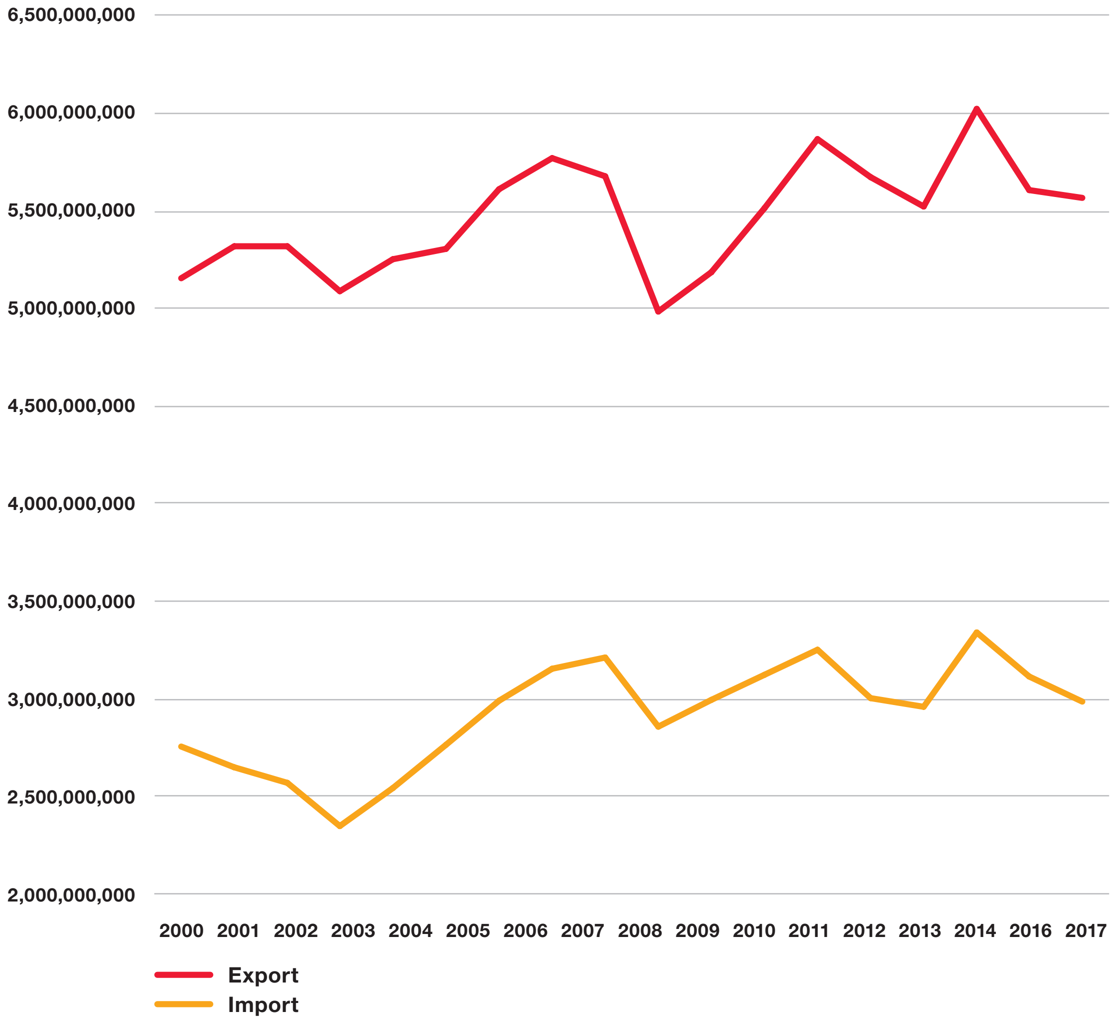
- The European Union exported € 5.5 billion worth of printed products to non-EU countries.
- 39% of the EU exports were books.
- The main benefiters of EU exports in 2017 were Switzerland (20%), the US (16%) and Norway (6%).

Trade balance, printed products, intra- and extra-EU, in million €, 2017



- Considering both intra- and extra-EU trade, the main net exporters of printed products in 2017 were Germany, the UK and Poland.
- With € 1.6 billion, Germany had the largest trade surplus in the EU in 2017. Germany is the largest exporter of printed advertising and catalogues.
- The UK had a surplus of € 1.2 billion surplus which is mainly owed to the trade of books.
- Poland surplus was € 0.82 billion. It is due to its exports of books and magazines.
- With a trade deficit of respectively € 0.49 and € 0.41 billion, Austria and France were the largest net importers of printed products in 2017. The deficit of Austria is mainly due to its net imports of books and France of its imports of printed advertising and catalogues.

EU trade of printed products to non-EU countries, 2000-2017, in €

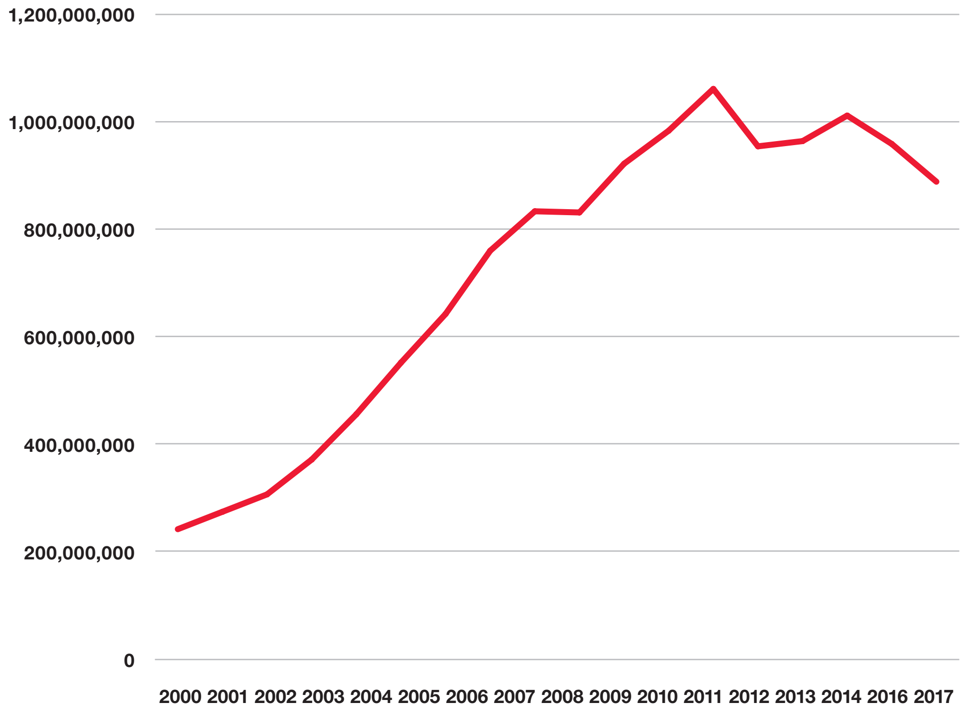


- Although the large majority of its trade is intra-EU, the European Union is a net exporter of printed products to non-EU countries with a trade surplus of € 2.5 billion.
- After an increase in both exports and imports of printed products in 2015, both flows decreased since then by 7.5% for exports and 10.5% for imports.

2.5 Imports from China

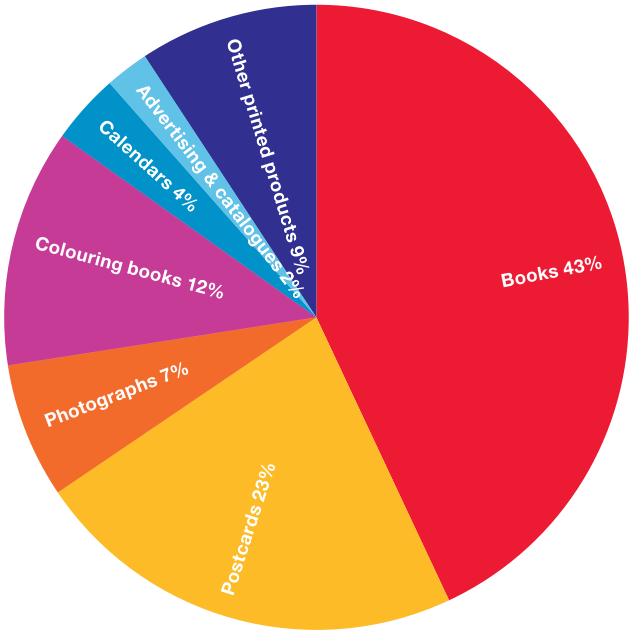
Sources
Eurostat, figures are in €

Imports from China, 2000-2017, in €



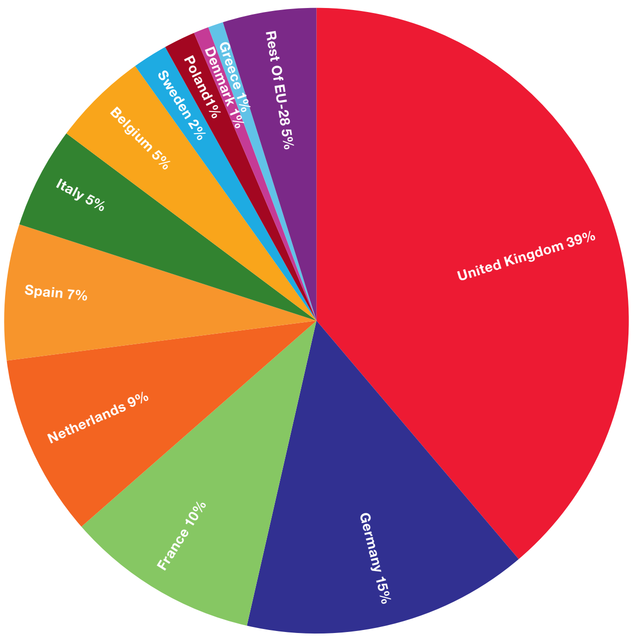
- In 2017, the European Union has imported € 888 million worth of printed products from China.
- Imports have decreased by 7.3% compared to 2016 and by 16.3% since 2012.
- Chinese imports of printed products have increased by 270% since 2000.

Main printed products imported from China to the EU, 2017



- Books account for 43% of the total imported printed products to the EU from China.
- Postcards (23%) and colouring books (12%) are the next most imported printed products from China in value.

Main EU importers of printed products from China, 2017

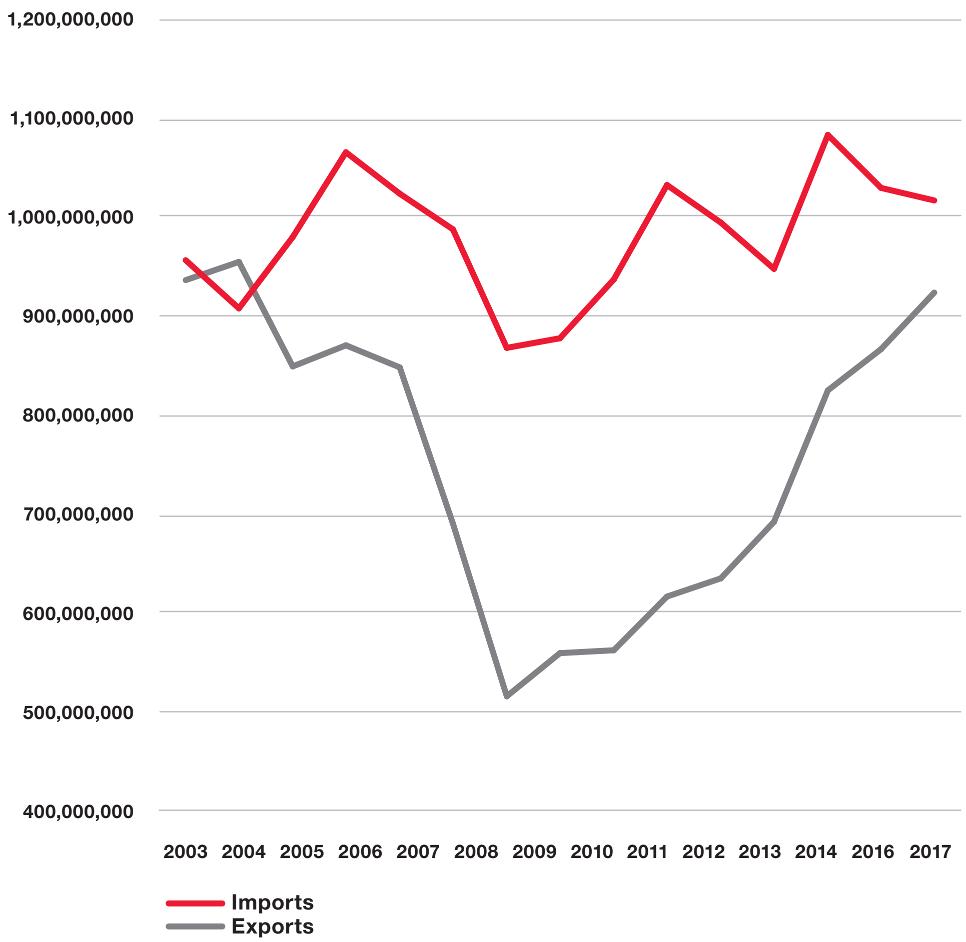


- 39% of Chinese imports are directed to the UK, i.e this corresponds to € 344 million worth of printed products. 15% go to Germany, 10% to France and 9% to the Netherlands.

2.6 Trade with the US

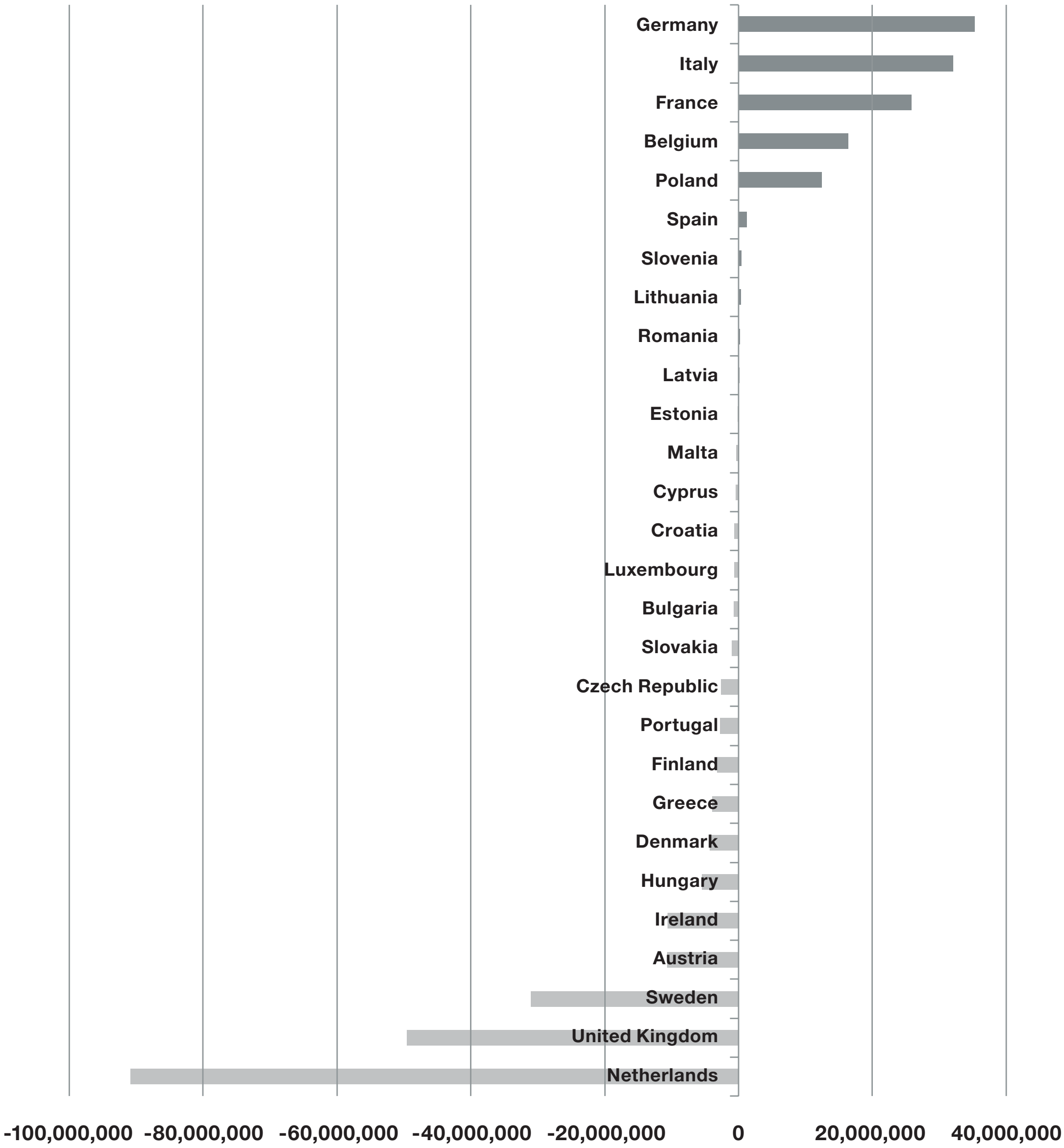
Sources
Eurostat, figures are in €

Trade of printed products with the US, 2003-2017, in €



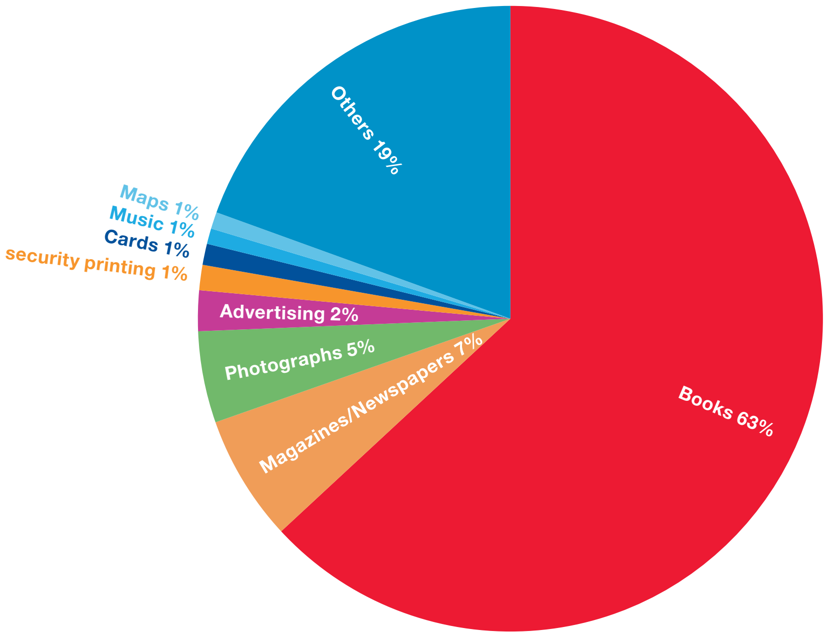
- Over more than a decade, the EU has had a negative trade balance with the US. After a sharp decrease of European exports in 2009, the trade balance progressively improved thanks to continuous increased exports.
- In 2017, the trade balance with the US reached a deficit of € 94 million.

Trade balances of EU countries with the US, 2017, in €



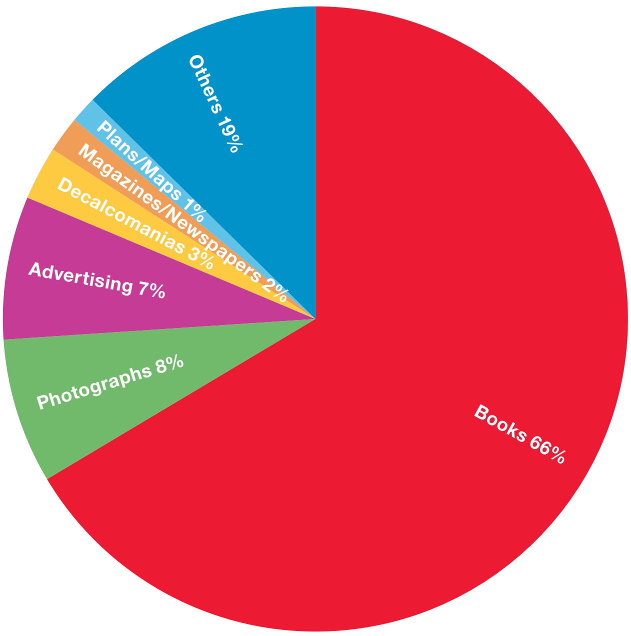
- Italy and Germany were the main net exporters to the US market in 2017.
- In 2017, the Netherlands were the main net importer of printed products from the US, followed by the UK and Sweden.

Imported printed products from the US, 2016



- 63% of imported printed products from the US are books. They represent a value of more than € 642 million.
- Magazines represent 7% of the total imported printed products from the US.

Exported printed products from the US, 2016



- 66% of exported printed products to the US are books. They represent a value of more than € 613 million.
- Photographs represent 8% and advertising materials represent 7% of the total exported printed products to the US.

3. EUROPEAN PRINT MARKET REVIEW

Contribution from
Smithers Pira, April 2018

Sources
Smithers Pira

Introduction

In 2017, European printing and printed packaging output grew by two per cent in current terms to €160 billion, although taking out the effect of inflation and exchange rate movements, revenues actually declined by 0.2% in real terms in comparison with 2016. As in previous years, there was growth in packaging revenues (incl. labels), rising by 2.3% in real terms, offset by a 2.8% equivalent decline in graphic printing output.

After a number of years of declines, the latest Eurostat estimates of the number of commercial printing establishments in the EU rose by 2,000 to 112,000 in 2016 on the back of some increases reported in Central European countries including Poland. This figure is still down on the 120,000 establishments estimated in 2014 though. Employment though continued to fall and revised numbers show employment declining from 755,400 in 2012 to 705,730 in 2015 and 699,288 into 2012. Although digital printing may open up more opportunities for smaller, leaner operations, further industry consolidation is likely as larger printing companies seek to scale up operations, undertake strategic investments and improve efficiencies are making it harder and harder for traditional commercial printing operations to complete.

The European Print Market

Basis of presentation

Smithers Pira 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. Some extracts here are based on our report on The Future of Global Printing to 2022, themselves based on updates undertaken to the database towards the end of 2017.

We 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 2017 covered prospects for digital print for packaging, analogue vs digital printing, package printing, printed labels, security printing and signage, in addition to other projects on key print process areas 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 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 Pira 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/converting 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.

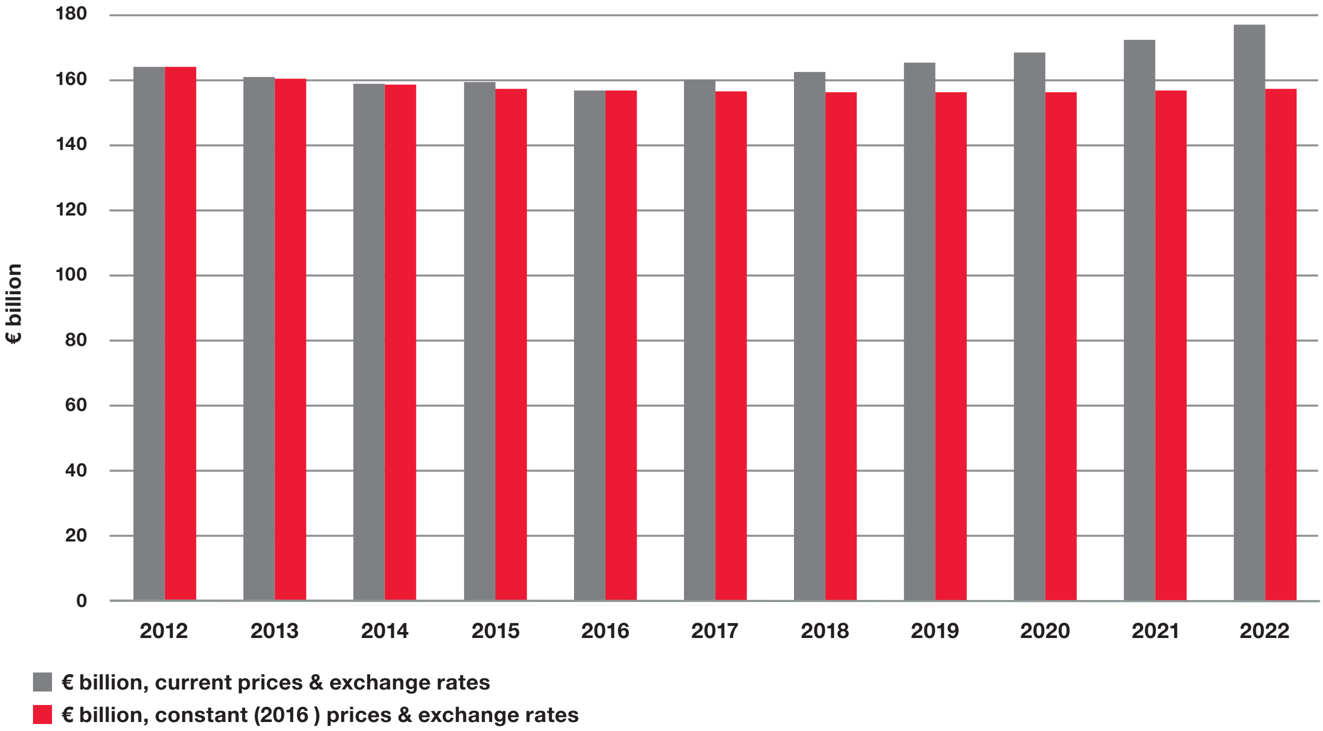
For the purposes of this publication, value data has been converted into Euros. In some cases data is presented in terms of constant 2016 prices and exchange rates to reflect real changes in demand after the effects of inflation (as measured by the consumer prices index) and exchange rate movements. Volume data is generally presented in terms of tonnages unless otherwise stated.

Market overview

European printing output, including package printing output, grew by an estimated 2.0% in current terms to €160 billion in 2017, but fell by 0.2% in real value terms after taking into account the effects of inflation and exchange rate movements. Package and label printing demand continued to grow steadily and is generally moving at or ahead of GDP growth trends. However, graphic printing markets continue to decline with a 2.8% fall in real terms during 2017.

Again, there was a marginally stronger performance in southern European markets in comparison to some in northern Europe as rebounding occurred in those countries hit the hardest by the Eurozone crisis. In Eastern Europe the market grew by 2.2% in real terms, and there was something of a rebound in Russian sales as measured in current price terms as the rouble strengthened against the euro .

FIGURE 1 European Printing & Printed Packaging Output, 2012-2022f

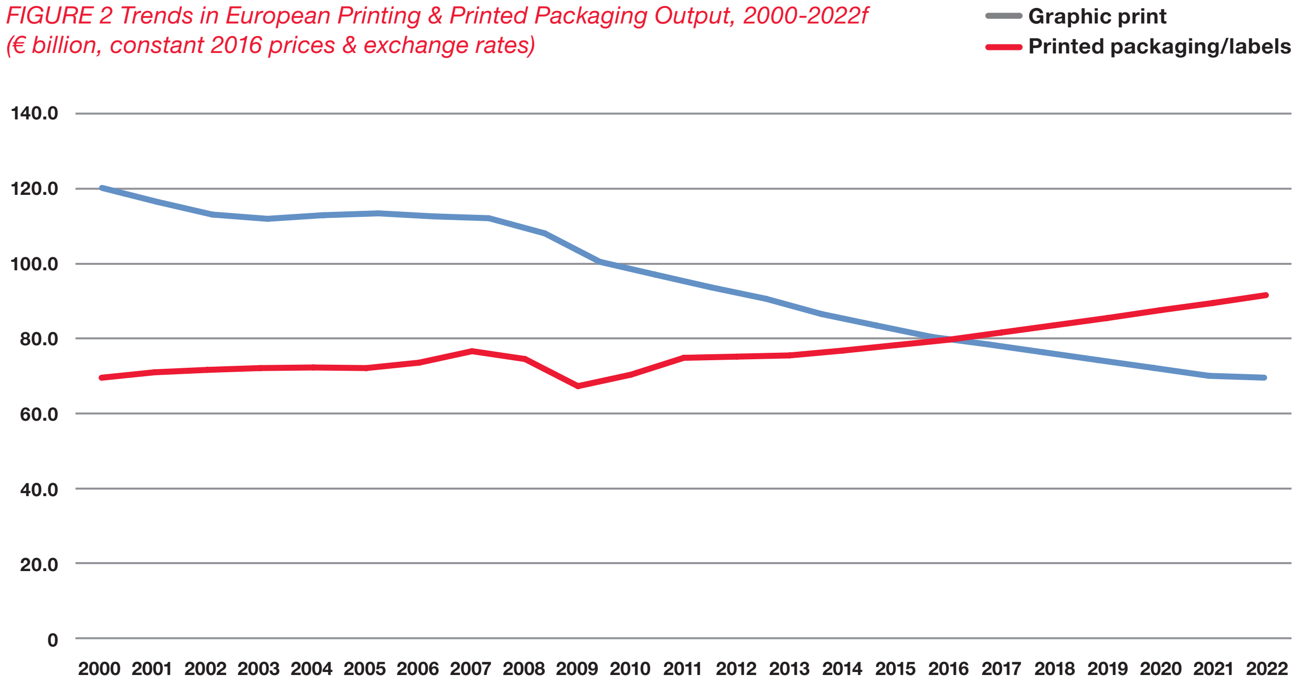


Note: constant price values show market data at 2016 prices, removing impact of inflation and exchange rate fluctuations from one year to the next
Source: Smithers Pira

Euro-Graph statistics for 2016 showed continuing declines in graphic paper shipments and demand in Europe, with overall volumes down 2.8% on 2015 after a 4.2% decline in 2015. Newsprint demand fell by a reported 7.6%, with coated paper demand also declining – by 2.2% for coated mechanical reels and 3.6% for coated woodfree. Across other grades, SC-magazine demand actually fell by 1.3% after a 2.4% increase in 2016, while consumption of other uncoated mechanical papers (including improved newsprint) was flat following on from 2.7% decline in 2016. After a decline of 4.1% in 2016, uncoated woodfree paper demand actually grew by 0.5%.

Efficiencies in printing production processes continue to be realised, and the value of printed output is not declining to the same extent as paper consumption. Nevertheless, print remains under pressure from digital media, particularly in the case of newspapers but also in other publication print areas, business print and also advertising.

FIGURE 2 Trends in European Printing & Printed Packaging Output, 2000-2022f (€ billion, constant 2016 prices & exchange rates)



Note: constant price values show market data at 2016 prices, removing impact of inflation and exchange rate fluctuations from one year to the next
Source: Smithers Pira

Out of overall estimated printing revenues of €160 billion in 2017, Western European countries contributed €136 billion, led by Germany (€32 billion), the UK (€22 billion) and France (€20 billion). Over the past five years demand for combined graphic print and printed packaging has declined by around €4 billion in current terms, but in real terms has declined by almost €10 billion. As time has moved on, average growth rates across Western Europe have come more into line alongside a partial recovery in those countries worst affected by the recession.

Of the €24 billion in Eastern European printing revenues in 2017, Russia and Poland between themselves accounted for half of the total at €8.6 billion and €6.6 billion respectively. In current terms Russian print revenues recovered as the rouble regained ground vs the euro although in real terms the value of printing output grew by only around one per cent. Overall print demand continues to hold up well in Central European countries like Poland while in the CIS the situation still remains challenging.

In real terms, growth of around 2.5% per annum is anticipated in printing revenues in Eastern Europe, but we still expect this to be value driven and driven by packaging rather than graphic print. In Western Europe, overall printing revenues are set to be broadly flat in real terms but grow in current terms, with growth in package and label printing offsetting declines elsewhere.

TABLE 1: European Printing & Printed Packaging Output by Country and by Region, 2012-2022f (€ billion)

Country	Current prices & exchange rates				Constant (2016) prices & exchange rates*			
	2012	2016	2017e	2022f	2012	2016	2017e	2022f
Western Europe	**140.45**	**135.09**	**135.63**	**145.33**	**143.78**	**135.09**	**134.30**	**132.22**
Germany	33.11	32.12	32.37	35.29	34.22	32.12	31.85	31.25
UK	23.16	22.15	21.64	23.24	23.99	22.15	22.11	22.04
France	20.43	19.62	19.90	21.56	20.81	19.62	19.62	19.60
Italy	18.69	17.72	17.86	18.78	18.91	17.72	17.62	17.31
Spain	10.90	10.97	11.16	12.61	10.99	10.97	11.01	11.44
Netherlands	5.97	5.32	5.32	5.55	6.08	5.32	5.26	5.08
Switzerland	4.60	4.90	5.00	5.07	5.01	4.90	4.85	4.73
Belgium	4.66	4.42	4.40	4.53	4.87	4.42	4.35	4.07
Sweden	4.47	3.79	3.71	3.89	4.24	3.79	3.70	3.38
Austria	3.64	3.63	3.65	3.89	3.83	3.63	3.59	3.44
Denmark	2.04	2.00	2.00	2.14	2.08	2.00	1.98	1.95
Norway	2.14	1.76	1.83	1.65	1.90	1.76	1.71	1.49
Finland	1.82	1.61	1.60	1.60	1.88	1.61	1.58	1.44
Greece	1.34	1.56	1.58	1.74	1.29	1.56	1.56	1.59
Ireland	1.56	1.50	1.53	1.57	1.57	1.50	1.49	1.48
Portugal	1.42	1.37	1.40	1.50	1.42	1.37	1.38	1.36
Others	0.50	0.64	0.67	0.71	0.67	0.64	0.63	0.59
Eastern Europe	**23.54**	**21.68**	**24.42**	**31.56**	**20.12**	**21.68**	**22.15**	**25.08**
Russia	9.38	6.86	8.63	11.06	7.07	6.86	6.98	8.08
Poland	5.02	6.10	6.56	8.55	4.81	6.10	6.25	7.14
Czech Republic	2.06	2.10	2.20	2.89	1.98	2.10	2.13	2.32
Hungary	1.27	1.26	1.31	1.57	1.21	1.26	1.29	1.42
Romania	0.94	1.07	1.11	1.42	0.94	1.07	1.09	1.20
Slovenia	0.59	0.60	0.62	0.70	0.59	0.60	0.61	0.63
Bulgaria	0.47	0.51	0.53	0.62	0.46	0.51	0.52	0.55
Others	3.81	3.18	3.45	4.73	3.07	3.18	3.27	3.74
Europe	**163.99**	**156.77**	**160.05**	**176.89**	**163.89**	**156.77**	**156.45**	**157.30**

Note: *removes impact of inflation and exchange rate fluctuations from one year to the next
Source: Smithers Pira

Print products

In line with recent years there have been continuing declines in output across most graphic printing area with magazines, newspapers, catalogues and directories again all down by around five per cent in real value terms. Advertising print declined more gradually, while book printing was down by around 3.5% after a more stable performance in 2016. Moves towards greater production efficiencies with book printing and growth of alternative media options will continue to impact the book printing business even as the novelty value of digital readers like Kindles seemingly wears off, and there is no evidence of the change in price positioning required for such products to rejuvenate the category.

Changes in the information landscape have had a massive impact upon graphic print demand over the past five to ten years. Predictions of the 'paperless office' late in the last century took time to have an impact, and there was perhaps a sense early on that the effects of computerisation would not be so significant as initially believed, but eventually the threat became more fully realised and business forms and cheques were among the first to witness major fall-offs in demand. It was not until late last decade that the recession, coupled with areas like online advertising and online media reaching critical mass, began to have a major impact upon print demand across the board.

In publishing, while it was clear that major players would find it difficult to find a way to make online versions of magazines and newspapers pay, the proliferation of competing information and entertainment sources meant that the shift to online arose irrespective of the best interests of the publishing industry. As consumers have spent increasing amounts of time digesting information online, so advertising euros have followed and big falls were recorded – across the globe – in newspaper and magazine advertising at the height of the recession in 2009, and this source of revenue for the publishing industry has been permanently damaged. In addition, business publishing has increasingly migrated to PDF and online alternatives.

The book publishing industry has been more successful in adapting to digital media with the adoption of the Kindle and similar readers, although as we say there is some evidence that their popularity is on the wane. Nevertheless, digital communications continue to have an impact, with online information sources leading to lower demand for technical and educational books, and the broader range of media options leading to book readership levels declining in most countries, particularly in younger age groups. Furthermore, the growth in offshore sourcing of printed books led to print jobs going outside of Europe, particularly in the case of the UK. That trend has continued to slow though, with the trend to shorter runs and JIT delivery leading to more print jobs going to local digital printing establishments.

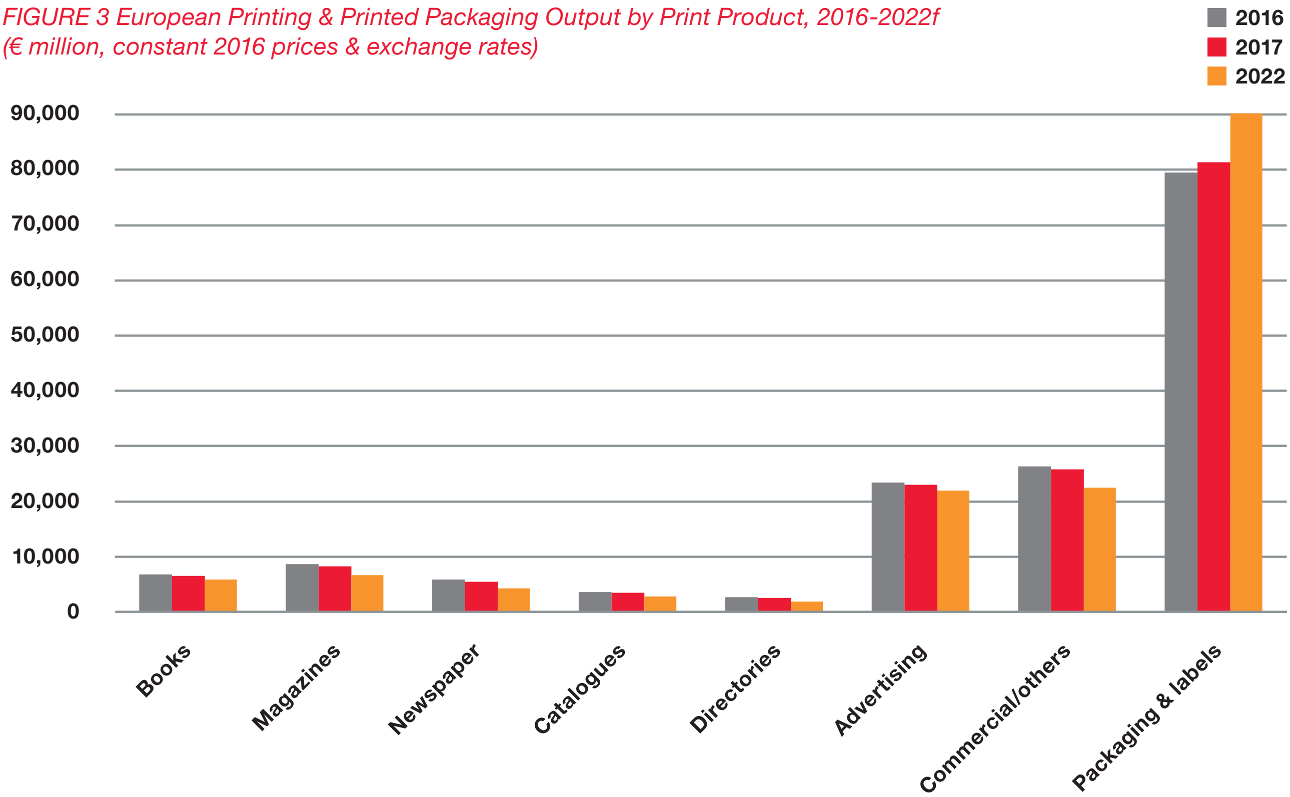
Across other areas, directories have become slimmer and slimmer or disappeared altogether as people have opted to get this kind of information online or via smartphones. The use of GPS in satellite navigation and on smart phones has replaced many road atlases and A-to-Z street maps. Smartphones and computers are increasingly the first sources of information for consumer products, and catalogue printing has been hit as a result – also affected by online purchasing.

Advertising print has generally been regarded as having the most potential for survival in the current media landscape. Certainly, closer analysis of the declines in coated and supercalendered papers in Europe in the past two years shows that these were driven mainly by the downturn in magazine printing output rather than advertising print, and advertising is set to outperform publication print going forward. Magazine printing revenues though seem to be in terminal decline, with another difficult year in 2017 with publishers placing increasing reliance on digital publishing revenues.

However, below-the-line advertising did not perform well during the recession – unlike in previous recessions – and while there would appear to be some potential for growth in areas like direct mail in Eastern Europe, overall it appears likely that printed advertising collateral volumes will continue to decline in Europe, albeit more gradually that in the case of other areas. PoS/signage has though performed relatively well in the past couple of years, but the major growth is likely to be in digital industrial print rather than graphic print in the years to come.

While graphic print is in decline, package printing revenues are forecast to grow, albeit steadily by around 2-3% per annum in real terms over the next five years with particularly strong growth occurring in flexible packaging. The labels market also has potential, and is being boosted by the growth in value-added digital printing.

FIGURE 3 European Printing & Printed Packaging Output by Print Product, 2016-2022f (€ million, constant 2016 prices & exchange rates)



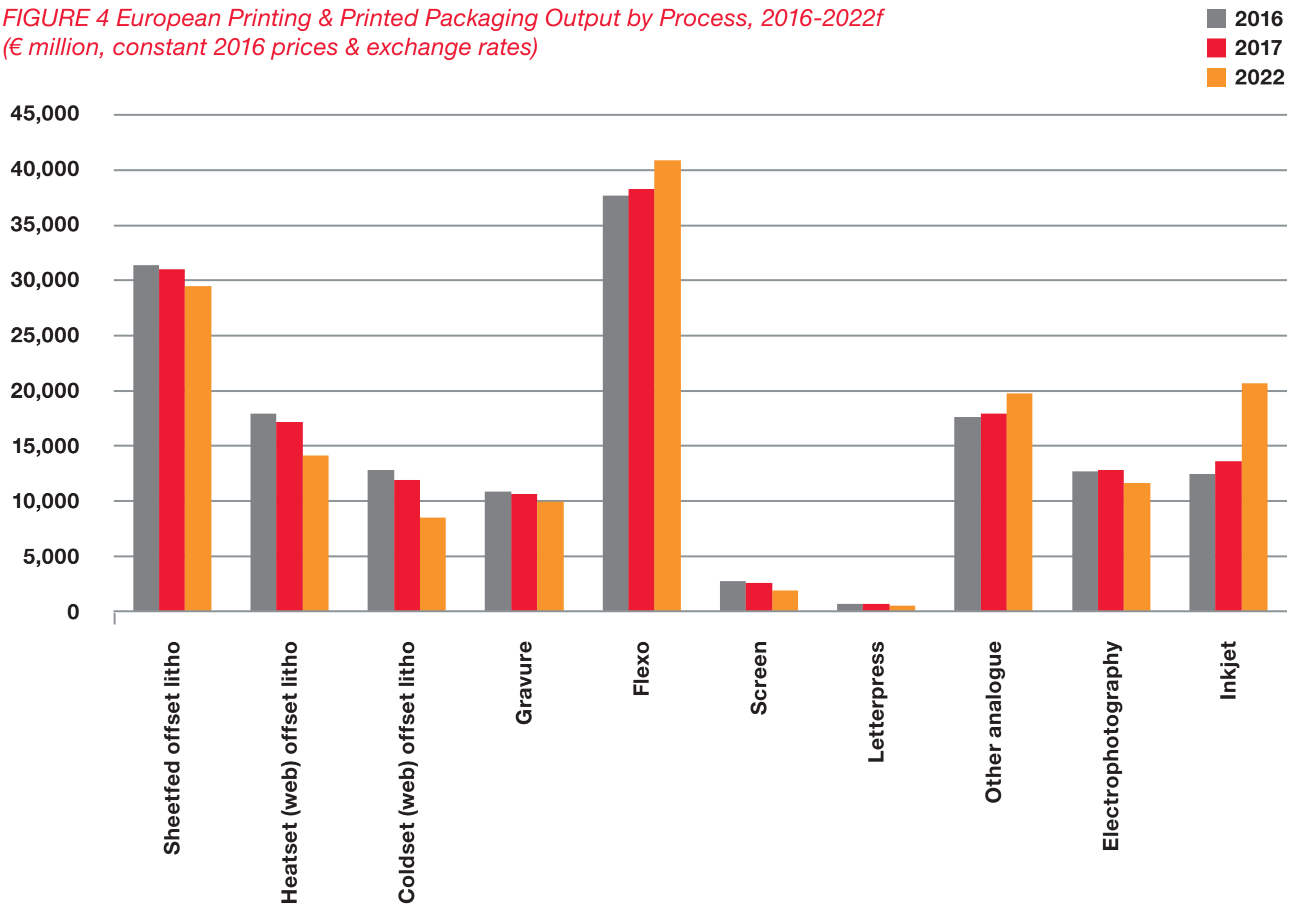
Note: constant price values show market data at 2016 prices, removing impact of inflation and exchange rate fluctuations from one year to the next
Source: Smithers Pira

Printing processes

Flexo has emerged as the single largest printing process sector during recent years ahead of sheetfed offset litho, with flexo printed output valued at €38.3 billion into 2017, mainly accounted for by package and label printing, with corrugated packaging representing the single largest element. Sheetfed offset printing output continues to be assisted by a recovery in carton printing, although even now declines elsewhere meant that printed output fell in real terms by 1.3% in 2017 to €31.0 billion. Declines in graphic print led to further falls in heatset and especially coldset web offset printing output (the latter down by seven per cent in real terms in 2017), and while growth in flexibles boosted gravure package printing output on the one hand, on the other hand further declines in catalogue and magazine printing led to a two per cent decline in gravure printing revenues in real terms in 2017 to €10.6 billion. Screen and letterpress printing revenues continue fall sharply.

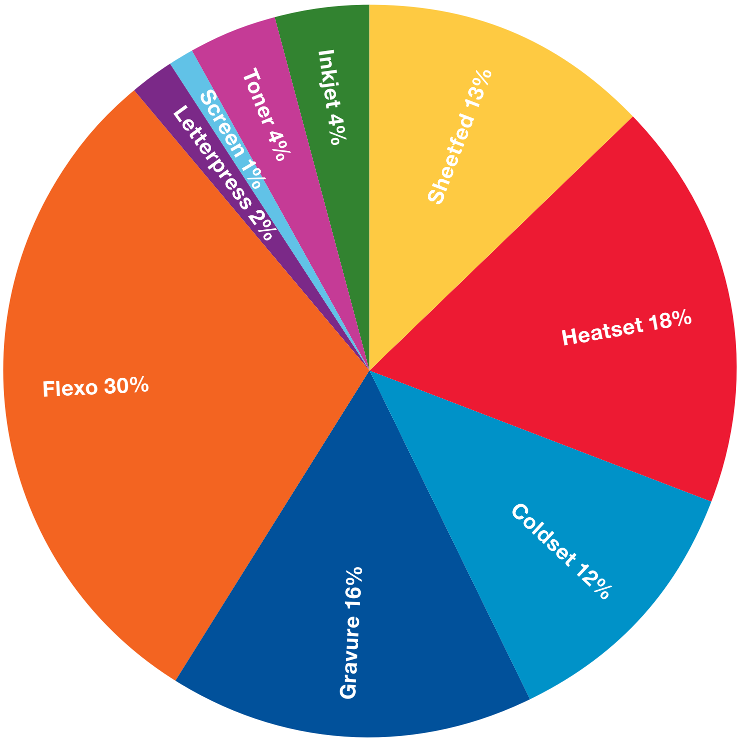
The growth in digital printing remains a key trend, with overall digital printing revenues standing at €26.4 billion. Both electrophotography and inkjet have grown strongly, with inkjet set to continue to grow at around seven per cent per annum in real terms. However, after consultation with industry we have significantly revised downwards our expectations for electrophotographic printing, and expect the value of output to be broadly flat over the next five years, with volumes under pressure from inkjet in mono printing, and the mix of output shifting to full-colour work in areas like books.

FIGURE 4 European Printing & Printed Packaging Output by Process, 2016-2022f (€ million, constant 2016 prices & exchange rates)



Note: constant price values show market data at 2016 prices, removing impact of inflation and exchange rate fluctuations from one year to the next
Source: Smithers Pira

FIGURE 5 European Printing Inks Consumption by Type, 2017 (% share by volume)



Source: Smithers Pira

Total printing inks & colourants consumption: 839,000 tonnes

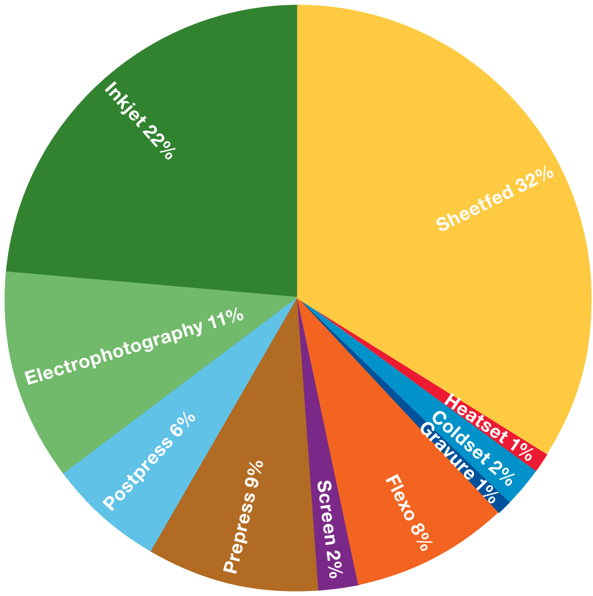
Printing equipment

There has been little change in trading conditions in European printing equipment markets in the past year, other than further sharp fall-offs in demand for web offset printing equipment and especially heatset. Traditional printing equipment suppliers continue to face challenging market conditions in Europe with investment in offset machinery continuing to fall back and few examples occurring of major investments in web offset. Flexo and gravure printing equipment sales have held up better due to the recovery in packaging output, although sales of publication gravure equipment are still depressed.

Digital printing equipment sales remain strong, and while it remains the case that in the majority of instances the use of digital is inappropriate for a variety of reasons, digital is becoming more economic at short-medium run lengths. This trend towards digital is real and it will become even more pronounced over time. Investment in inkjet printing equipment is continuing apace – up ten per cent in 2017 – but growth rates are expected to settle back over the next five years while investment into electrophotographic systems is set to fall back.

Overall sales of printing equipment are forecast to decline slightly on average now, by 0.8% per annum in real terms over the period 2017-2022 to €4.67 billion but will grow by around one per cent per annum in current terms, including the effects of general inflation. Offset litho printing equipment investment is set to fall back, with coldset web offset press sales declining by as much as four per cent per annum in real terms. Inkjet equipment sales, meanwhile, are forecast to grow by around two per cent per annum by the same measure, reaching €1.19 billion at today’s prices by 2022.

FIGURE 6 European Sales of New Printing Equipment by Type, 2017 (% share by value)



Total sales of new printing equipment: €4.38 billion

Source: Smithers Pira

Summary

Trends in European printing markets in 2017 were broadly consistent with those seen since the recession at the turn of the decade, with the declines seen in most graphic printing areas in line with those seen in 2016, while package and label printing continued to grow. Looking ahead, there is some sense that market conditions in the CIS are normalising somewhat, but even greater political uncertainties worldwide could still feed through into further economic damage, impacting even on key package printing areas. The impact of the UK's 'Brexit' from the EU meanwhile has had no significant impact to date, but there are a number of sticking points with negotiations and IMF forecasts for growth in the UK are somewhat depressed versus its counterparts on the continent, in part as a result of fears about the impact of the new trade situation.

Going forward, we still believe that graphic print penetration may increase in some Eastern European countries in some areas like direct mail, but there is little prospect of a pick-up in activity in Europe. The nature by which information is taken in today will continue to militate against growth in graphic print demand. Printed packaging demand on the other hand will continue to grow, to a large extent in line with the shift towards rising packaged food consumption in areas like fresh food, chilled food and also ready meals, as well as further gains by major chains in grocery markets backed up by rising investment in the cold chain in Eastern European countries. More and more, suppliers of equipment and consumables will seek to target this market, in addition to examining opportunities in growing areas like digital industrial printing, as well as niche applications including speciality papers, etc.

Technological, commercial and cultural change will continue to favour investment in digital printing equipment as well as systems like workflow software and web-to-print as printers seek to tailor their offer to their customers in the most effective manner – improving response times, communications and the breadth of capabilities. We continue to anticipate further consolidation in the industry, and this could accelerate in the face of any further economic slowdown and any increase in interest rates.

The landscape will remain challenging for many printers. There are some printers that have prospered into the latter half of the decade, but going forward further declines in graphic printing demand will mean that businesses able to adapt their capability to growth areas – in packaging as well as in digital industrial printing sectors – will be among those that emerge stronger as time goes by.

4. MARKET REPORTS

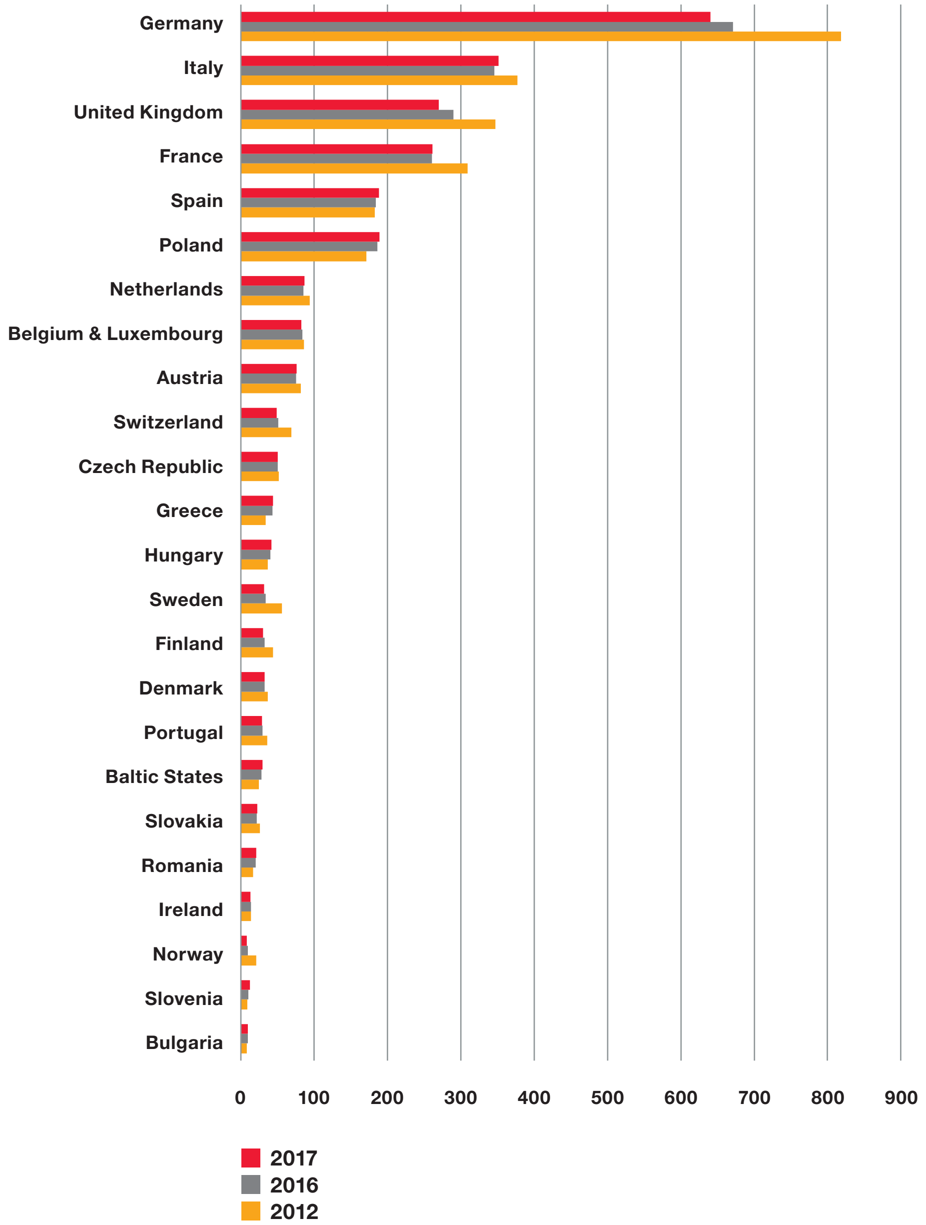
4.1 Ink market

Sources
Eurostat

EuPIA (European Printing Ink Association)
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.

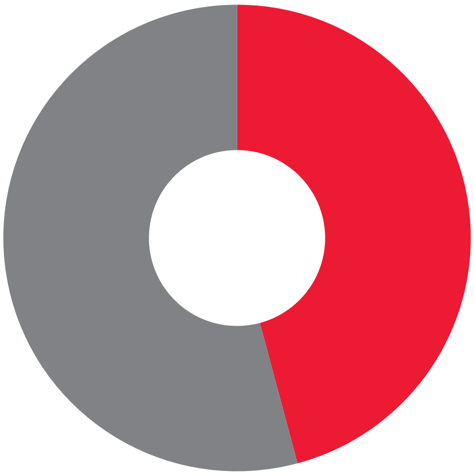
Notes
: = data not available

Printing inks sales value by country, , 2012, 2016 and 2017, in million €



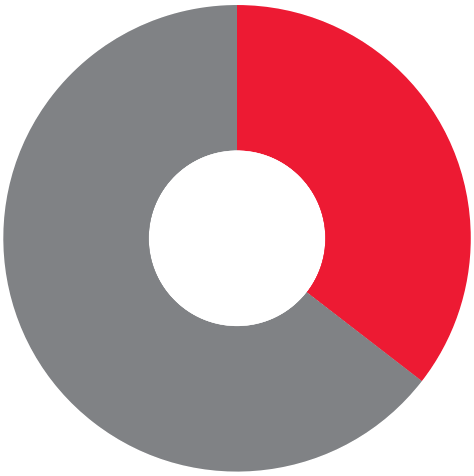
- Germany is the largest seller of printing inks in Europe with a total sales value of € 641 million in 2017.
- Sales of Germany have decreased by 4.6% compared to 2016 and by 21.8% compared to 2012.
- Italy is the second largest seller of printing inks with a sales value of € 351 million in 2017.

Sales volume, in tonnes, 2017



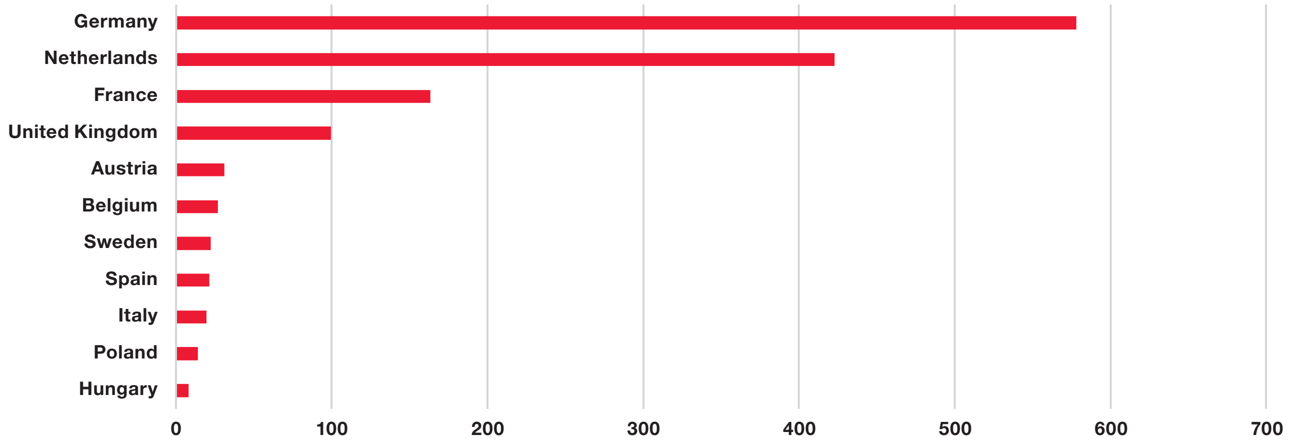
Publication inks
Packaging inks

Sales value, in million €, 2017



- Total European sales of printing inks were worth € 3.1 billion in 2017. In volume, 960,000 tonnes of printing inks were sold by European ink manufacturers in 2017.
- 440,000 tonnes of publication inks were sold (i.e. €1,100 million in value). This is 6.6% less than in 2016.
- 520,000 tonnes of packaging inks were sold in 2017 (i.e. €2,000 million in value). Contrary to publication inks, the tonnage of packaging inks sales has increased by 4.5% compared to 2016.

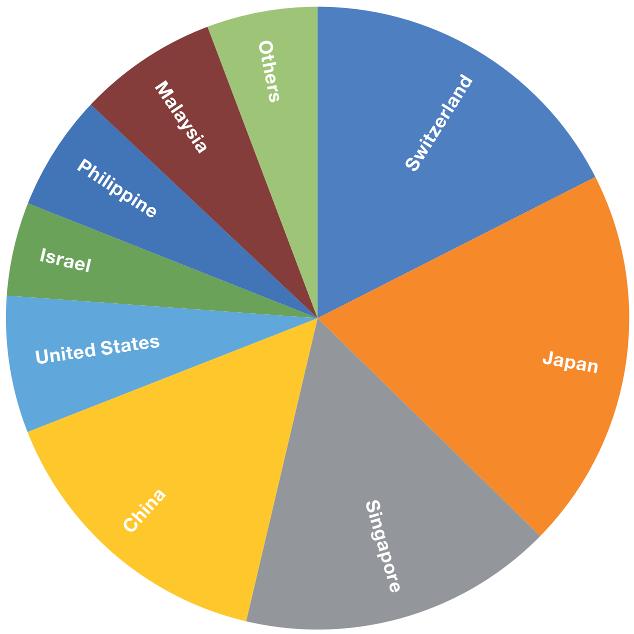
Main EU importers of printing inks from non-EU countries, 2017, in million €



- The European Union imported € 1.4 billion worth of printing inks from non-EU countries in 2017.

- The main importers are Germany, the Netherlands and France.

Main exporters of printing inks to the EU, 2017



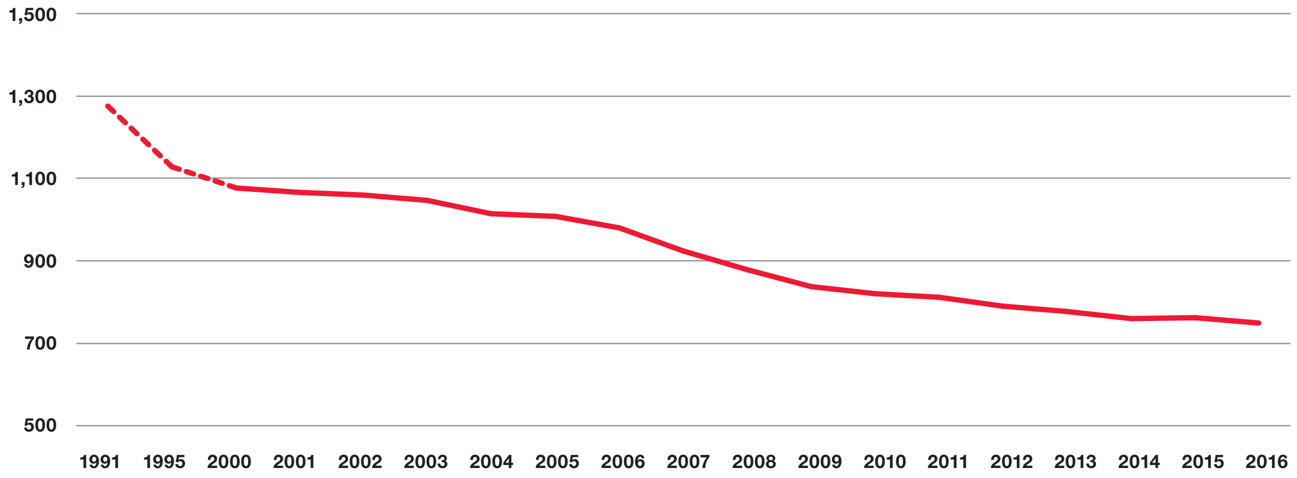
- The main exporter of printing inks to the European Union is Japan, with an import value of about € 282 million. Switzerland, Singapore and China are further large exporters to the European market.

4.2 Paper market

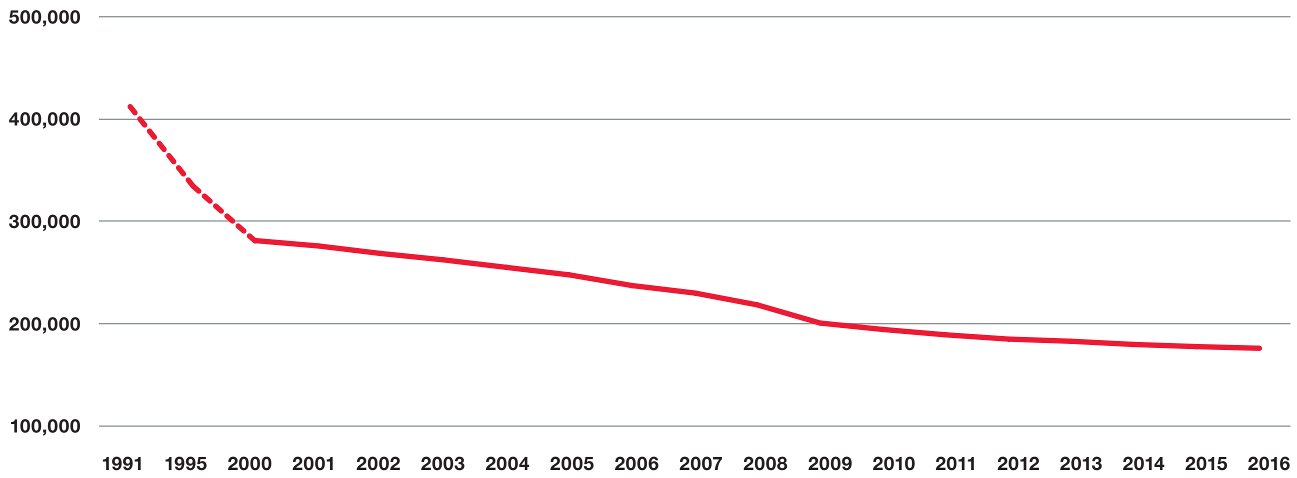
Sources
CEPI (Confederation of European Paper Industries)
Eurograph (European Association of Graphic Paper Producers)
Eurostat

Note
: = data not available

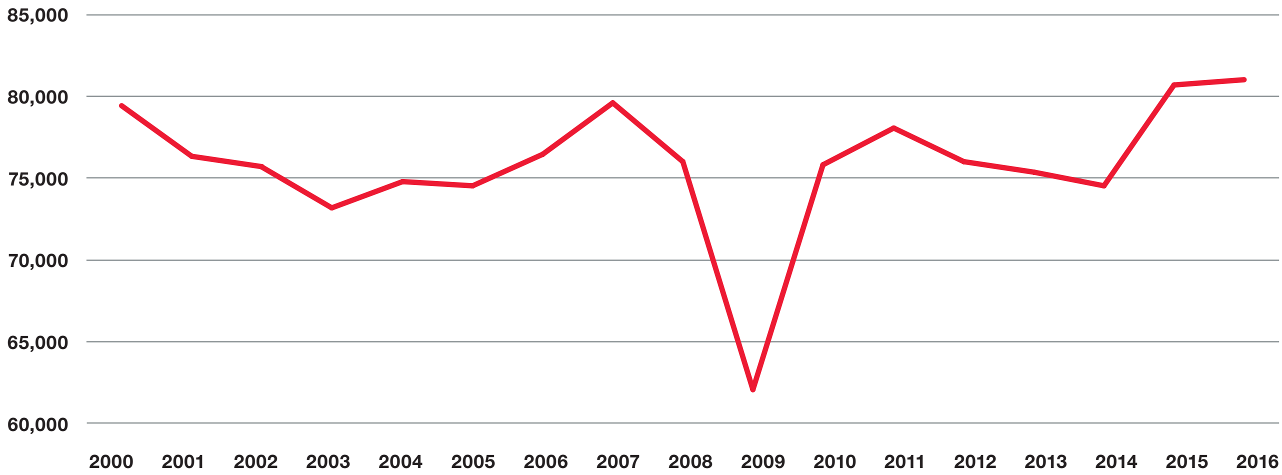
Number of paper and board mills, 1991-2016



Number of employees, 1991-2016

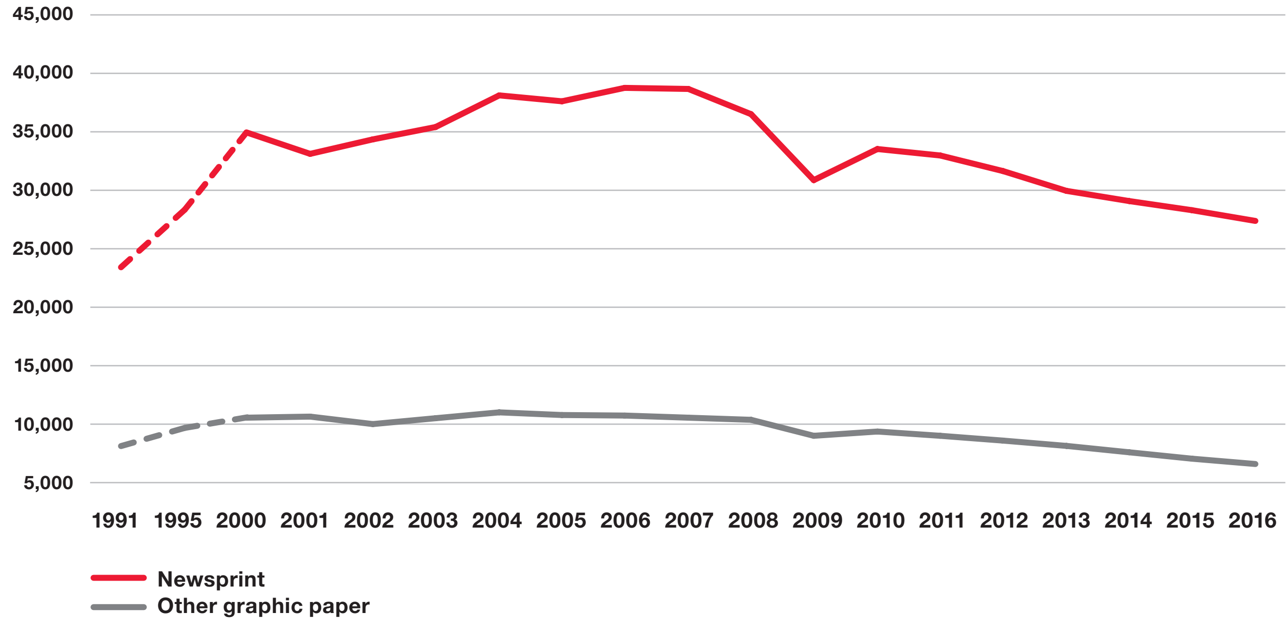


Turnover, 2000-2016, in million €

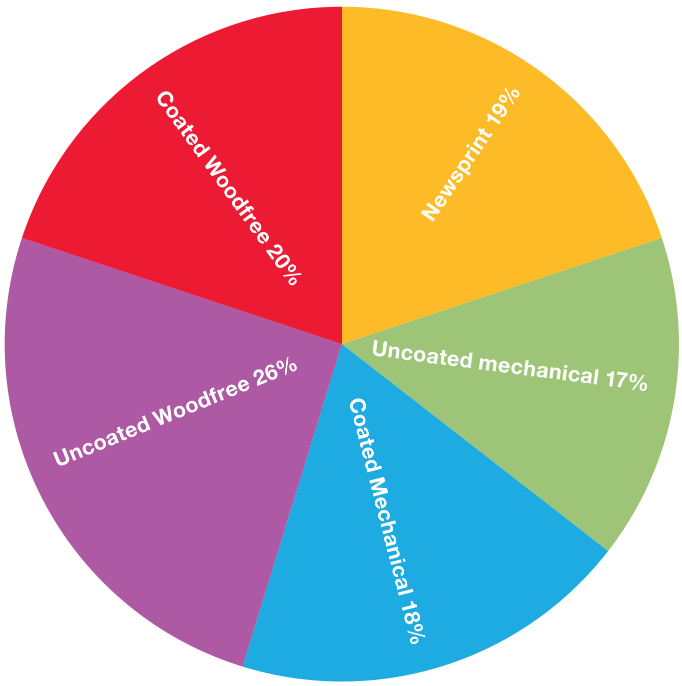


- With a turnover of €81 billion, the European paper manufacturing industry was composed of 623 companies, running 750 mills and employing around 177,000 employees in 2016.
- Since 2000, the paper industry has lost one third of its companies and employees. Investments has experienced a similar trend (-27.3%) whereas the turnover has remained stable.
- Most indicators remained stable in 2016, compared to 2015: turnover (+0.4%), investments (+1.6%), number of employees (-0.8%).

European production of newsprint paper and other graphic paper, 1991-2016, in million tonnes



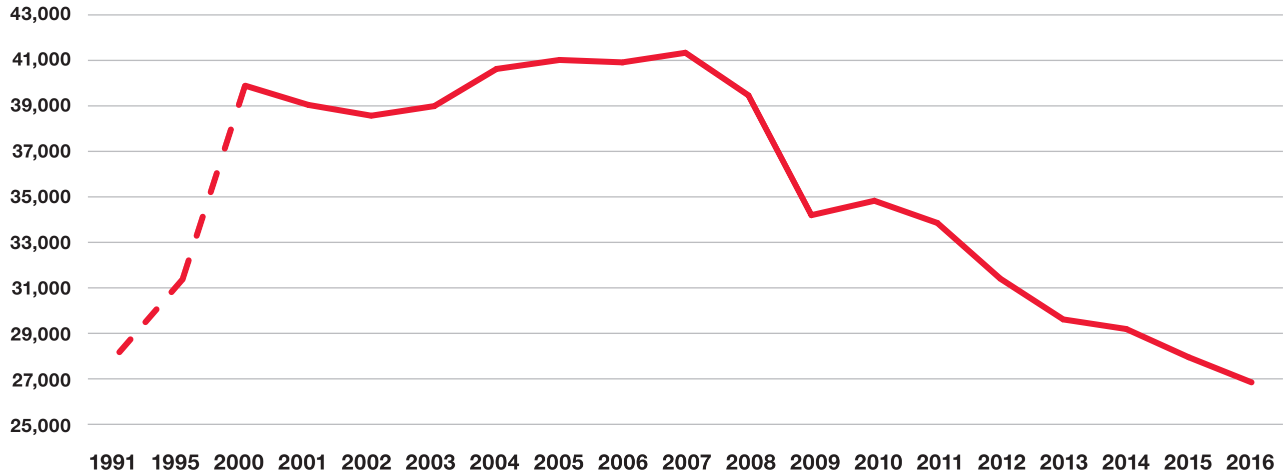
European production of graphic paper per type, 2016



- Close to 34 million tonnes of graphic paper were produced in Europe in 2016. This is 3.8% less than in 2015. The largest decrease in production was in coated mechanical production (-7.4%).

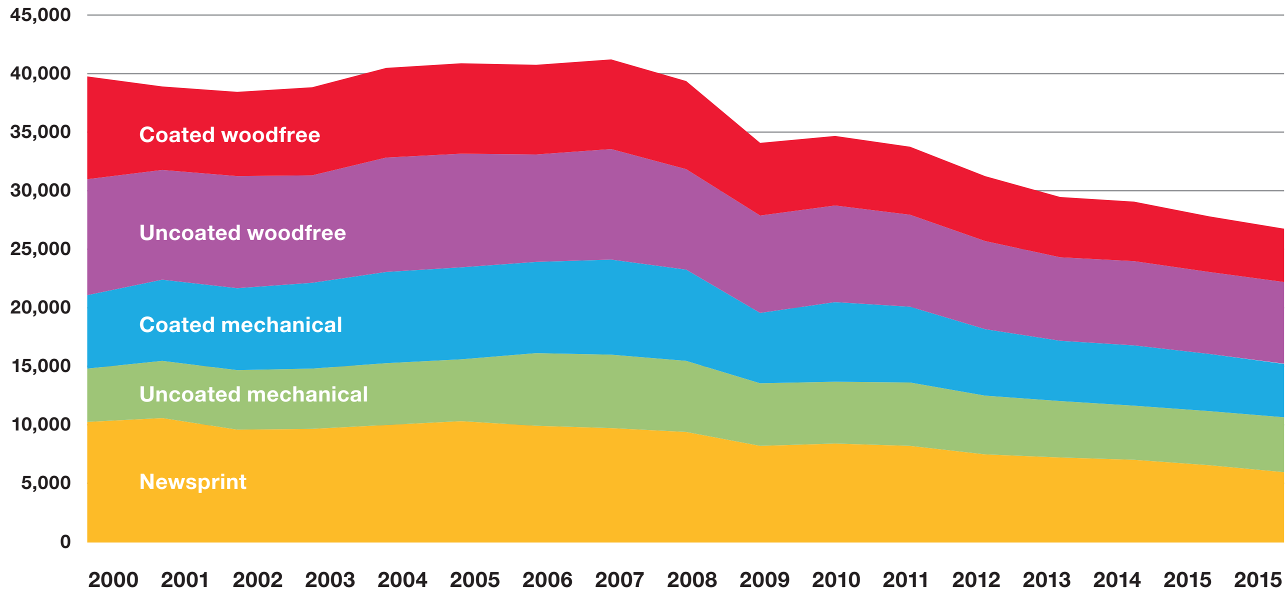
- Since 2008, graphic paper production in Europe decreased by 27.7%. Newsprint experienced the largest decrease (-34.8%).

Graphic paper consumption in the EU, 1991-2016, in million tonnes



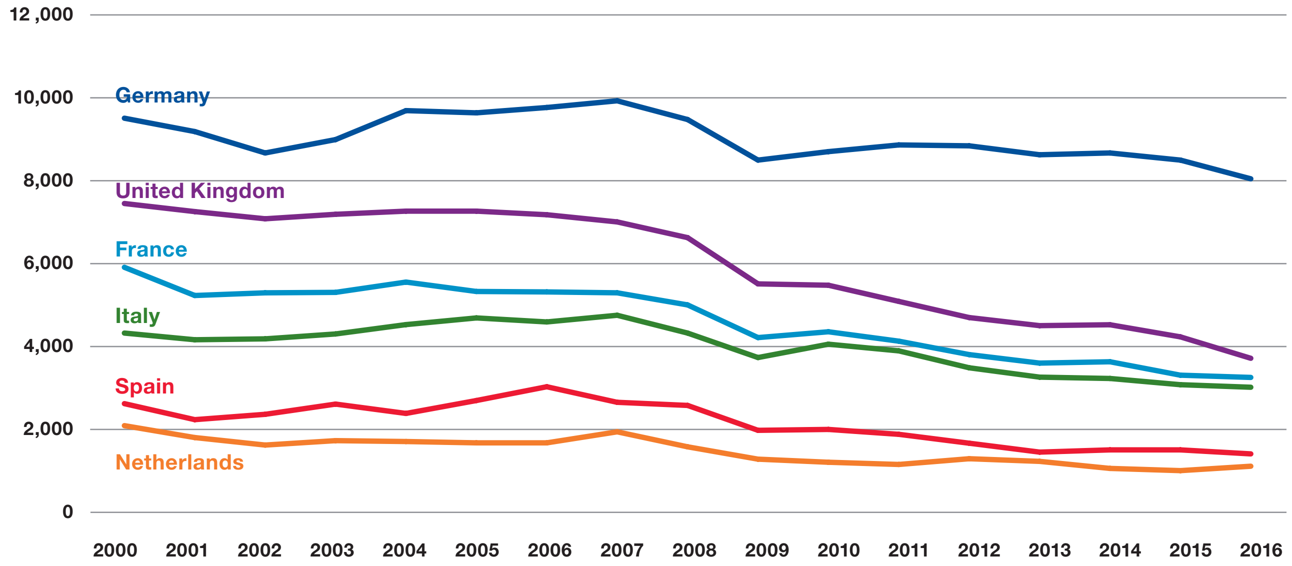
- The total graphic paper consumption in Europe amounted to 26.8 million tonnes in 2016. This is 3.9% less than in 2015.
- Graphic paper consumption has significantly decreased since 2000. It has decreased by 32.7%, which corresponds to a loss of approximately 10 million tonnes.

Graphic paper consumption in Europe, 2000-2016



- The sharpest decrease in consumption was registered by newsprint (-9.2%) between 2015 and 2016.
- Compared to the level of 2000, coated woodfree paper had the sharpest decrease (-48%).
- The paper grade which registered a positive trend over the years is uncoated mechanical paper. It increased by 1.7% compared to 2015 and even increased by 3.5% compared to 2000.

Graphic paper consumption in selected countries, 2000-2016, in '000 tonnes

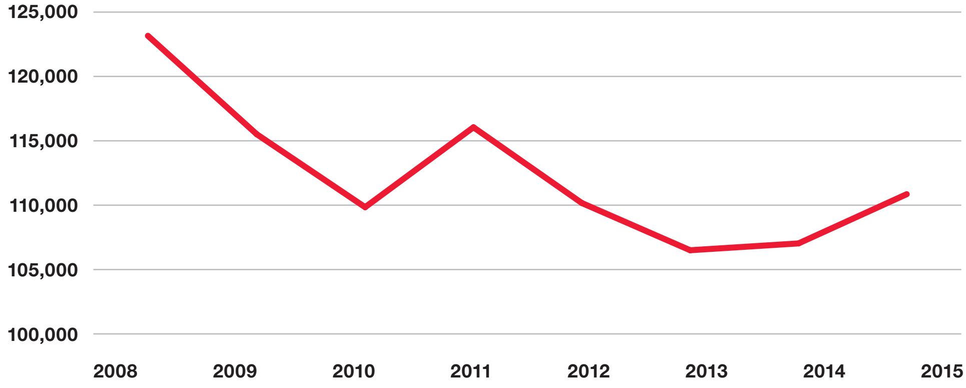


- With 8 million tonnes of graphic paper, Germany was the largest consumer of graphic paper in Europe in 2016, followed by the UK (3.6 million tonnes), France (3.2 million tonnes) and Italy (2.9 million tonnes).
- The biggest decrease in graphic paper consumption since 2015 was registered in the UK (-12.4%) whereas the Netherlands experienced the largest increase in consumption (+11.3%).
- Most European countries reported decrease in consumption since 2000. The UK, Sweden, Spain, the Netherlands, France and Austria all reported decrease close to 50%.

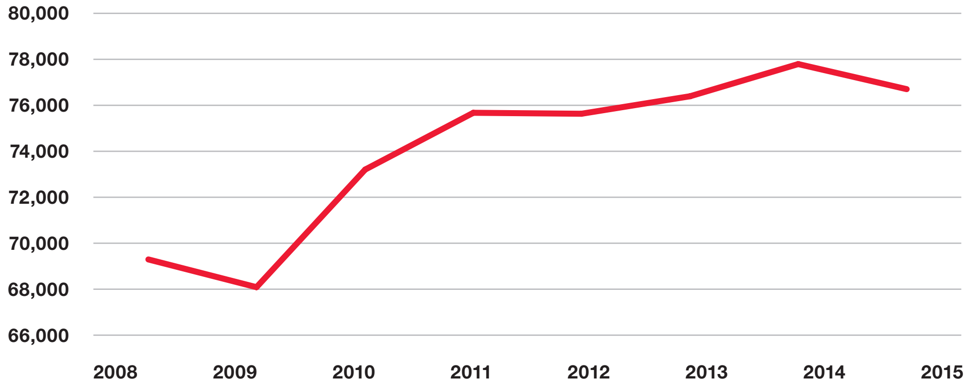
4.3 Publishing market

Sources
Eurostat
Book publishing (NACE 58.11) includes publishing in print, electronic (CD, electronic displays and so on) or audio form or on the internet.
The publishing of directories and mailing lists (NACE 58.12) includes the publishing of lists of facts/information that are protected in their form, but not in their content.
The publishing of newspapers (NACE 58.13) includes the activities of publishing newspapers, including advertising newspapers, appearing at least four times a week.
The publishing of journals and periodicals (NACE 58.14) includes the activities of publishing periodicals and other journals, appearing less than four times a week.
Directories and mailing lists, newspapers, journals and periodicals can be published in print or electronic form, including on the internet.
Other publishing activities (NACE 58.19) include publishing (including online) of catalogues, photos, engravings and postcards, greeting cards, forms, posters, reproduction of works of art, advertising material and other printed matter, online publishing of statistics and other information.

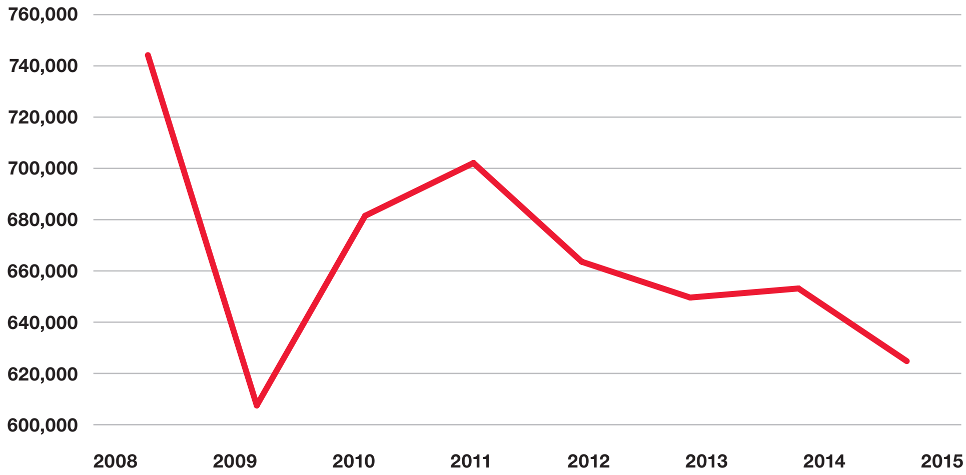
Turnover of the publishing industry, in € million, 2008-2015



Number of publishing companies, 2008-2015

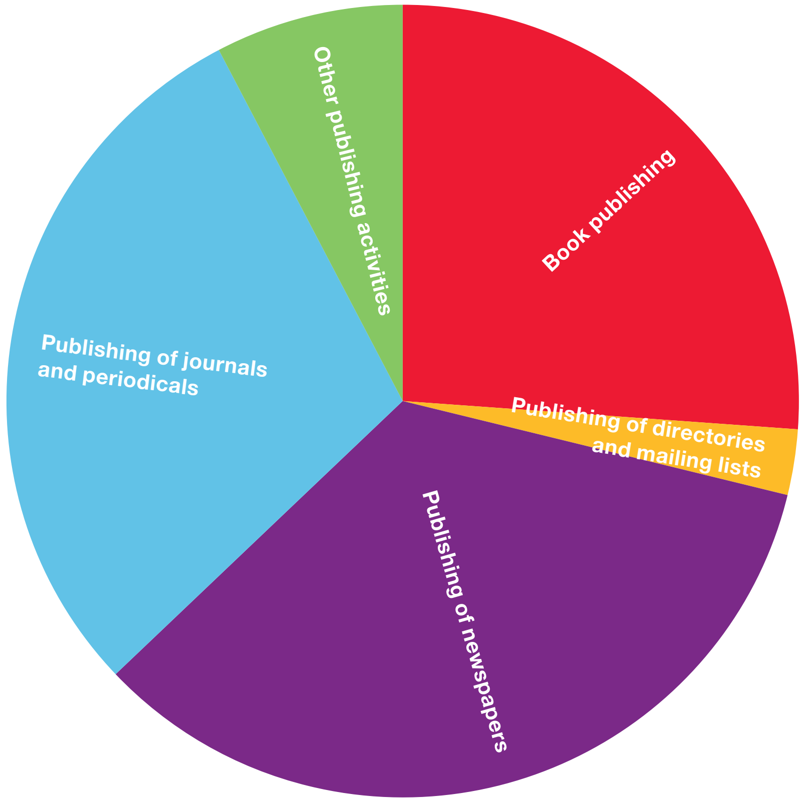


Number of employees in the publishing sector, 2008-2015



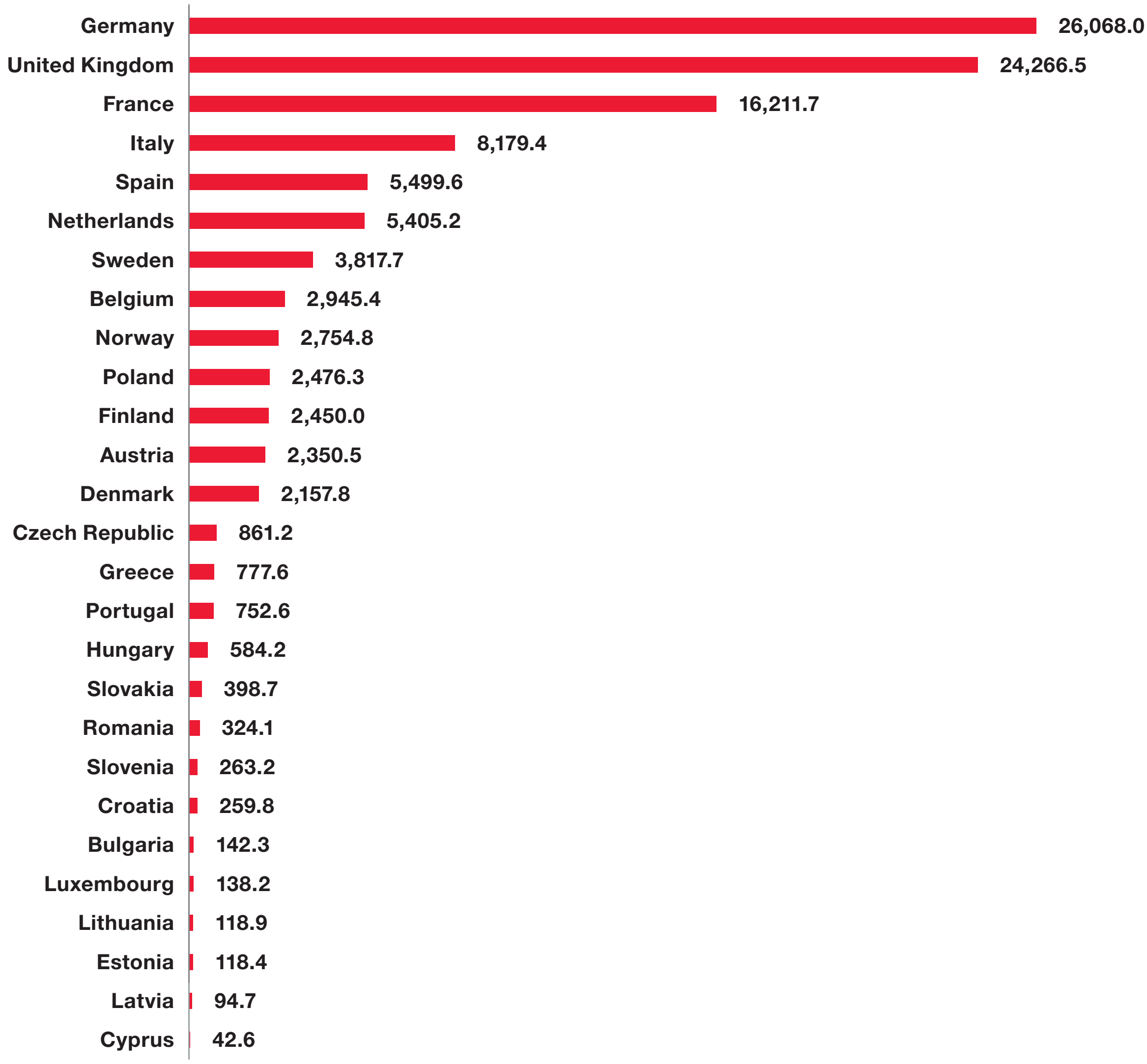
- The turnover of the European publishing industry reached € 110 billion in 2015, this is 3.6% more than in 2014.
- In 2015, the publishing industry was composed of approximately 76,700 companies and 624,700 employees.

Distribution of turnover per publishing sector, 2015



- One third of the European publishing sector's turnover is generated by newspapers, another third by magazines and a quarter by books.

Turnover of the publishing industry per country, in million €, 2015

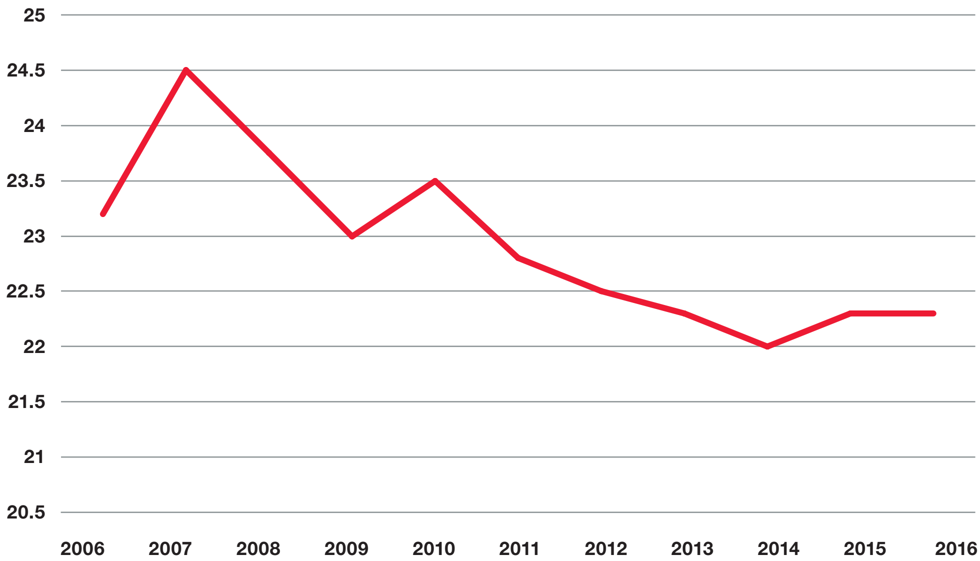


- Germany was the largest contributor to the turnover of the publishing sector in 2015 with more than € 26 billion.

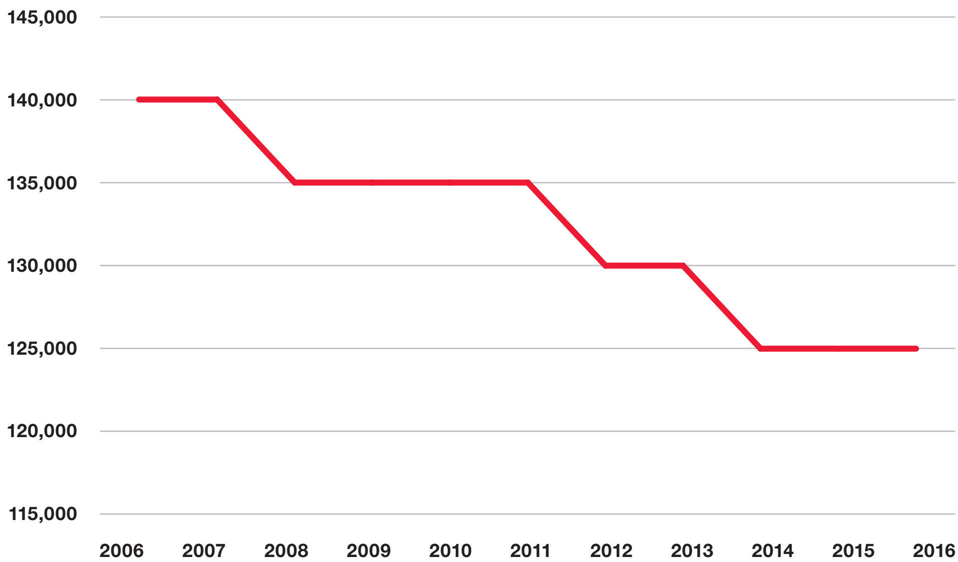
4.4 Book market

Sources
FEP (Federation of European publishers)
Data are estimates and figures are rounded. Figures refer to net publishers' turnover, i.e. the publishers' total revenues from the sales of books, no the total market for books (margin of booksellers or other retailers).

Publishers' revenue from sales of books in Europe, 2006-2016, billion €

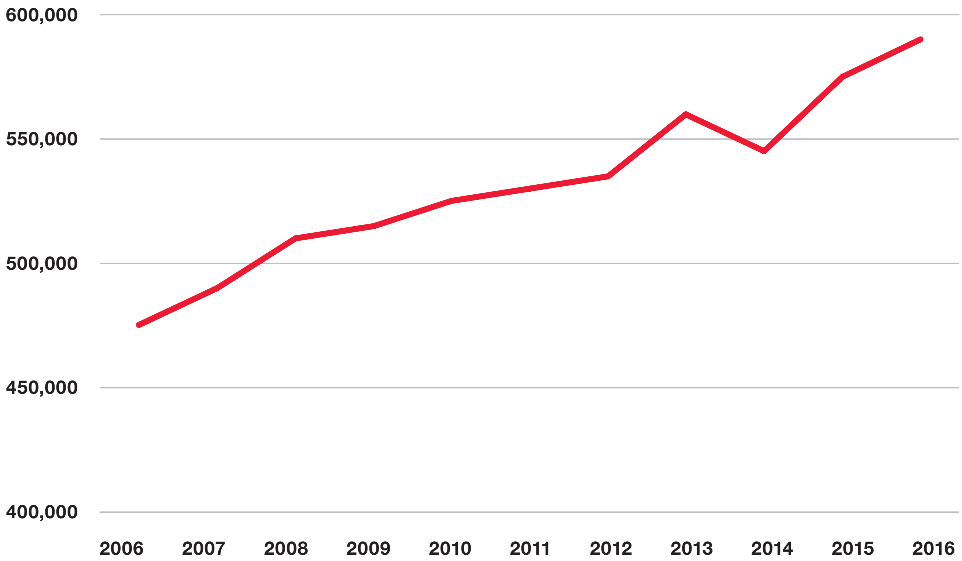


Number of persons in full-time employment in European book publishing, 2006-2016

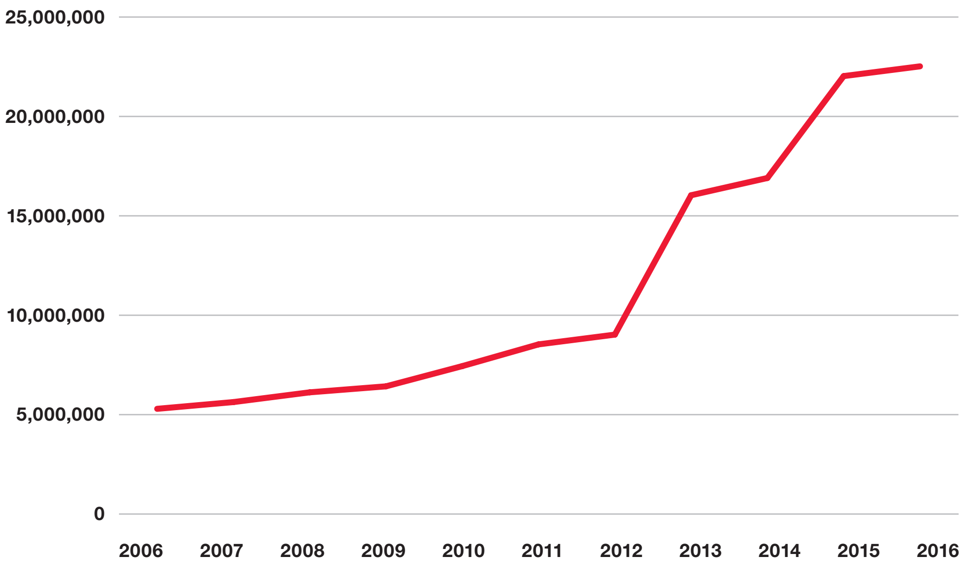


- In 2016, the turnover of the book publishing industry did not change compared to 2015 (€22.3 billion). It declined by 6.1% since 2008..
- Approximately 125,000 people are employed by the European book publishing industry. This is 7.4% less than in 2008.

New book titles published in Europe, 2006-2016

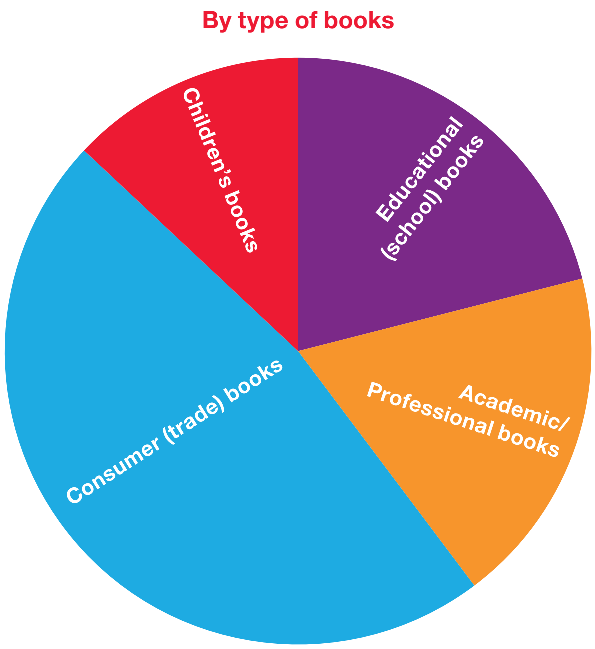


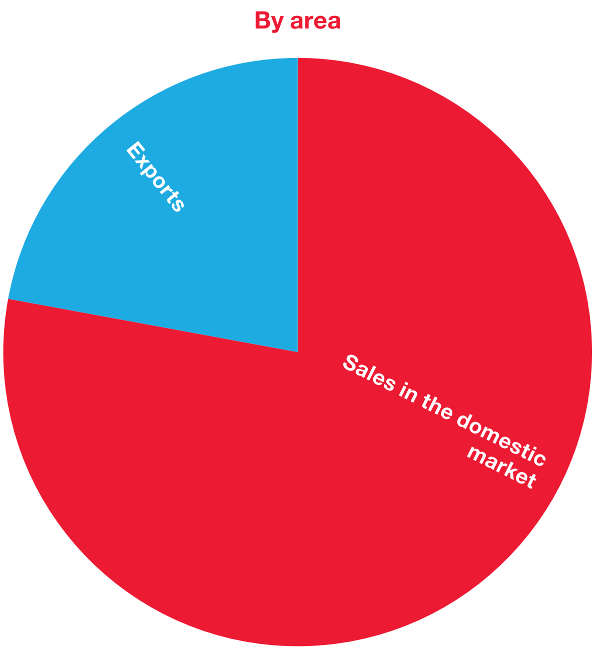
Number of titles in print (active catalogue) in Europe, 2006-2016

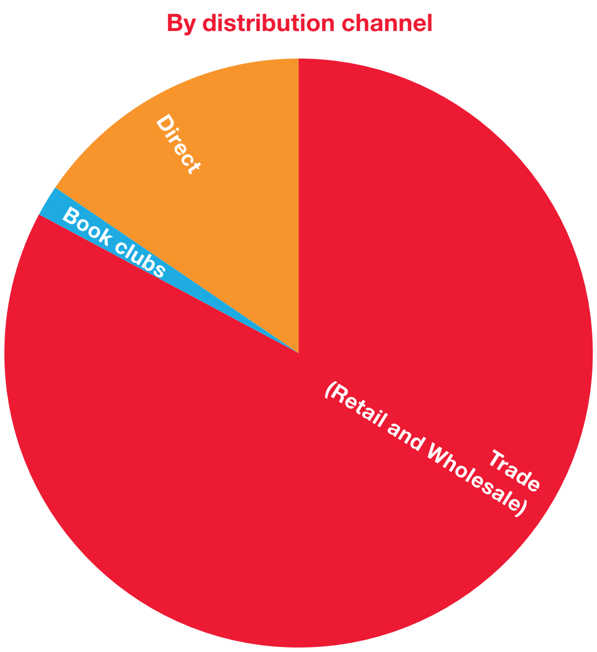


- Since 2014, the book publishing market in Europe is showing clear signs of recovery.
- In 2016, approximately 590,000 new books were published. This represents an increase of 2.6% compared to 2015 and of 15.7% compared to 2008.
- The number of titles in print in 2016 increased by 2.3% compared to 2015 and has more than tripled since 2008. Approximately 22.5 billion titles were in print in 2016.

European publishers' revenue from sales of books, in € billion, 2016





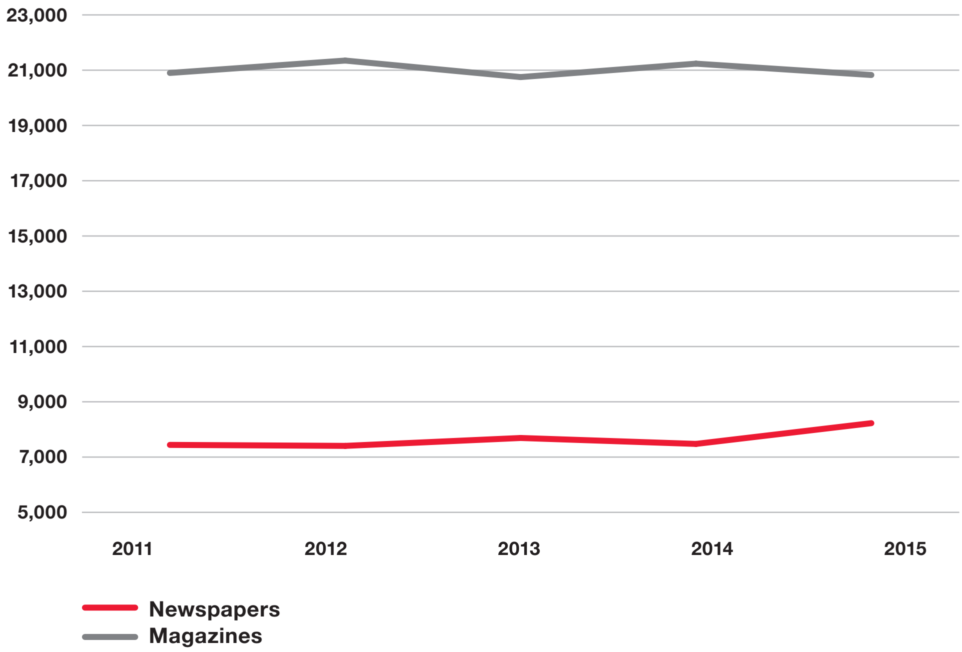


- Almost 50% of book publishers' revenue is generated by consumer books, close to 20% to educational books, 18.7% by academic and professional books and 13% by children's books.
- 77.9% of book publishers' revenue comes from the sales of books in their domestic markets and 22.1% from the export of books.
- More than 80% of the total sales are distributed through retail and wholesale,15.5% by direct sales and 1.7% through book clubs.

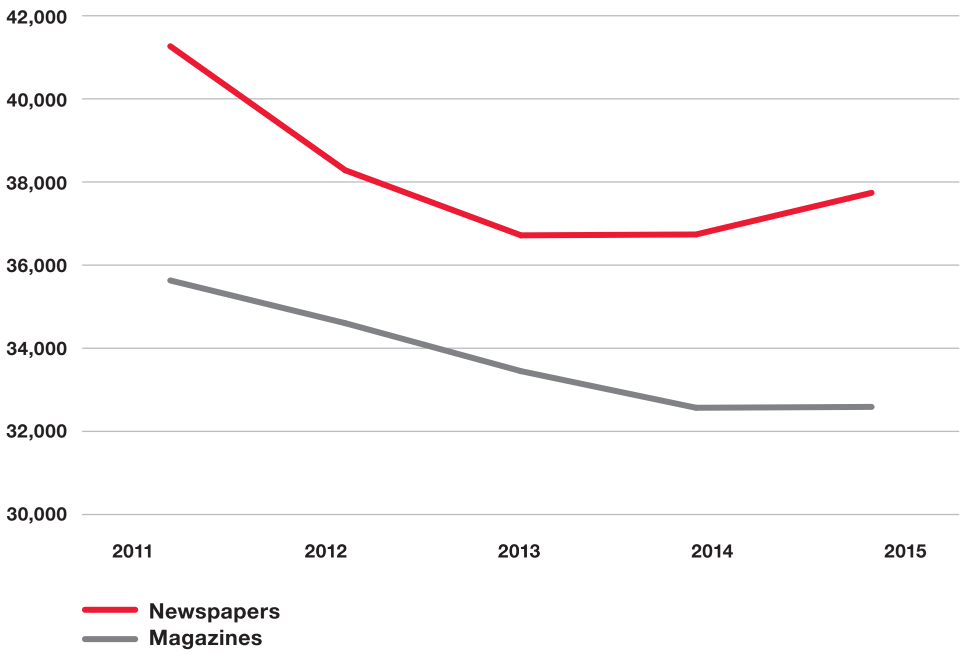
4.5 Press market

Sources
WAN-IFRA World Press Trends 2016
ZenithOptimedia (Global adspend by medium)

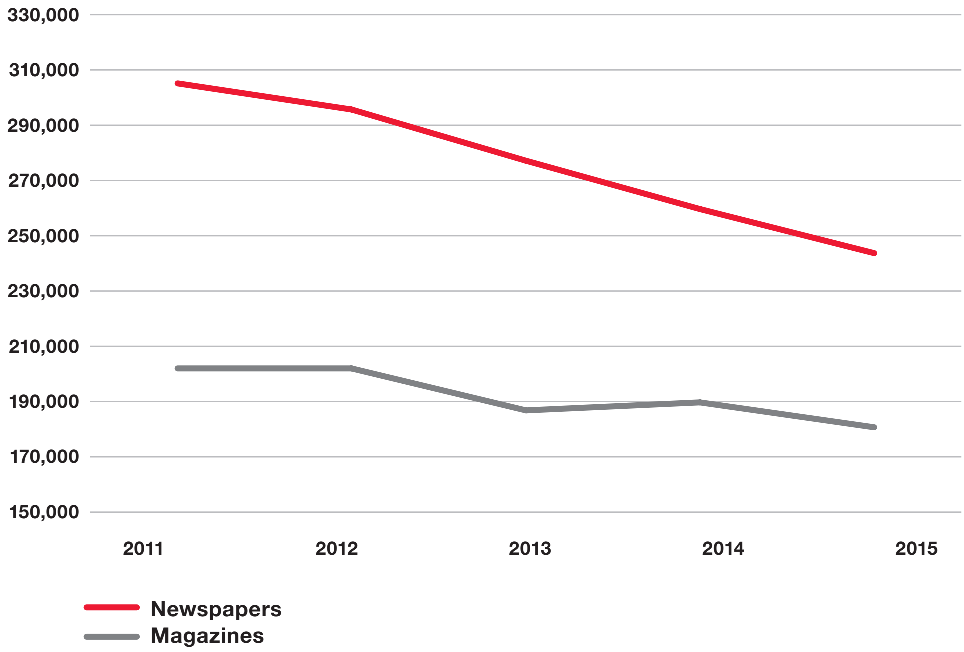
Number of publishing companies, 2011-2015



Turnover of publishing industry, 2011-2015, in million €



Number of employees in publishing industry, 2011-2015

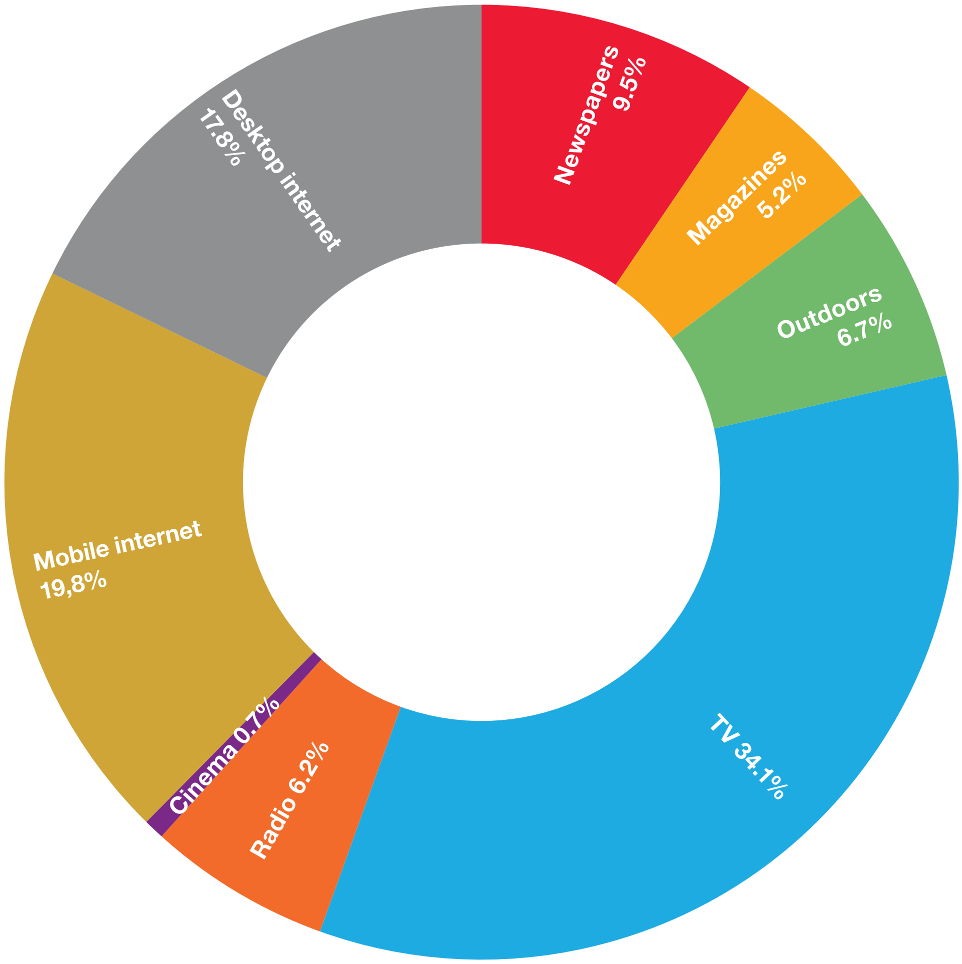


- In the European newspaper industry, there were 8,120 companies employing 244,000 employees and generating a turnover of € 37.7 billion.

- In magazine publishing, there were 20,885 companies active in 2015, with 180,000 employees and a turnover reaching € 32.5 billion.

- In 2015, the number of newspaper publishing companies increased by 9%, so did the turnover (+2.7%), while the number of magazine publishing companies decreased by 1.6% with a turnover remaining stable compared to 2014. In both industries, the number of employees decreased (by 6.1% in the newspaper industry and by 4.6% in the magazine industry).

Global adspend by medium, 2017



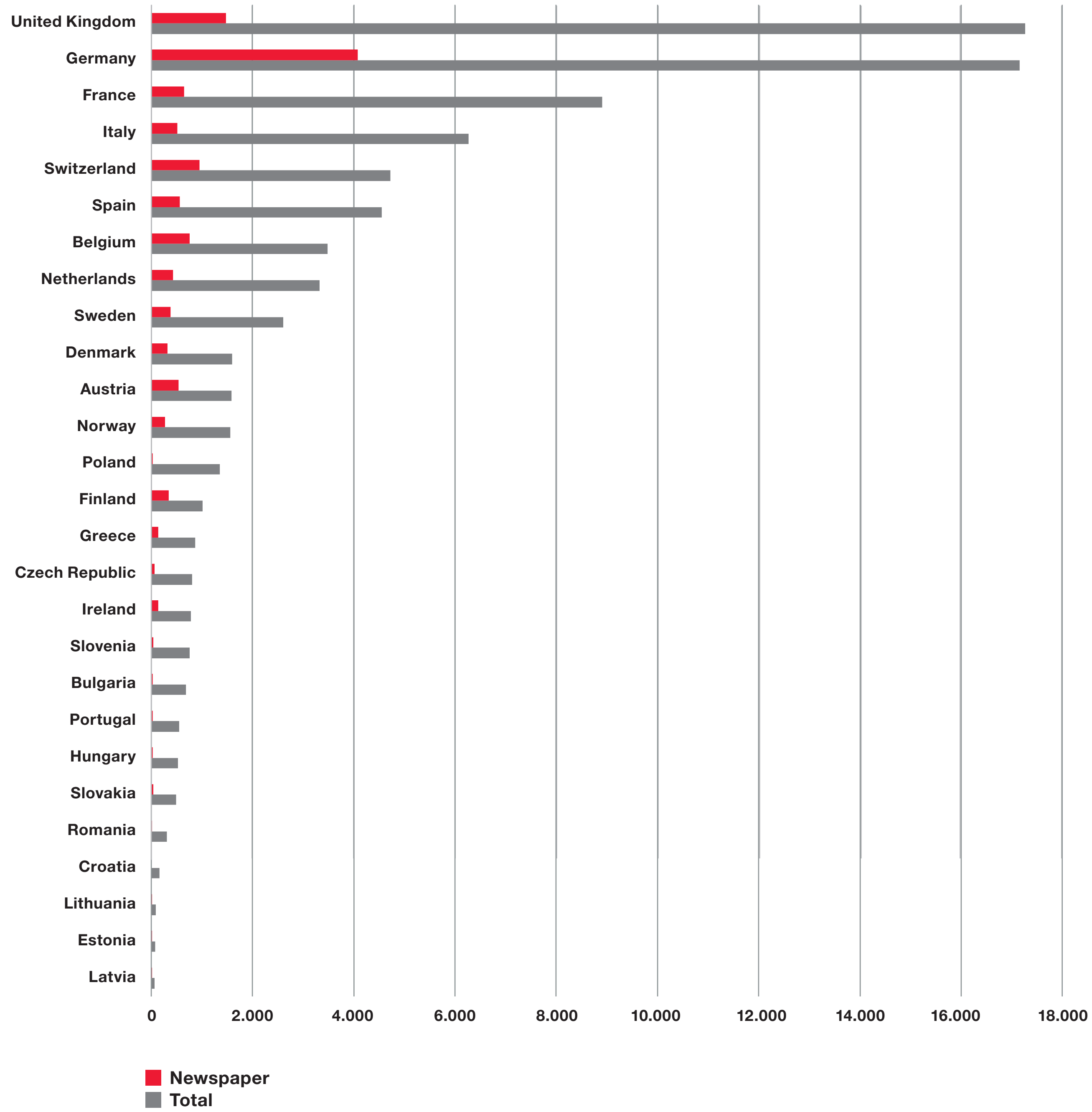
- Globally, internet advertising continues to increase its share of advertising and stood at 37.6% in 2017 (compared to 34.1% in 2016).
- The share of printed advertising (newspapers, magazines and outdoor) represented 21.4%in 2017; it was 23.4% in 2016.
- Internet advertising is principally rising at the expense of print. Compared to 2013, newspapers' share of global spend has decreased by almost 44% while internet advertising has risen from 20.7% to 34.1%.

Global adspend by medium, 2020 forecast

- In 2020, the share of internet advertising in global adspend is expected to further increase, in particular mobile internet, which is set to have a share of 29.3%. This will bring the share of internet advertising to 44.6% in 2020.

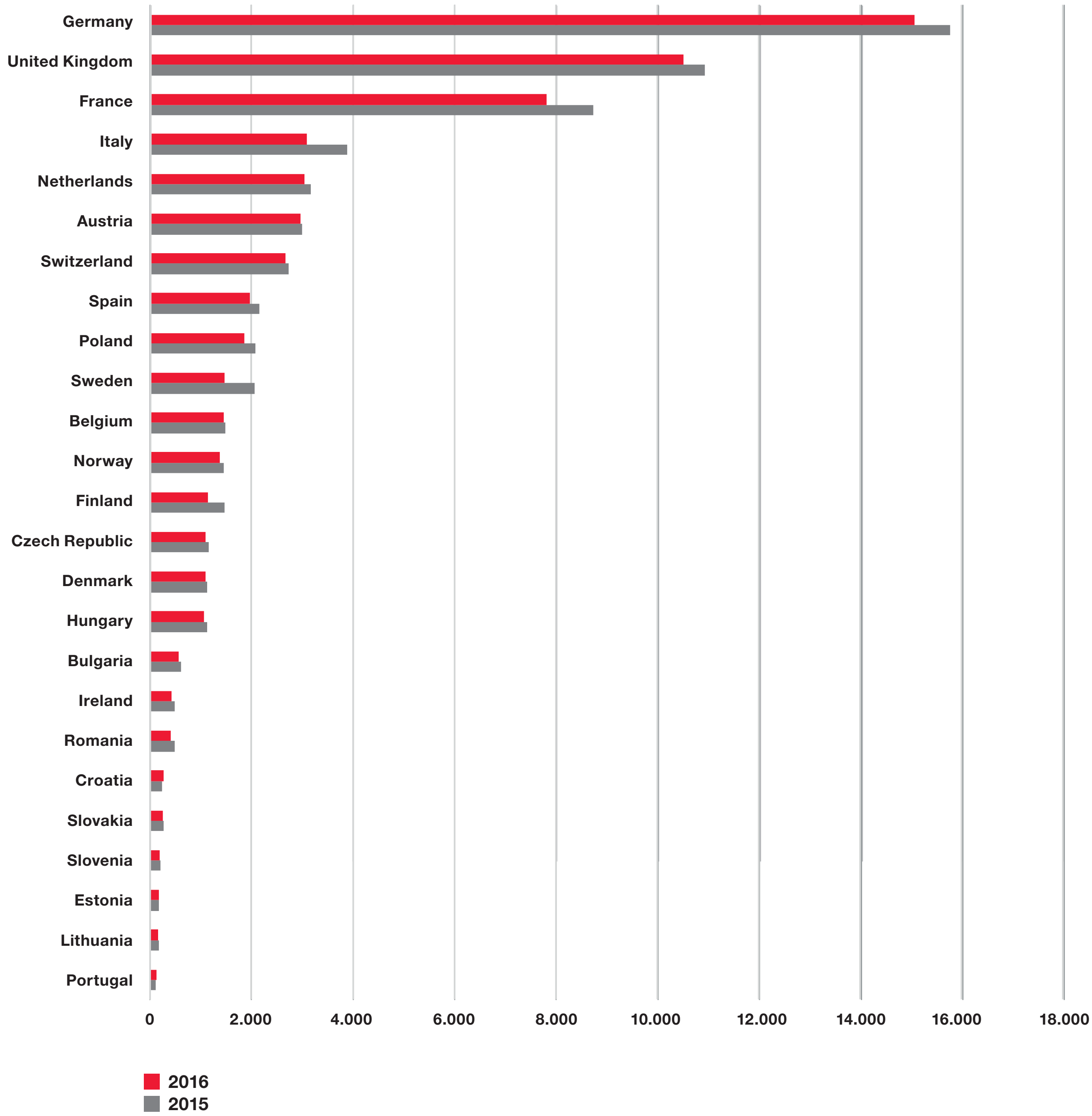
- The share of printed advertising (newspapers, magazines and outdoor) is set to decrease to 17.5% in 2020 from 21.6% in 2017.

Advertising expenditure, total and newspapers, in million €, 2016

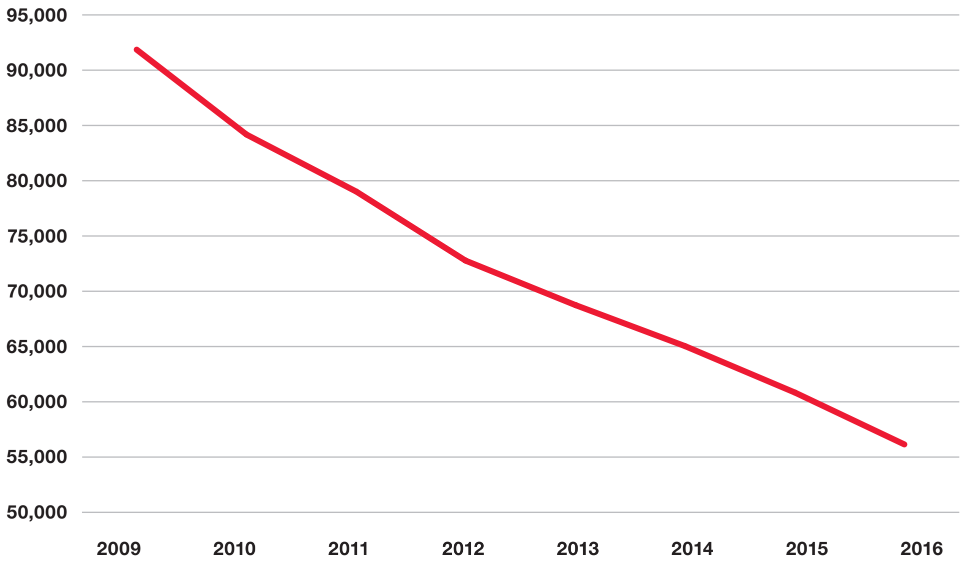


- In Europe, total advertising expenditure amounted to € 81.5 billion in 2016. This is 9.5% less than in 2015.
- The UK and Germany register the same level of advertising expenditure, i.e. approximately € 17 billion. Advertising expenditure in newspapers are however almost 3 times higher in Germany than in the UK.
- Advertising expenditure in newspaper registered a decrease of 29.3% in 2016 compared to 2015. Advertising expenditure in newspapers amounted to € 16.7 billion in 2016.

Total average circulation of paid-for and free dailies (000), 2016

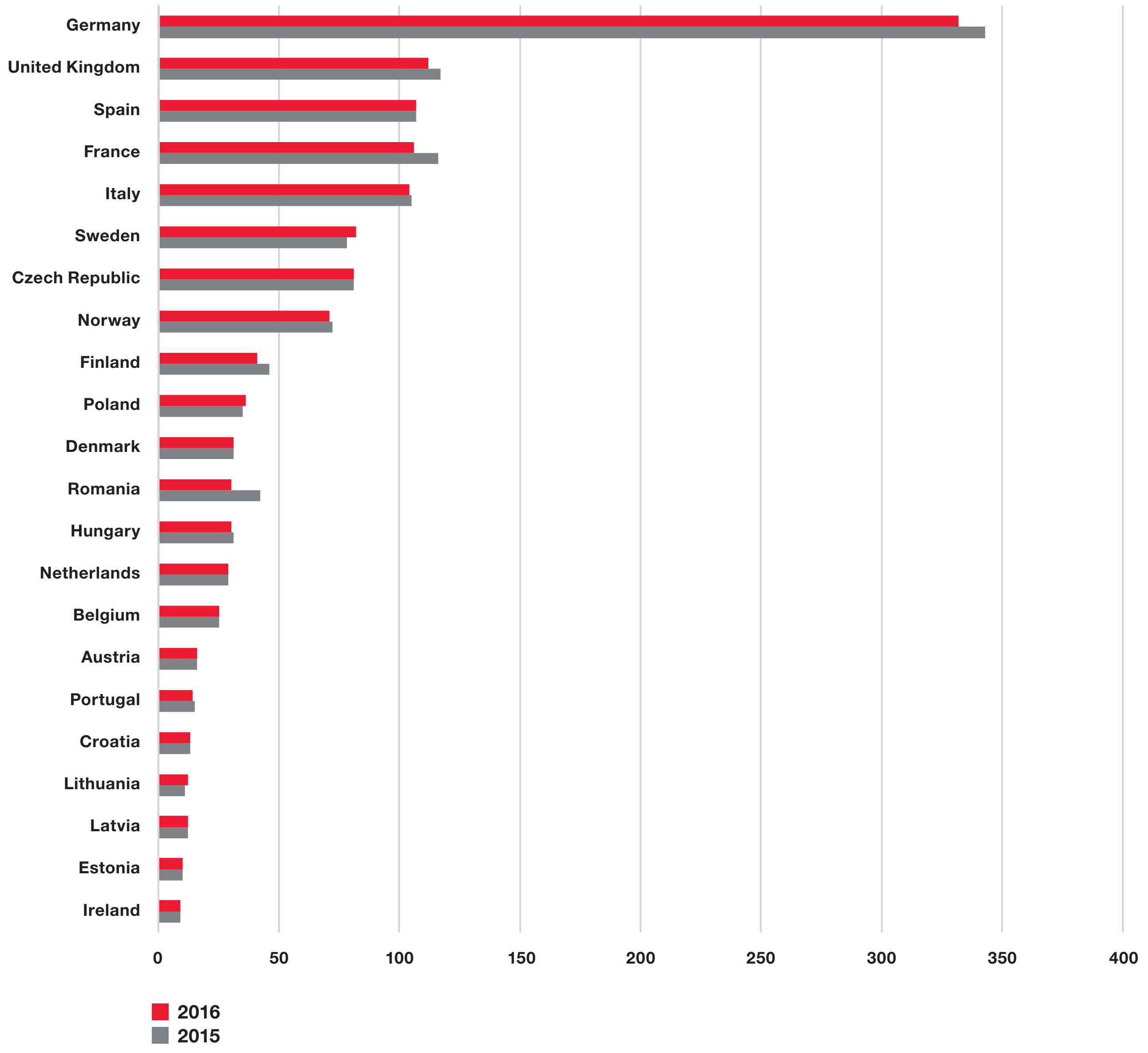


Total average newspaper (paid-for and free) circulation (000), 2009-2016

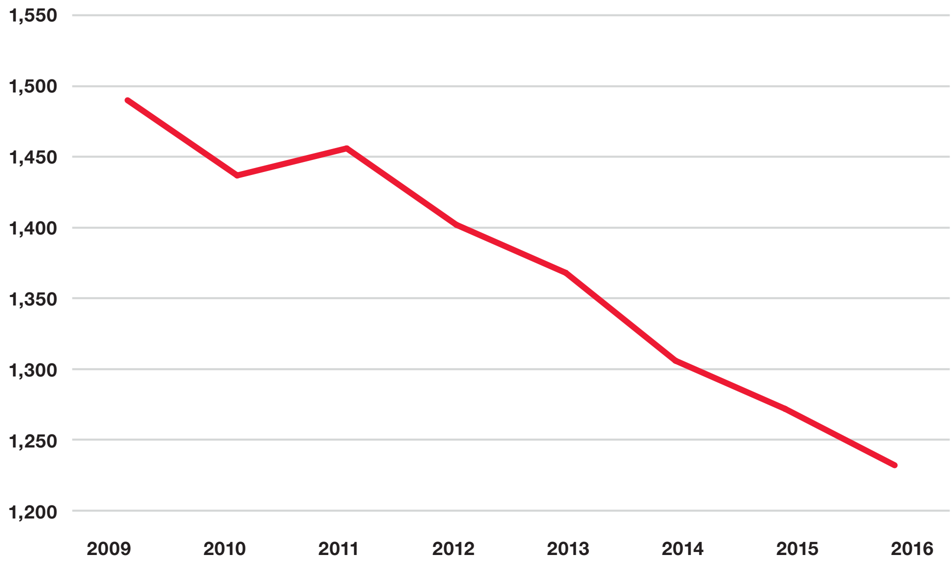


- In Europe, the total average circulation of paid-for and free dailies was 56 million in 2016. This is 7.7% less than in 2015 and 39% less than in 2009.
- With the largest population in Europe, Germany has the largest average circulation with more than 15 million in 2016.
- Sweden registered the sharpest decrease in the total average circulation of paid-for and dailies in 2016 (-28.5%), whereas Portugal registered the biggest increase (+8.5%).

Number of titles of paid-for and free dailies, 2016



Number of newspaper (paid-for and free) titles, 2009-2016



- There were 1232 titles in circulation in Europe in 2016; -3.1% less than in 2015 and -7.3% less than in 2009.
- 47 new titles appeared in 2016 and 6 disappeared.
- Sweden has seen 4 of its national titles disappear in 2016, whereas new titles are in circulation in Romania (12), Germany (11), France (10), UK (5) and Finland (5).

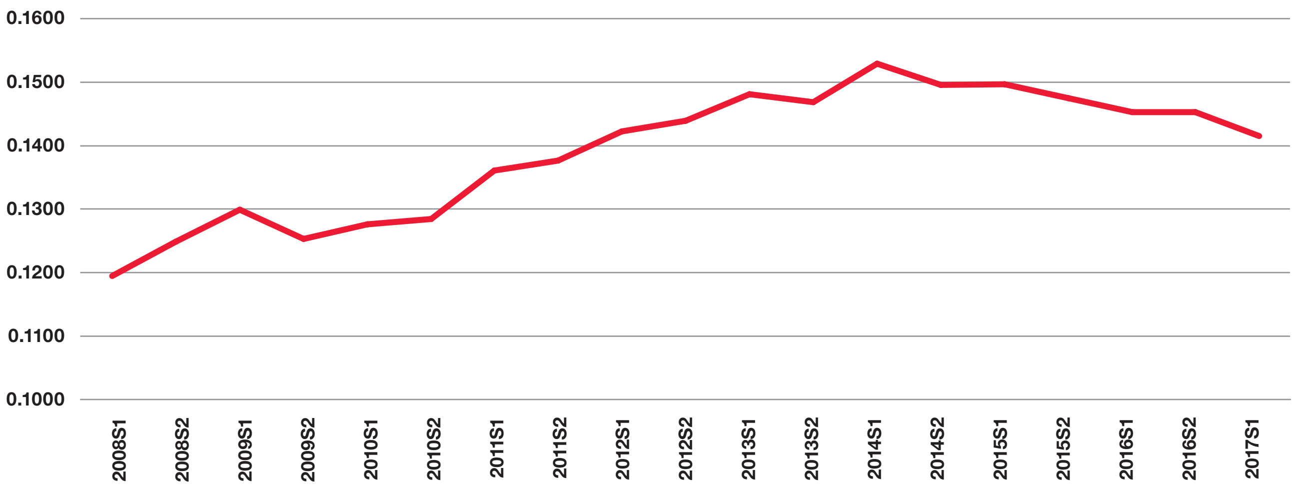
4.6 Energy market

Sources

Eurostat

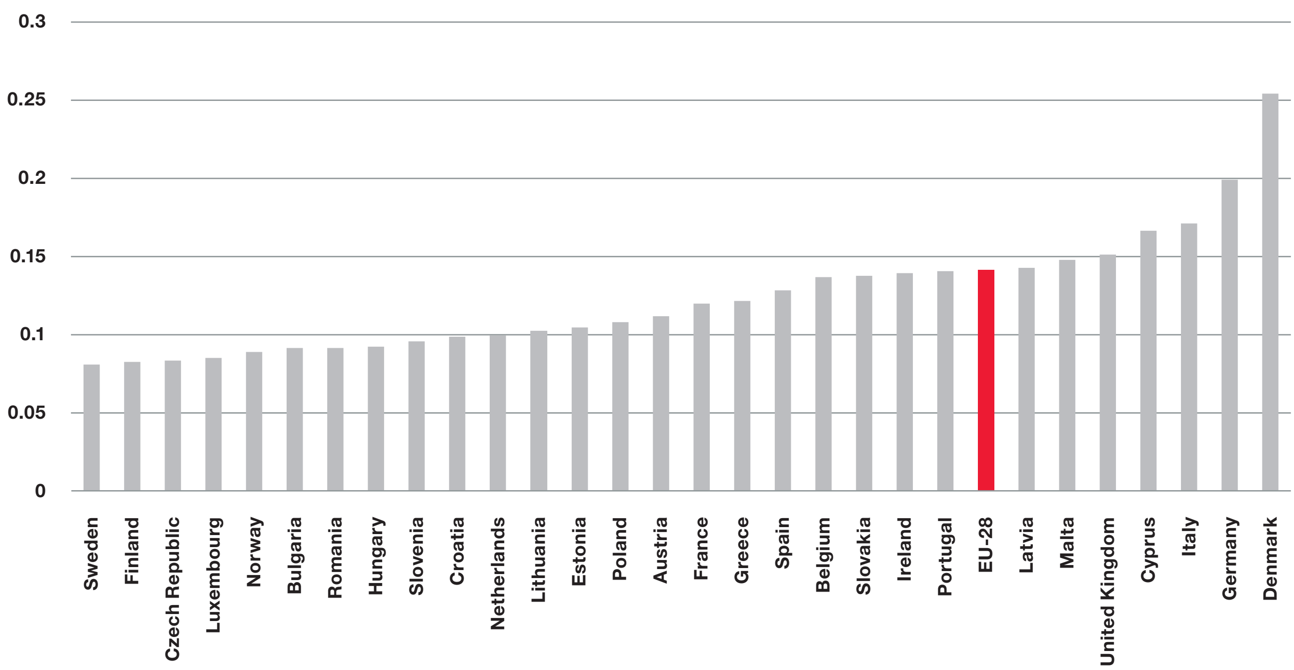
The prices mentioned refer to Electricity prices for industrial consumers (all taxes and levies included) in €/KWh, which correspond to medium standard industrial consumption band with an annual consumption of electricity between 500 and 2000 MWh.

EU electricity prices for industrial consumers, 2008-2017, in €/KWh



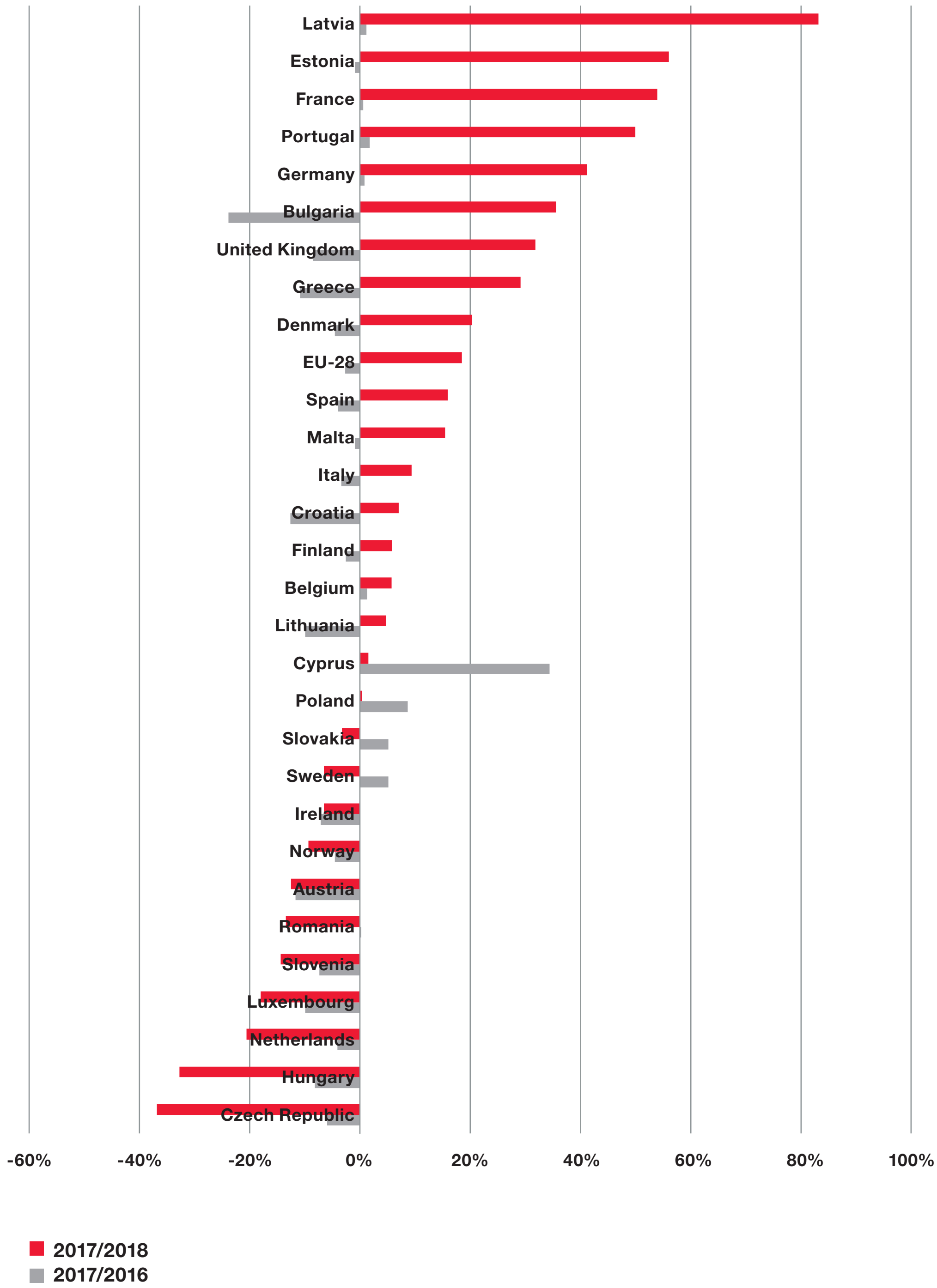
- European electricity prices for industrial consumers showed regular increases between 2008 and 2014. A steady decrease was registered as from 2014 and continues in 2017.
- Electricity prices increased by 24% between 2008 and 2013 and decreased between 2014 and 2016.
- In first half of 2017, the average price of electricity for industrial consumers was 0.1415 €/KWh all taxes and levies included, this is 2.6% less than the second half of 2016.

EU electricity prices for industrial consumers, 2017 (first semester), in €/KWh



- In 2017, Denmark registered the highest price whereas Sweden registered the lowest in Europe.
- After Denmark, the highest prices are in Germany and Italy, all above European average.

%-change in EU electricity prices for industrial consumers, 2017/2016 and 2017/2008, in €/KWh



- Compared to 2016, Cyprus and Poland experienced the sharpest increase in electricity prices in 2017 (with up to 34% increase in Cyprus). Prices in Bulgaria decreased the most compared to 2016 (more than 23% decrease).

- Latvia, Estonia and France registered the largest increases between 2008 and 2016 whereas prices in the Czech Republic, Hungary and the Netherlands decreased the most.

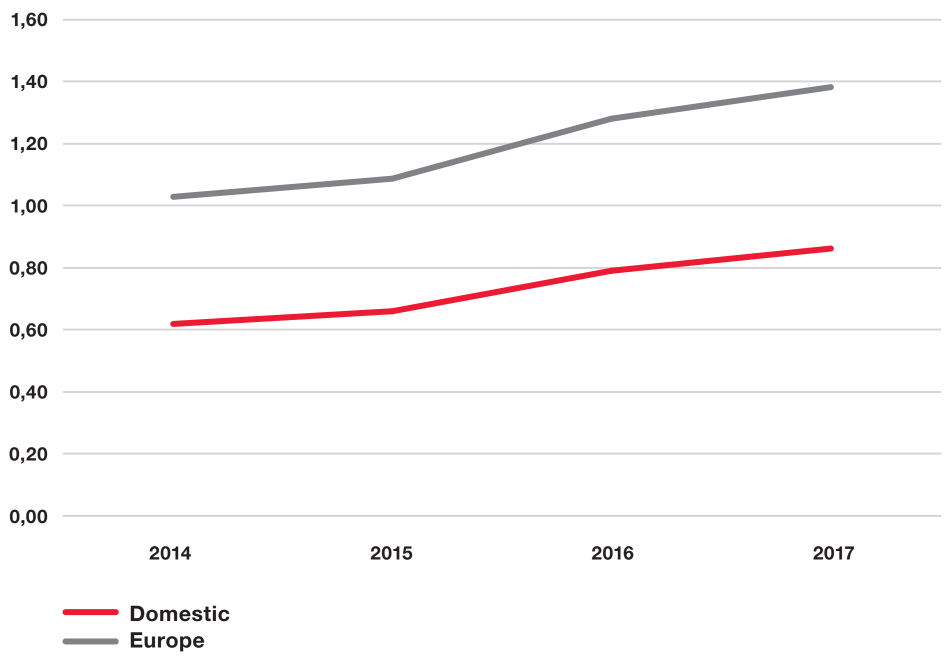
4.7 Postal market

Sources

Letter prices in Europe, Up-to-date international letter price survey, Deutsche Post, March 2018

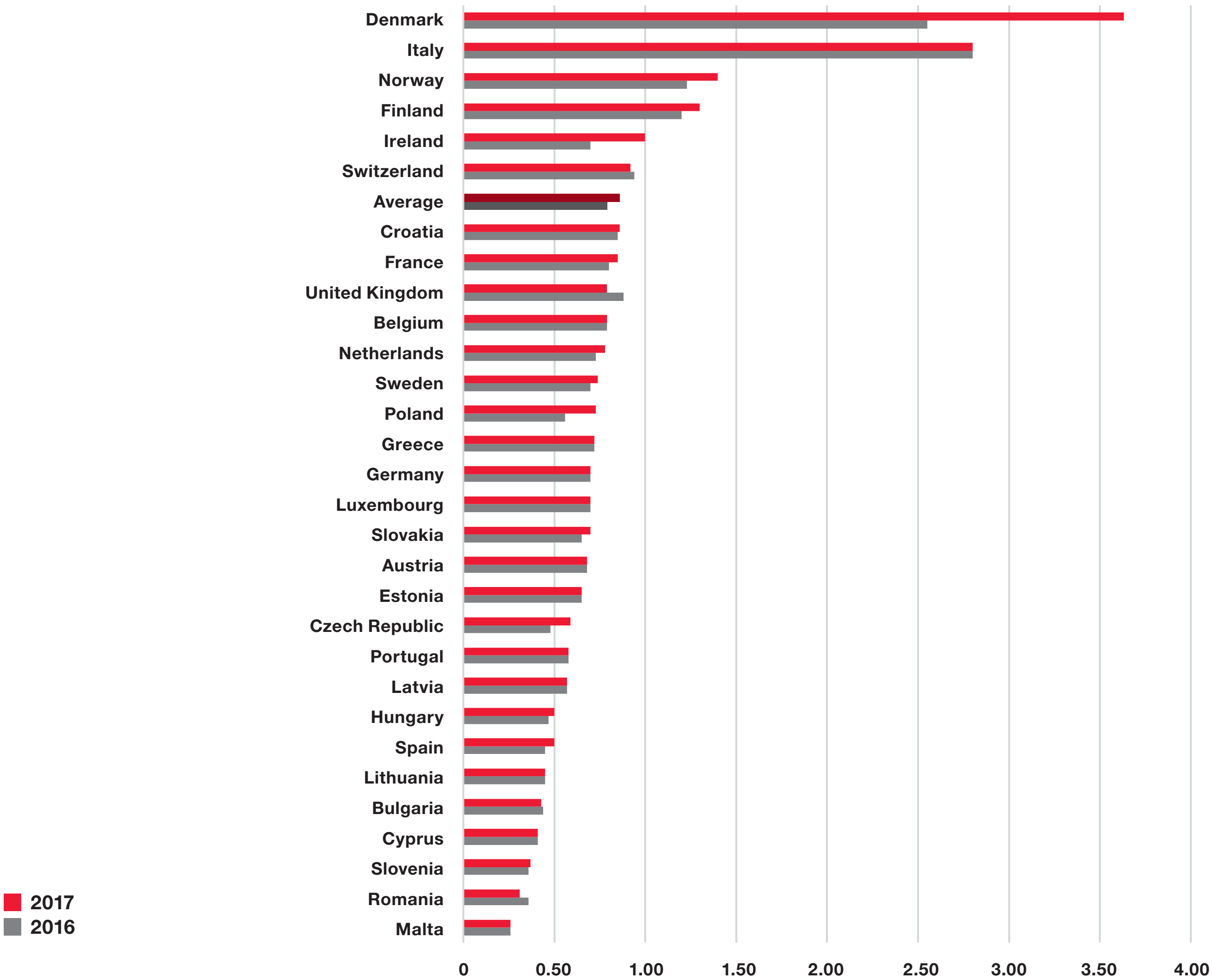
Report on core indicators for monitoring the European postal market, European Commission, December 2016

Evolution average postal prices in Europe, in €, 2014-2017



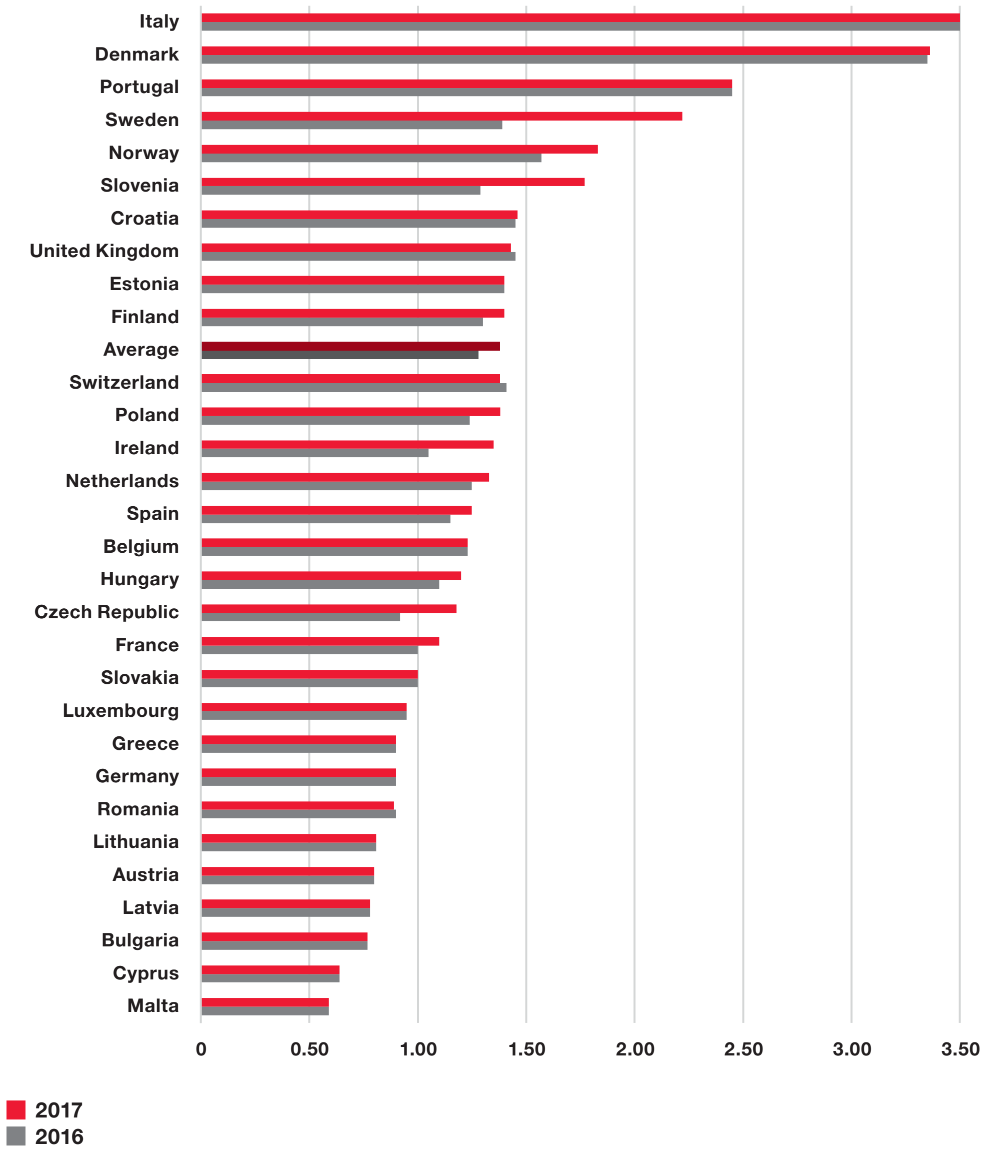
- On average, postal prices in Europe have increased by 38.7% in the last 3 years for a domestic sending.
- Since 2014, postal prices have increased on average by 95.2% for letter mail in Europe.

Nominal price for a domestic standard letter, in €, 2016 and 2017



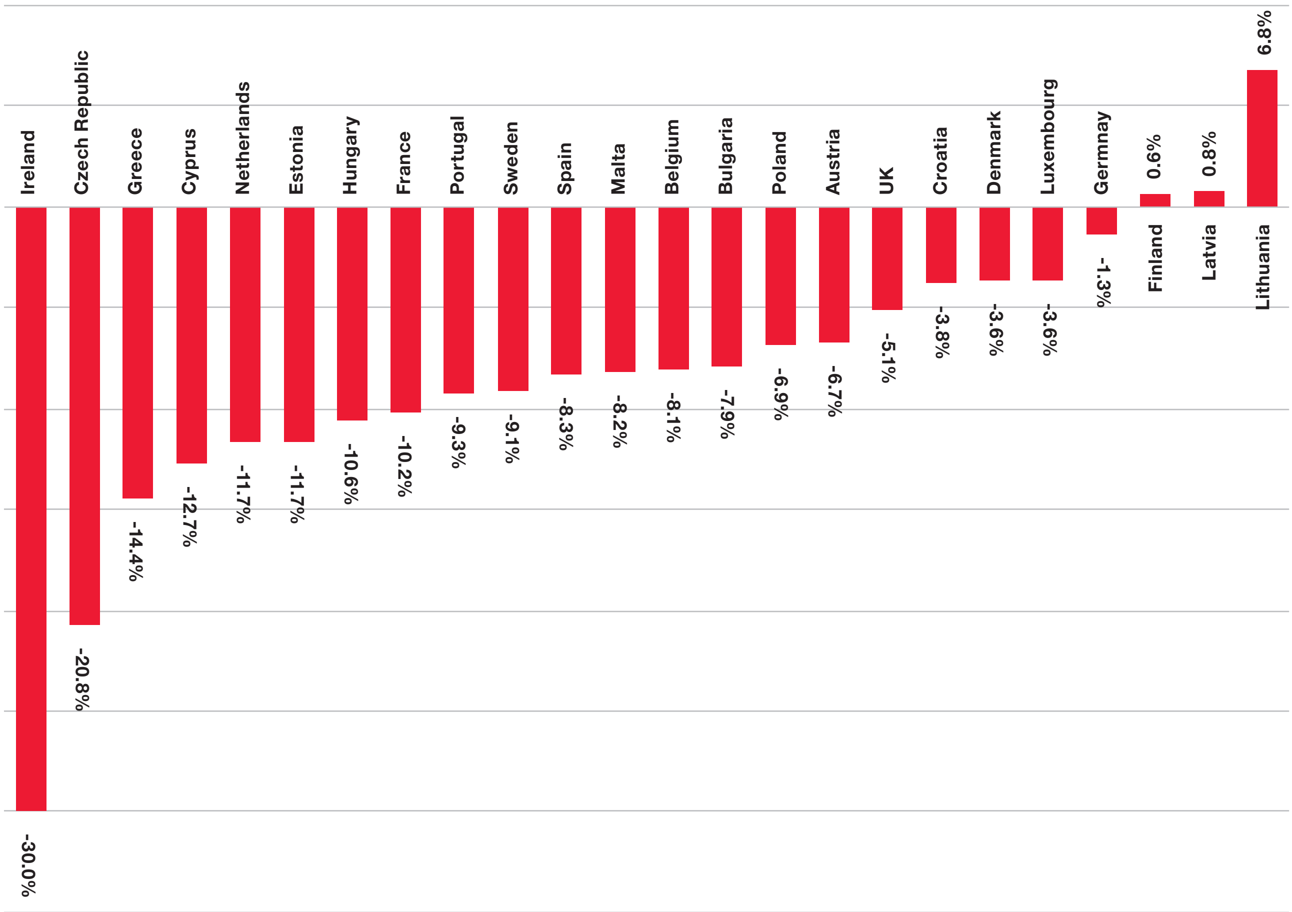
- The average price for a domestic standard letter is 0.86€ in Europe.
- Italy and Denmark have the highest prices for domestic standard letters in Europe. In both countries, the price per piece is more than 2.50€.
- Between 2016 and 2017, domestic letter prices rose significantly in Denmark (+42.4%), Ireland (+42.9%) and Poland (+30.4%).
- Cheapest domestic letter prices are registered in Malta, Romania and Slovenia. The price per piece is less than 0.50€.

Nominal price for a letter mail in Europe, in €, 2016 and 2017



- The average price for letter mail in Europe is 1.38€. This is 7.8% more than in 2015.
- The situation of the price for letter mail in Europe is similar to the domestic market. Italy and Denmark have also the highest price for letter mail in Europe with a price close to 3.50€.
- Malta and Cyprus have the lowest prices in Europe with less than 0.70€ per piece.
- Sweden has registered the largest price increase (+59.7%).

Letter volumes, % change, 2013-2015

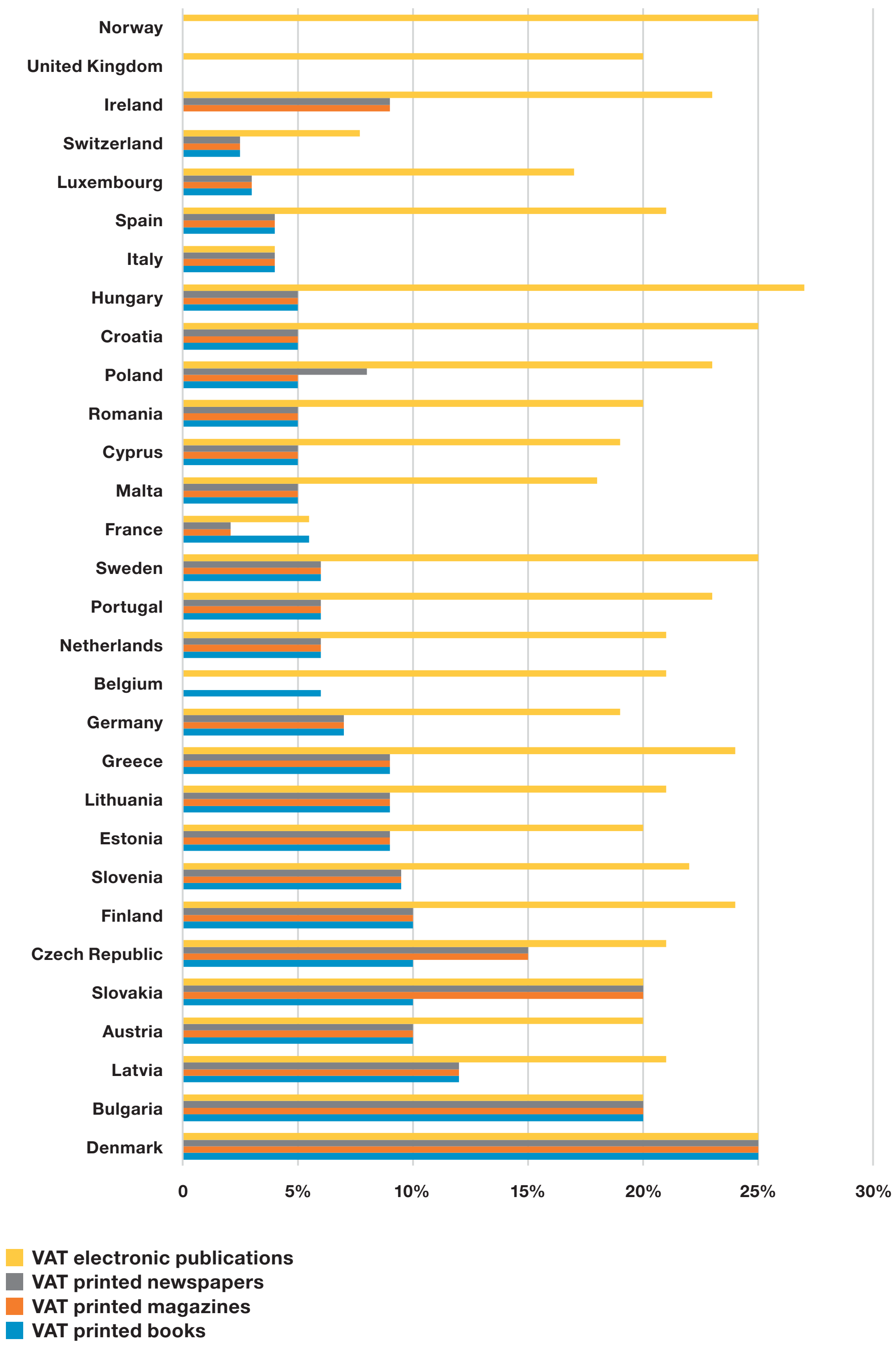


- Between 2013 and 2015, letter volumes have increased in Finland, Latvia and Lithuania.
- Lithuania has registered the highest increase of 6.8% over the period.
- Ireland had the sharpest decrease (-30%).

4.8 VAT rates

Sources
European Commission, January 2018

VAT rates applicable to printed books, printed magazines, printed newspapers and electronic publication, January 2018



- Most European countries are using the possibility of granting printed publications with a reduced VAT rate with the exception of Denmark and Bulgaria. Both countries are also applying the highest standard VAT rate.

- Norway and the UK are granting a zero % VAT rate on printed books, magazines and newspapers. Ireland is granting it only to printed books.

- Reduced rates are ranging from 0% to 12%.

- In compliance with EU legislation, most of European countries are applying the standard VAT rate to electronic publications with the exception of France and Italy.

5. COUNTRY REPORTS

Sources
Intergraf's member federations' information

5.1 Austria

2017 turnover
The turnover in the Austrian printing industry was relatively stable in 2017.

Trends in specific market segments
The book, magazines and direct mail markets were stable whereas the newspapers market has decreased in 2017.

Trends in the number of operating companies
The number of companies has decreased in 2017.

Trends in printing processes
Digital printing, flexography and large format printing are growing processes in Austria, while offset and gravure printing remain stable.

Uptake of new media by printing companies
Digitalisation has become part of the business model for printers in Austria.

Trends in costs of the printing industry
Labour costs are increasing, so are paper, inks, energy costs and postal rates.

Developments affecting competitiveness
A special tax is applied on printed advertising goods (so called Werbeabgabe). The same tax is not applied to internet advertising. In 2017, the Verband Druck & Medientechnik called again for equal treatment, together with other stakeholders. The government still evaluates to replace this print-specific tax with a universal ad tax ("Google tax"), but experts remain unsure, whether such a tax can be applied in principle.

5.2 BELGIUM

2017 turnover

The turnover in the Belgian printing industry showed a positive trend in 2017.
The corrected figures of the National Bank show that the first and second quarters were negatively oriented (-4%). However, with a progress of 6% compared to 2016, the second half of the year was extremely strong. Printers achieved an additional turnover of 0.95% over the entire 2017. Thanks to the strong performance in pre-press and pre-media services, the total growth for the graphic industry (excluding newspapers) amounted to 2.5%.

Trends in specific market segments

The book, magazines and newspaper markets are decreasing, direct mail remains stable and packaging as well as catalogues and advertising are registering increases in 2017.

Trends in the Belgian printing industry

There are 609 graphic companies still active on the market, which is a drop of 4.99%. The number of employees (excluding newspapers) dropped by -4.7% in printing, -15.1% in pre-press companies and -12.1% in finishing companies. The total number of people employed in the sector amounts to 9,871. In addition, there are 5,217 main and secondary self-employed persons operating in the Belgian graphic industry.
Pre-press and pre-media services performed strongly in 2017 (+10.2%) and finishing companies experienced a growth of 0.75%. Printers invested approximately the same amount as in 2016, while it was clear that pre-press services invested more. Finishing companies and newspapers invested considerably less.
Newspapers are still experiencing extremely difficult times, with a decline of 9.49% and a sharp fall in investments (-44.4%).

Trends in foreign trade

Export figures for the Belgian graphic industry are important because these constitute approximately 36% of the total turnover. Exports dropped by -6.92%. The share of exports to Belgium's most important trading partners, the Netherlands and France, decreased but exports to Germany increased. The trade balance was positive but the surplus dropped by 25% in one year.
The overall graphic turnover increased by 2.5%, despite the lower export figures. This means that the domestic demand for graphic products is increasing again.

Trends in the labour market

The average occupancy rate of the production capacity reached a level of 80.62% in 2017, which is slightly higher than the figure for 2016 (80.25%). The slightly higher occupancy rate was generated by the consolidation in the Belgian graphic industry.

Trends in printing processes

Digital printing, sheetfed, packaging gravure and large format printing are growing processes in Belgium, while web offset and publication gravure printing decrease. Flexography remains stable.

Uptake of new media by printing companies

Printing companies are increasingly offering new media services to their customers but digitalisation is still seen as competition.

Trends in costs of the printing industry

Paper prices, inks prices, energy costs, postal rates as well as labour costs are increasing while insurance costs and transport costs remain stable.

Developments affecting competitiveness

In Belgium night shift labour costs are significantly high.

5.3 BULGARIA

2017 turnover

In 2017, Bulgaria recorded a Gross Domestic Product (GDP) growth of 3.9 % compared to 2016. This reinforced the steady growth trend over the past 3 years. A similar growth is expected in 2018. Exports of products and services showed an increase of 7.2%. Unemployment in the country declined to a record low level: only about 6.1%. Inflation is within the 2% range. The consumer demand is growing - it is about 12.6% higher than in 2016, and the average wage increased by 15.1%. Exports amounted to € 26 billion, that corresponds to an increase of nearly €3 billion compared to the previous year. The last years, imports reached €28 billion, an increase of 15.7%. Foreign direct investment reached €910 million.

In the Bulgarian printing industry, there are no change in the macro data compared to 2016. The number of printing companies is 1,025 (1,036 companies in 2016). The number of employees in 2017 reached 8,520 (8,100 in 2016). The volume of the print production reached about 660 million BGN (1 BGN = 0,51 €), the exported production - about € 52 million. The average salary is 950 BGN per month.

The Bulgarian printing industry is stable in quantitative and qualitative indicators. The problem is the lack of qualified workers and specialists in the printing industry.

Trends in specific market segments

In the past three years, the trends in the Bulgarian printing industry have been steady. The volume of offset printing, incl. books, magazines, newspapers, commercial printing, is unchanged from the previous year. The share of the packaging printing increased by 3%, the share of direct mail increased by 5%. The purchase of digital packaging printing machines increased by 9%.

Trends in the labour market

Statistics show that the number of companies and employees has remained the same as in 2016. Unemployment in the industry is only 2.7%, with the tendency to turn into constant demand for professionals and workers. The labour market in the country is extremely weak, and government regulations are already in place to facilitate the transfer of foreign specialists and workers.

Trends in the number of operating companies

In 2017, only 2 companies stopped their activity, and 4 exchanged their owner and management. At least 2 mergers of companies are ongoing.

Trends in foreign trade

In 2017, export of Bulgarian print production reached about €52 million, which corresponds to an increase of 20%. 65% of exports have been for European customers. The main exported print products (over 45% in total) are packaging products, labels and specific materials.

Competition in the book market comes from China and Turkey thanks to their possibility to deliver at low cost and with short delivery times.

Trends in printing processes

In 2017, the share of digital printing equipment and digital print production increased by about 5.1%. Despite the higher price per unit, advantages are indisputable. The growth in packaging is particularly high and is expected to continue in the coming years.

Flexography is also increasing. Offset processes and large format are stable.

Trends in costs of the printing industry

Labour costs in the printing industry of Bulgaria are steadily rising. Salaries in 2017 have registered an increase of 7% and so did contributions to pension funds. Costs for insurance and social contributions have also increased. For retired workers, there is also an increase in pensions. Total wage costs have been increased by 8%.
Unfortunately, all components of the manufacturing process in the printing industry are on the rise. Energy costs for energy increased by 4% in 2017 and further increased by more than 20% at the end of the year. Paper and cardboard prices, incl. recycled paper, increased by more than 10%, the price of postal services increased by 5% and the insurance prices by 5%. The prices of most printing inks and transport services remained constant. Most printers have been forced to raise their prices, but not significantlyl in order not to lose their customers. As a consequence, less resources are available for innovation, social activities and sustainable development.

Developments affecting competitiveness

The Bulgarian legislation, the taxation system and the government regulations are aiming to provide acceptable conditions for the business in the country, including the printing industry. In Europe, Bulgaria has the lowest level of taxation and more relaxed regulatory regimes are implemented for small and medium-sized companies. Electronic government communications, payments and services are being implemented.

5.4 DENMARK

2017 turnover
The overall turnover in the printing industry in Denmark is stable.

Trends in specific market segments
In general, sales of print products dropped in Denmark, except for packaging and newspaper which remained stable.

Trends in the labour market
The number of work places in the Danish graphic industry increased and unemployment dropped.

Trends in the number of operating companies
The number of operating companies has increased, while the number of bankruptcies was particularly high.

Trends in foreign trade
Denmark had a reduced trade deficit in 2017.

Trends in printing processes
Digital printing, flexography and large format are increasing in Denmark while offset is decreasing.

Trends in costs of the printing industry
Labour costs in the Danish printing industry are increasing, so are paper prices and postal rates. While ink prices, energy costs and insurance costs remain stable, transport costs are decreasing.

5.5 ESTONIA

2017 turnover

The turnover of the Estonian printing industry is increasing overall but some market segments are decreasing.
2015 turnover: € 197 million
2016 turnover: € 207 million
2017 turnover: € 218 million

Trends in specific market segments

Books, packaging and commercial printing markets are increasing while magazines, newspapers and direct mail are decreasing.

Trends in the labour market

Unemployment rate in Estonia is in general low, however the Estonian printing market is lacking qualified and skilled workers. In 2017, about 3.600 employees worked in the printing industry.
Training for printing skills is available only at vocational level in one vocational educational school. As a result, the number of young people who are willing to study and work in the printing industry is low. Short-term courses and specific trainings in printing skills are offered as part of lifelong learning.

Trends in the number of operating companies

There has not been any noticeable bankruptcies or concentration of companies.

Trends in foreign trade

The situation remained stable. Competition is coming from neighbouring countries and from Eastern Europe.

Trends in new media

The development to offer new digital and media services by printing companies has been very slow in Estonia.
Estonia is well known to be a well-advanced digitalized country. The Estonian government is promoting and developing digitalisation in society – e-books in schools, about 2.500 e-services, paper-free government, e-signature and electronic exchange of documents, national e-health system (99% of prescriptions are digital), electronical tax declaration system etc. Digitalisation is therefore everywhere, also in the printing industry. Advertisers and publishers tend to order smaller runs and personalised advertising is increasing. For certain markets, especially magazines, digitalisation is still a threat.

Trends in costs of the printing industry

Due to the lack of qualified workers, labour costs are continuously increasing.
Estonia is not producing raw material and therefore prices are following the same trend as the main markets in continental Europe. Prices for most main materials in the printing industry have remained stable except for paper, energy and transport. Increases in costs are expected in the near future due to increasing taxes in Estonia.

5.6 FRANCE

2017 turnover
The turnover of the French printing industry decreased by 2%. After correction, it should be less.

Trends in specific market segments
Book market: -1% (the decrease is mostly due to the election period); Magazine market: -1.4%; Direct mail market: -3.8%; Catalogue market: -0.2%; Advertising: -2.8%.

Trends in foreign trade
In volume, imports are decreasing (-3%).
Volumes are low but imports of catalogues and advertising from Poland are increasing; so do the imports of magazines from the Netherlands and the imports of books from Austria.

Uptake of new media
For some media, in particular advertising, digital is still perceived as competition by the printing industry.

Trends in costs of the printing industry
Postal costs are increasing.

Developments affecting the competitiveness of the industry
The magazine market is affected by the legislation about plastic packages that are not biodegradable (they are now forbidden and the alternative solutions are expensive); by the the eco-contribution; the possible bankrupty of Presstalis, which distributes magazines in France.

5.7 GERMANY

2017 turnover

In 2017, the nominal turnover of all printing companies subject to turnover tax amounted to approximately € 20.8 billion, which corresponded with a slight decline of 0.1 % compared to 2016. Price adjusted turnover amounted to approximately € 20.9 billion and grew by 0.2 %.

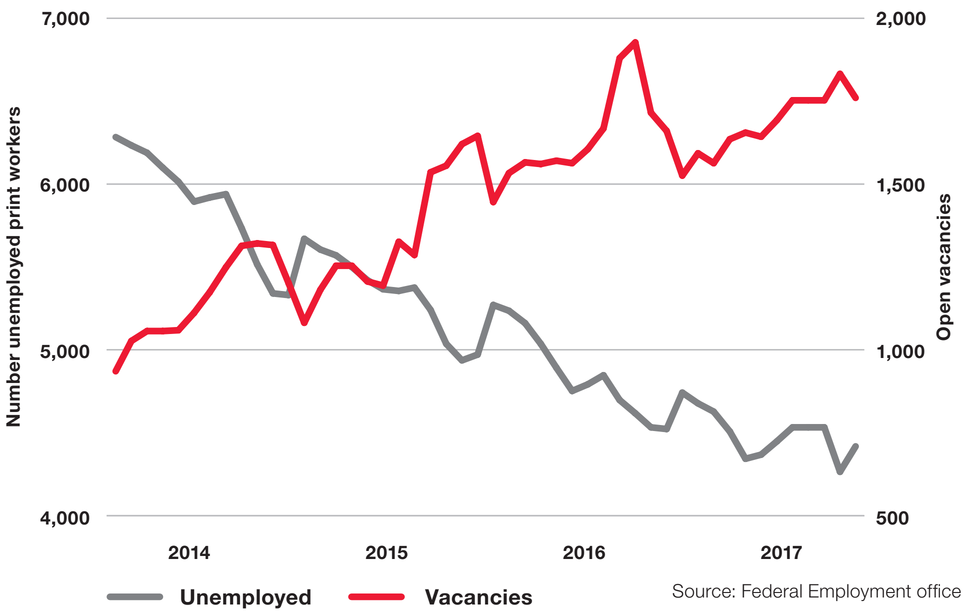
Trends in specific market segments

The current data for market segments is available up to the third quarter of 2017. According to that data, production of catalogues and posters grew in cumulative value by respectively 2.2% and 1.8%. Moreover, business stationery and labels increased in cumulative value by respectively 2.5% and 2.2%.

Yet, important printed products decreased in value. Advertising printing (e.g. supplements, leaflets) declined by 2.0%, magazines by 2.5%, newspapers by 4.4%, and books (together with printed maps) by 4.8% compared to the same period in 2016.

Trends in the labour market

The number of unemployed workers in the printing industry has decreased and the number of open vacancies has increased.



Source: Federal Employment office

Trends in the number of operating companies

The number of operating companies decreased in 2017.

Employment size classes	Firms			Employees		
	Number	Share in %	YOY in %	Number	Share in %	YOY in %
1–9	5,887	70.3	-2.0	18,092	13.4	-2.3
10–19	1,039	12.4	-6.1	14,309	10.6	-5.7
20–49	845	10.1	-2.6	25,727	19.0	-2.3
50–99	352	4.2	2.3	24,117	17.8	2.4
100–499	241	2.9	-2.8	44,554	32.9	-2.5
500 and more	9	0.1	-10.0	8,689	6.4	-11,9
Total	**8,373**	**100.0**	**-2.5**	**135,488**	**100.0**	**-2.4**

Source: Federal Employment office (as of 30th of June 2017); Reporting category: firms with at least one employee liable to social security contributions; Calculations: bvdm

Trends in foreign trade

In 2017, the exported printed products and printed publishing products decreased by 0.9% compared to 2016. Their value amounted to € 4.32 billion. On the other hand, German imports of the same products also declined by 2.3%. Their value amounted to € 2.52 billion. German's most important importing country regarding printed products is Poland. In 2017, imports from this country grew by 1.1% and amounted to € 732 million. Its share increased to 29% of all imported printed products into Germany.

By contrast, the two most important customer countries for German printed products remained Switzerland and Austria. Exports to Switzerland (€ 680 million) declined by 2.4%, and exports to Austria (€ 628 million) decreased by 2.5%. Together their share added up to approx. 30% of all German exports of printed products and printed publishing products.

Since 2015, Germany's imports of printed publishing products from Latvia recorded a very strong growth. Yet, the absolute levels are low. They amounted to € 2.7 million in 2015 and € 27.7 million in 2017.

Trends in printing processes

In 2017, products produced with digital printing processes again gained in relative importance (8.8% growth). Up to the third quarter of 2017, the share of this printing process reached 6.8%. By contrast, the share of gravure printing and offset printing has been stable, they represent respectively 11% and 79%.

Uptake of new media

According to the 2018 bvdm survey's results on the current economic situation of the German printing industry, approx. 15% of companies already offer new media services like programming, app creation, and web design. One third of the companies surveyed do see a real business opportunity in this field in the coming years.

Seeing the structural shift in advertising budgets from print to digital media as a consequence of digitalisation, competition to print is still perceptible. Though, whereas the shift is expected to continue, the trend is probably going to level off. This means that the hype surrounding the supposed better effectiveness of digital advertising is also going to flatten.

Many businesses look out for new opportunities to overcome the mature and highly competitive market for traditional printing services. They try to distinguish themselves from others setting up new business models and offering services like databases, web design, digital out-of-home advertising or cloud solutions. Yet in general, printing companies see their new digital business models as a means for the purpose of guiding the customer to their core business, ie printing.

Trends in labour costs of the printing industry

In 2017, official data (currently available up to the third quarter of 2017) show an average increase of labour costs in the printing and reproduction media industry by 0.9% compared to the same period in 2016. In August 2017, the collective-agreement wage in the printing industry also grew by 1.8%.

Printing businesses expect a further rise of labour costs in 2018. In addition to that, bvdm and the trade union ver.di are going to negotiate a new collective wage agreement in autumn 2018.

Trends in production costs of the printing industry

In 2017, the average producer prices for ink were stable. By contrast, graphic paper prices declined on average by 1.1%. Though, the negative trend has been turning positive since October 2017. So, in February 2018 paper prices grew by 6.3% compared to the same month in 2017. Moreover, electricity prices and prices for printing machines increased in 2017 by respectively 1.6% and 1.4%.

Developments affecting the competitiveness of the industry

From January 2019 on, the German minimum wage is expected to amount to € 9.19 per hour (from € 8.84 per hour). Although, the collective bargaining wage of the German printing industry exceeds the current and the expected new minimum wage, the new amount is going to have a significant impact on the wage structure of not collectively bounded printing companies.

With the implementation of a higher minimum wage in 2019, many printing companies will be forced to adjust also the wages for better-qualified jobs. This is going to cause costs that those companies cannot easily counterbalance by increasing selling prices. This is especially true for companies that are in strong competition with foreign countries.

5.8 ITALY

2017 turnover

The second half of 2017 was stable following a negative first half. 2017 closed with a total reduction of the turnover by 3.5% of the Italian printing industry compared with 2016.
The analysis of 2017 sales still shows negative results for most companies, as compared to 2016: 85% of the companies registered a decline of 4.8% on average and only 15% of them showed an increase in turnover of 8.6% on average.

Trends in specific market segments

The overall production of the Italian printing industry in 2017 decreased by 7.1% compared to 2016, with a modest downturn in the publishing printing segment (-2.5%) and a more significant decline in the advertising and commercial segment (-10.3%).
In the publishing printing area, in 2017 the negative production result is entirely due to magazines (-11.6%), whereas we should point to the upturn in the production of books, which started to grow again by 2.1% compared to 2016 thanks to a significant recovery in the second half-year.
In the advertising and commercial printing segment, the production of printed matter in 2017 saw a negative trend of 10.6%, whereas forms increased by 3%, but the absolute production levels of this product category are rather low now.
In terms of demand, the new element of 2017 for the publishing printing segment was a positive turnaround in the book market, according to Aie (Italian Publishers Association) with a revival both in terms of sales value in the trade channels (+2.5%), and, above all, of number of copies sold (+1.2%).
The magazine sector, by contrast, was still under pressure in 2017. The number of readers continued to drop (to around 27% for weekly publications and 24% for monthly publications according to Audipress) and, above all, the advertising market also decreased, following the cyclic trend of years without big sports media events. According to Nielsen, the market for investments in advertising in 2017 closed with a total of approximately € 6.3 billion, down 2.1% compared to 2016. The trend in press advertising was even worse: -7.1%, the result of -7.7% in newspapers and -6.2% in periodicals. In the rest of the advertising market, the only growth segments, apart from the web, were radio, cinema, Transit (moving billboards on public transport) and Go Tv (out of home Tv).
Regarding advertising and commercial printing, demand for direct mail advertising continued to drop in 2017 (-5.2% compared to 2016), whereas outdoor advertising saw a two-digit decline (-11.2%). Referring to the segment as a whole, the decrease in press, direct mail and outdoor advertising in 2017 may have been largely determined by the reduction in advertising from the large-scale retail trade (-8.5% according to Nielsen), which remains one of the main investing segments.

Trends in the labour market

Based on the latest available Eurostat data, employment in the printing industry in Italy increased by 1% in 2016 compared to 2015, from 79,697 to 80,468 workers.
Assografici estimates that the number of people employed in the industry in 2017 was stable compared to 2016.
The number of hours submitted to the Cassa Integrazione Guadagni [Redundancy Fund System] in the "Publishing, printing and reproduction of recorded media" segment decreased throughout 2017: the total decline during the year was 40.6% compared to 2016, totalling approximately 7.5 million hours.

Trends in the number of operating companies

In 2017, the Infocamere data showed that 17,621 companies were operating in the "Printing and reproduction of recorded media" segment, about 95% of which have less than 20 employees. Active companies dropped by 335 units compared to 2016: the decrease corresponds to 1.9% of the total. In particular, in 2017, 385 printing companies started to operate and 987 went out of business.

While in decline, they are still important numbers for the industry. The impression is that the "natural selection" of companies has taken place and those that have resisted on the market are now flexible enough to handle the situation.

Trends in foreign trade

Export value of the printing industry closed the year 2017 with a decline by 7% compared to 2016, which affected the total turnover of the segment. In terms of share, the export value in 2017 dropped to 15.7% of the printing industry turnover estimated by Assografici, from 16.4% the previous year.

Considering the products, in 2017 a significant decrease trend was observed in export value for magazines (-17%) and advertising and commercial printed matter (-9.9%), whereas the decline was more modest for books (-1.5%). Among the minor products, the export of stamps grew remarkably, and an increase was also observed in picture books (+6.7%), maps (+2.9%) and transfers (+5.4%). The export of postcards (-21.8%), calendars (-8.8%) and manuscript or printed music (-6%) registered a decrease.

From the geographical standpoint, exports in 2017 showed a decrease to all five main countries of destination; a modest decrease for France (-3.3%), whereas a double-digit decrease was registered in exports to Germany (-19%) and the United Kingdom (-10.1%). Exports also decreased to Switzerland (-8.6%) and the United States (-11.1%). Turning our attention to other countries of destination among the top 15, significant export decrease in 2017 was also witnessed to Poland (-14.5%), the Netherlands (- 34.4%), and Belgium (-22%). A strong increase, on the contrary, was registered in exports to Libya, Sweden (+37.8%) and Russia (+39%).

Regarding imports value, the closure of the year 2017 was essentially marked by stability, compared to 2016 (-0.1%), owing to the downturn in imports of magazines (-10.6%) and the slight decrease in advertising and commercial printed matter (-0.5%), against a fair increase in the import of books (+2.4%). The analysis of the five main countries of origin of printed products showed a modest increase in imports in 2017 compared to 2016 from Germany (+2.8%) and United Kingdom (+2.7%). A more significant increase was registered in imports from China (+13.9%), while a modest decrease was observed in imports from France (-1.3%) and the United States (-1.8%). Looking at the 15 leading countries of origin, imports in 2017 saw a significant drop from the Netherlands (-34.6%), Austria (-7.6%) and Czech Republic (-30.9%). On the contrary, imports from Spain (+13.7%), Slovakia (+6.8%) and Switzerland (+18.5%) all registered a significant increase.

Trends in printing processes

As regards investments, the further increase in the sales of printing and paper converting machines on the internal market (+6.9% according to Acimga) reflects the positive effects of the measures tied to the national programme for industry (Piano nazionale Industria 4.0) implemented by the Government in support of innovation.

Digital and flexographic printing machines are increasing, offset and packaging gravure are stable whereas publication gravure and large format are decreasing.

Uptake of new media

In 2017, the integration by traditional printing companies of communication services tied to internet continued, as did the increase in industrial, decorative and 3D printing.

The growth in the value of the e-book market, while slowing down, continued as well, in fact it rose by 3.2% in 2017 compared with 2016 (source Aie), a sign that reading behaviors are becoming more complex, and digital reading increasingly integrates reading on paper.

Furthermore, in 2017, various printed packaging segments saw an increase (especially self-adhesive labels and flexible packaging), with a number of printers, and in particular book printers, who developed other activities in packaging.

Trends in labour costs

Hourly wages in contracts for workers and employees in the printing industry remained stable in 2017 compared to 2016, based on Istat data, also owing to the fact that the industry is still waiting for the renewal of the collective agreement, which is currently in a deadlock.

Trends in production costs

Regarding raw materials in 2017, variations were observed in the prices of the main types of printing paper, rather different depending on the specific type, averaging between -0.3% and +4.6% compared to 2016 (source Chamber of Commerce of Milan). However, it should be noted that from the second half-year of 2017, there has been a widespread and significant increase trend.
Ink prices, based on Assografici surveys with the main suppliers, also showed a significant increasing trend in 2017 compared to 2016, ranging between +6 and +7%.

Development affecting competitiveness

On the demand side, in a context of greater consumer confidence, in 2017 a fair increase was observed in domestic consumptions (+1.1%), in line with the rise of household spending (+1.3%), according to Istat.
Regarding expenditure for cultural products such as books and newspapers, it remains low, representing less than 1% of the total purchases of Italian families, with the number of book readers dropping to around 40%, according to Istat, and reading rates among the lowest in Europe. Industry advocates for the 500 euros voucher for cultural products for 18-year-old will be confirmed and accompanied by measures such as income tax reductions for the purchases of books, newspapers and magazines, similar to those already in place for personal health care expenses.
To spur the recovery of the press advertising segment, on the other hand, industry awaits the promulgation of the Decree to implement the tax deductibility (75% and up to 90%) in 2018 of investments by companies in advertising on newspapers and periodicals.

5.9 LUXEMBOURG

2017 turnover

Trends in specific market segments

Trends in specific market segments
Whereas for most segments, the situation is stable, newspapers are decreasing in Luxembourg.

Trends in the labour market

Global unemployment in Luxembourg was 5.8% in 2017.

Employees	2005	2010	2011	2012	2013	2014	2015	2016
Total number of employees	1,215	1,153	1,097	1,017	985	902	774	733
Male employees	967	913	875	807	791	725	578	529
Female employees	248	240	222	210	194	177	196	204
Luxembourgish employees	581	553	531	504	494	447	313	319
Foreign employees	634	600	566	513	491	455	461	414

Source: Chamber of Crafts 2017

Trends in the labour market

Companies	2005	2010	2011	2012	2013	2014	2015	2016
Total number of companies	39	40	39	38	36	36	37	36
With 1-4 employees	10	12	11	12	10	10	13	14
With 5-9 employees	13	10	12	8	10	10	8	7
With 10-19 employees	5	7	4	7	4	6	4	4
With 20-49 employees	5	6	8	7	8	5	8	8
With 50-99 employees	2	2	2	2	2	3	3	1
With 100-199 employees	3	1	-	1	1	1	1	2
With 200-499 employees	1	2	2	1	1	1	-	-
With more than 500 employees	-	-	-	-	-	-	-	-

Source: Chamber of Crafts 2017

Trends in foreign trade

Printing services providers from emerging countries especially from Central and Eastern Europe have increased the competition on the Luxembourgish printing market because they can offer low-cost manufacturing services. In fact, the labour costs in Luxembourg are extremely high compared to the labour costs in those emerging countries.

Trends in printing processes

Digital printing is progressing in Luxembourg, so are packaging gravure and large format. Sheetfed offset is stable whereas weboffset and flexography are decreasing.

Trends in costs of the printing industry

Labour costs are increasing, so are paper prices and energy costs.

Developments affecting the competitiveness

There is a discussion on an increase by 10% of the minimum wage and a decrease of the weekly hours (40 hours currently).

5.10 NETHERLANDS

2017 turnover

In the Netherlands, the economic crisis is over and the Gross Domestic Product (GDP) is growing very strongly. This is however not the case for the printing industry. The domestic market for print products and services is shrinking. Total turnover for the domestic and foreign market is going up and down in the last three years but stays on a low level. 2017 data are provisional but show that the level is lower than in 2016.

Figure 1 - Printing industry turnover and GDP The Netherlands (2010= 100)

Year	Domestic market	Foreign market	Total turnover	Net sales (x 1.000 Euro)	GPD* NL (2010 = 100)
2005	124.3	64.3	112.3	€ 5,206,000	93.9
2006	125.0	67.8	113.5	€ 5,262,000	97.2
2007	127.4	85.8	119.0	€ 5,517,000	100.8
2008	121.4	91.8	115.5	€ 5,355,000	102.5
2009	109.0	91.8	105.6	€ 4,799,000	98.6
2010	100.0	100.0	100.0	€ 4,636,000	100.0
2011	95.8	107.8	98.2	€ 4,529,000	101.7
2012	82.0	111.3	87.8	€ 4,170,000	100.6
2013	79.0	116.6	86.6	€ 3,931,000	100.4
2014	71.7	115.0	80.4	€ 3,744,000	101.8
2015	65.4	114.8	75.3	€ 3,470,000	104.1
2016	64.6	145.2	80.8	€ 3,724,000	106.4
2017	60.5	140.5	76.6	€ 3,530,000	109.7

*Gross Domestic Product (GDP)
** Provisional figures

Trends in specific market segments

In the segments press, direct mail and advertising, the turnover is shrinking. In book printing, there is in 2016 and 2017 an increase but also a strong competition with Denmark and China. Printed advertising continues to decline and it is not expected to rise in 2018. There is a strong trend among publishers to change investments from print to web-based and social media publishing. Newspaper circulation numbers are going down year after year. Direct mail is also changing to social media and internet communication. Moreover, local governments offer more and more possibilities to do all transactions and communication by internet and social media. Tax declarations for all companies are only possible by internet and almost all citizens make their tax declarations by online. So there is a strong movement from paper to digital communication and information exchange. In Amsterdam, the local government wants to change the distribution of non-addressed commercial print to a system that allows posting only with a yes-sticker on the post box.
As advertising expenditures are shifting from print to digital communication platforms, publishers tend to minimalize their expenditures on free newspapers and so called free home-to-home local newspapers.
Packaging printing is rising as a result of the growing Dutch economy and the rise of consumers' spending.

Trends in the labour market

Figure 2 - Employment printing industry

Year	Employees	Self employed	Total
2007	33.500	4.040	37.540
2008	32.500	4.080	36.580
2009	31.200	4.060	35.260
2010	29.000	3.835	32.835
2011	27.000	3.715	30.715
2012	25.000	3.730	28.730
2013	24.000	3.595	27.595
2014	21.000	3.485	24.485
2015	20.000	3.320	23.320
2016	19.500	3.235	22.735
2017	19.000	3.195	22.195

Employment is shrinking and the unemployment rate in the printing industry is going down but is still three times as high as the national unemployment rate. In the Netherlands, unemployment is at the end of 2017 4.3%. The unemployment rate of the printing people is 13.4%. In 2009, the employers' organisation and trade unions have established a mobility agency (Centre for Creative Careers; C3works!). This mobility agency organises career support and training for unemployed printers and other unemployed graphic workers directly at the start of unemployment, while unemployment agencies of the government only starts after 6 months of unemployment. The government is changing the unemployment benefit period step by step from 38 months to 24 months. At the same time, the government is changing the year of retirement: 66 in 2018, 67 in 2021 and 68 in 2033.
In the training market, there is a strong shift to alternative training programs for a career move to other professions outside the printing industry.

Trends in the number of operating companies

Figure 3 - Companies

Year	Companies total	Companies with employees	Companies one person	Share of one pers.comp.
2007	4.040	2.275	1.765	44%
2008	4.080	2.220	1.860	46%
2009	4.060	2.190	1.870	46%
2010	3.835	2.095	1.740	45%
2011	3.715	2.065	1.650	44%
2012	3.730	1.990	1.740	47%
2013	3.595	1.845	1.750	49%
2014	3.485	1.720	1.765	51%
2015	3.320	1.605	1.715	52%
2016	3.235	1.530	1.705	53%
2017	3.195	1.460	1.735	54%
2018	3.080	1.370	1.710	56%

Figure 4 - Bankruptcies companies with employees

Year	Companies	Share
2007	49	2,2%
2008	51	2,3%
2009	103	4,7%
2010	134	6,4%
2011	129	6,2%
2012	97	4,9%
2013	88	4,8%
2014	71	4,1%
2015	58	3,6%
2016	26	1,7%
2017	34	2,3%

The total number of companies is shrinking. The number of one-person companies (self-employed without employees) is rather stable. The number of companies with employees is falling sharply.
The number of bankruptcies was 6.4% in the beginning of the economic crisis but was less every year until 2017. There was an increase from 1.7% in 2016 to 2.3% in 2017.

Trends in foreign trade

Figure 5 - Import and export print products inside and outside EU-15 (x 1.000 Euro)

	Import to NL			Export NL			
				to EU-15			
Year	EU-15	outside EU	total	Made in NL	Transit	outside EU	Total
2000	594,497	215,051	809,548	556,464	237,351	131,612	925,427
2001	612,164	195,486	807,650	592,631	252,777	139,235	984,643
2002	642,005	159,838	801,843	586,168	250,020	139,558	975,746
2003	643,909	149,233	793,142	574,660	231,315	146,893	952,868
2004	651,659	154,076	805,735	496,166	276,678	108,374	881,218
2005	633,543	174,024	807,567	537,452	265,914	108,057	911,423
2006	742,206	182,768	924,974	558,833	324,000	120,002	1,002,835
2007	721,147	182,334	903,481	543,771	304,545	110,897	959,213
2008	788,341	181,880	970,221	537,507	413,832	104,393	1,055,732
2009	714,866	189,790	904,656	490,227	343,493	84,788	918,508
2010	683,761	211,669	895,430	546,888	299,688	66,798	913,374
2011	687,654	225,190	912,844	514,703	315,463	65,820	895,986
2012	688,842	228,345	917,187	731,467	392,138	129,129	1,252,734
2013	664,034	213,691	877,725	776,049	353,571	74,306	1,203,926
2014	553,991	190,224	744,215	782,897	309,009	94,176	1,186,082
2015	715,767	207,585	923,352	755,923	254,669	164,750	1,175,342
2016*	714,270	207,369	921,639	931,580	560,673	232,895	1,725,148
2017*	736,596	213,850	950,446	878,890	482,907	247,892	1,609,688

*2016 and 2017 exports figures are provisional

In 2017, imports from the EU and outside the EU. Exports in 2016 were very high. In 2017, exports decreased compared to 2016 but remained at a high level. A large share of the exports are transit to other EU countries. Exports to outside the EU are growing more strongly and are even higher than in 2016.

Germany and Belgium are for the Netherlands by far the main trade partners in print. There has been a relocation of production to cheaper labour countries like Poland, Hungary and China.

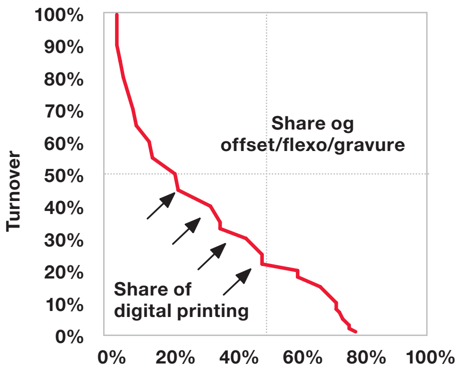
Trends in printing processes

Figure 6 - Share of companies with digital printing systems and share of total turnover from digital printing systems in addition to offset, flexo and gravure

Year	Share of companies with digital printers	Share of digital printers in total print turnover	Share of offset/flexo/ gravure in total print turnover
2004	22%	3.0%	97.0%
2008	43%	5.0%	95.0%
2012	62%	8.9%	91.1%
2018	78%	20.4%	79.6%

Survey research by GOC

Figure 7 - Share of printing companies using digitl printing equipment and share of turnover produced by digital printing versus offset/flexo/gravure



Survey research by GOC (response N = 464), January 2018

Figure 6 is the result of a January 2018 survey and shows that the share of companies with digital printing equipment is rising and very high at this moment. We calculated that in 2017 about 20% of total turnover was produced by digital printing equipment. These figures also point out that 'traditional' printing techniques like offset, flexo and gravure have still a dominant position. Figure 7 shows the share of companies and their individual share of turnover by digital printing equipment. Of all companies, 4% work with digital printing only and 22% only work with 'traditional' printing equipment.

Uptake of new media services

For already 20 years, a growing number of printing companies are offering more and more digital services. 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. It is therefore not an easy way to compensate the reduction of print.

In 2018, more data of this development was collected in a survey. Most printing companies experience digitalisation in the media as an ongoing threat for their business because the total amount of print is declining every year. Their strategy is first of all oriented on more efficiency in print production and not in developing more digital media business.

Coding and Print-to-web are techniques most companies can offer, creating and hosting websites to a much lesser extent, because of the competition with design, communication and IT companies. Mobile apps and mobile marketing are emerging techniques and services, also under strong competition with design and IT companies.

Figure 8 - Companies offering new media techniques and services

Techniques an services	Companies
(Bar) Coding	55%
Print-to-web	40%
Coating	36%
1-to-I communication	36%
Foil materials	33%
Create websites	21%
Crossmedia marketing	19%
E-mail marketing	16%
Websites hosting	13%
Optic techniques	12%
Mobile apps	10%
Video production	7%
Mobile marketing	6%

Survey research by GOC 2018

Trends in costs of the printing industry

In the Netherlands, there is a strong pressure on salaries in all industries. It will be unavoidable that wages will include, also in the printing industry.

Figure 9 - Domestic Producer Price Index (PPI) 2010 = 100

Year	Print industry	Paper industry
2005	103.6	94.8
2006	103.2	96.4
2007	103.7	100.8
2008	104.1	101.2
2009	102.8	96.6
2010	100.0	100.0
2011	100.5	104.9
2012	99.7	103.4
2013	96.5	104.7
2014	95.5	103.8
2015	94.6	104.0
2016	90.4	102.5
2017	89.7	105.0

In figure 9, the Producer Price Index (PPI) is given for the printing industry and the paper industry. Paper prices were going down in 2016 but going up strongly in 2017. The prices for the products and services of the companies in the printing industry are constantly going down. That means there is a strong price competition among companies as a result of too much printing capacity and shrinking numbers of print orders.

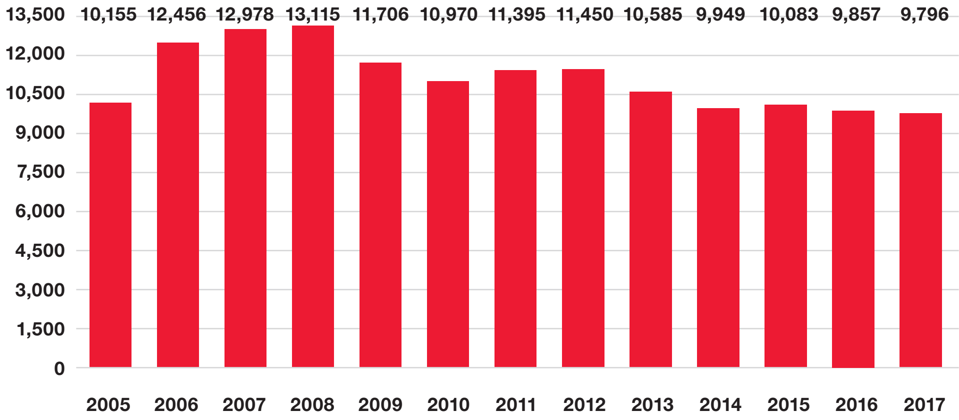
Developments affecting the competitiveness

The central and local governments cut down on costs, including for printing and see a cheap alternative in using social media and internet for communication. Greenwashing arguments are sometimes used for a shift from print to digital. There are no formal barriers raised against the printing industry but there is a rather strong public opinion in favour of digital. Many believe that the younger part of the population will turn almost completely to digital. The printed paper is for the older generation. Print needs a ‘new look and feel’. In 2016 and 2017, the Netherlands experienced a clear restore in turnover of printed books and a saturation point in the selling of new e-readers. Almost 80% of all households in the Netherlands have one or more e-readers and almost 100% have one or more smart phones. The end of the decline in print turnover has not been reached at the end of 2017.

5.11 NORWAY

2017 turnover

Turnover 2005-2017 in million Norwegian kroner.



Trends in specific market segments

Packaging is a growing market, books and direct mail are stable and magazines and newspapers are in decline.

Trends in the labour market

The situation is quite stable. However, as the unemployment rate is dropping, it is getting increasingly difficult to get production staff to the printing industry.

Trends in the number of operating companies

The number of companies is dropping, fuelled by some bankruptcies and by mergers. Larger units are needed for keeping the costs down.

Trends in foreign trade

Imports from other countries dropped in 2017 - for the first time in eight years. This is probably due to weaker demand for printed products and the weak Norwegian currency in 2017.

Uptake of new media

The uptake is ongoing for the last ten years. Printing companies are including new media services and digital products and services to a larger extent. For some, this is a business opportunity for others it is a threat.

Trends in costs of the printing industry

Compared to previous years, there were moderate labour costs increases in Norway in 2016 and 2017.

Paper prices have increased rapidly and is the most important change affecting the profit of the companies.

Developments affecting the competitiveness

The Norwegian Post is planning to reduce the numbers of post-delivery days to every second day from 2020. This will affect local newspapers and direct mail.

5.12 PORTUGAL

2017 turnover

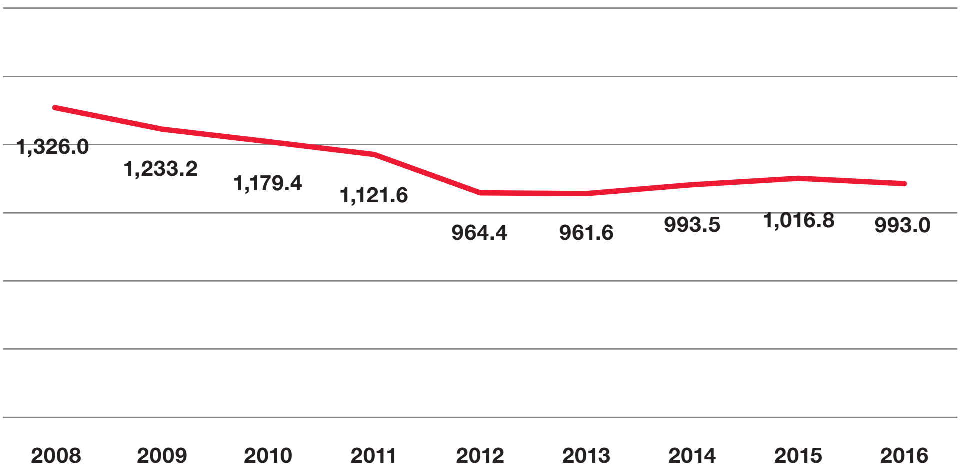
The 2016 (last available year), the printing industry turnover registered a decline of approximately 2.3%, after two consecutive years of growth.
Compared to 2008, the sector lost more than a quarter of its value: from €1,326 million in 2008 to €993 million in 2016.

Trends in Printing Industry Turnover

Year	% (When comparing with previous year)
2013	-0.29
2014	3.32
2015	2.34
2016(*)	-2.34

(*) Last year available.

Annual turnover (EUR million)

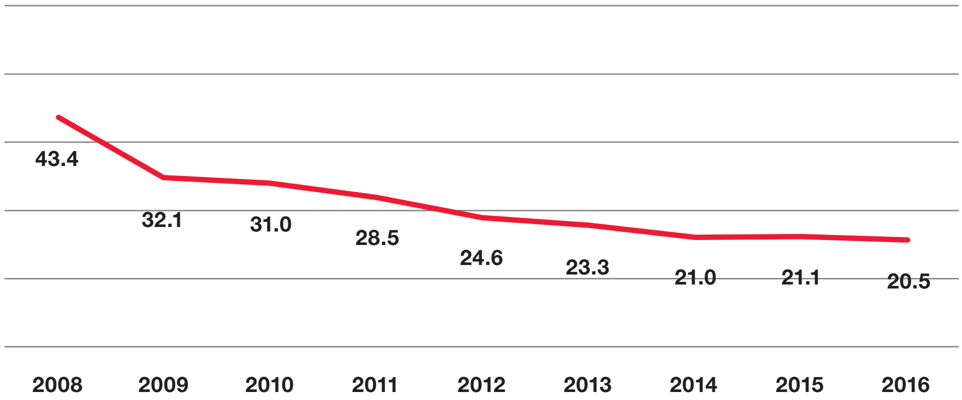


Source: INE (Portuguese National Statistical Institute - http://www.ine.pt),
NACE Rev. 2.1 – 18 – Printing and reproduction of recorded media

Trends in specific market segments

As far as the newspapers segment is concerned, it can be seen that its turnover slightly decreased compared to the previous year (-3.10%). This segment shows a downward trend in recent years, mainly explained by the growing preference for digital news.

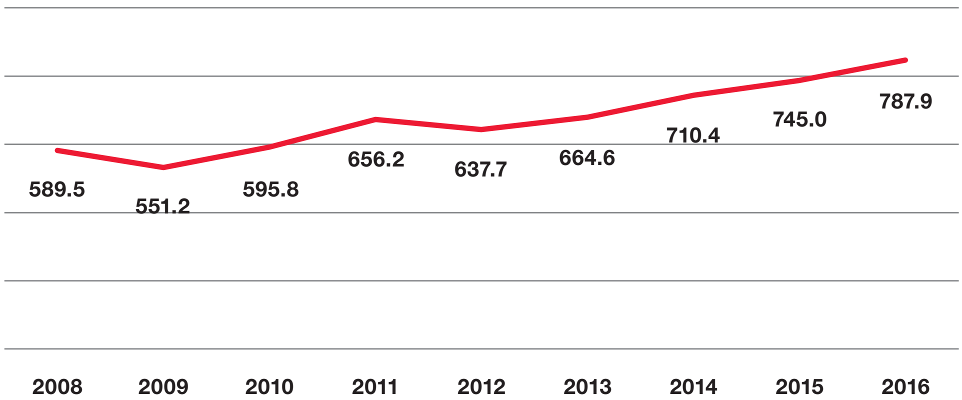
Annual turnover (EUR million) Newspaper printing



Source: INE (Portuguese National Statistical Institute - http://www.ine.pt),
NACE Rev. 2 – 1811 – Printing of newspaper

In relation to the paper packaging segment, there has been a steady increase in turnover over the last few years. Compared with the previous year there is an increase of around 6% (+5.76%).

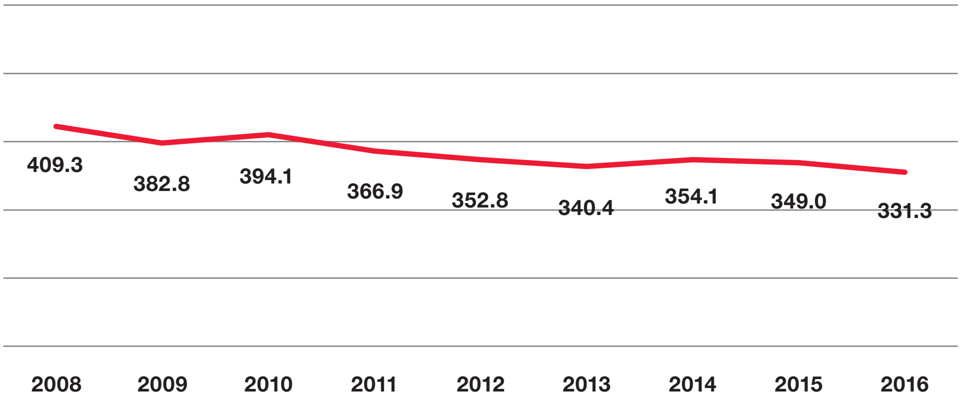
Annual turnover (EUR million) paper packaging



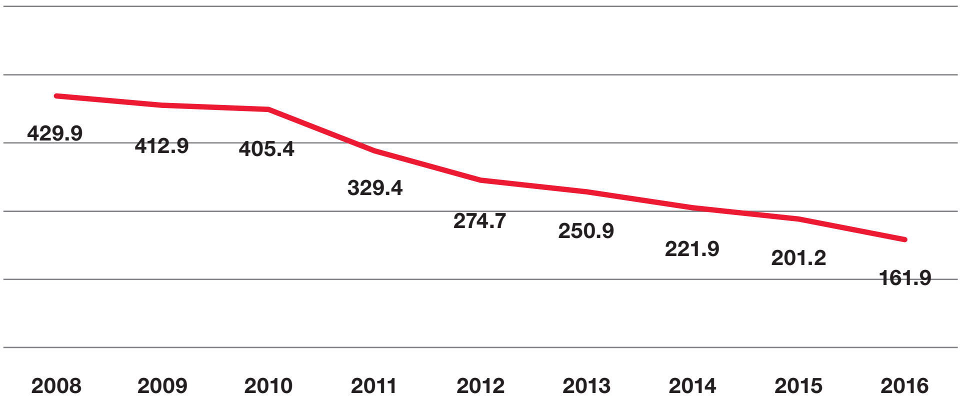
Source: INE (Portuguese National Statistical Institute - http://www.ine.pt),
NACE Rev. 2 – 1721 – Manufacture of corrugated paper and paperboard and of containers of paper and paperboard

By using the economic activities of book publishing, magazines publishing and advertising as proxi indicators for the respective segments of the printing industry, it is noticeable that the turnover of the first two segments, in 2016, decreased compared to 2015. Regarding the advertising segment, recovery started in 2014. Compared to the previous year, the turnover in this segment increased by almost 9% (+8.61%).

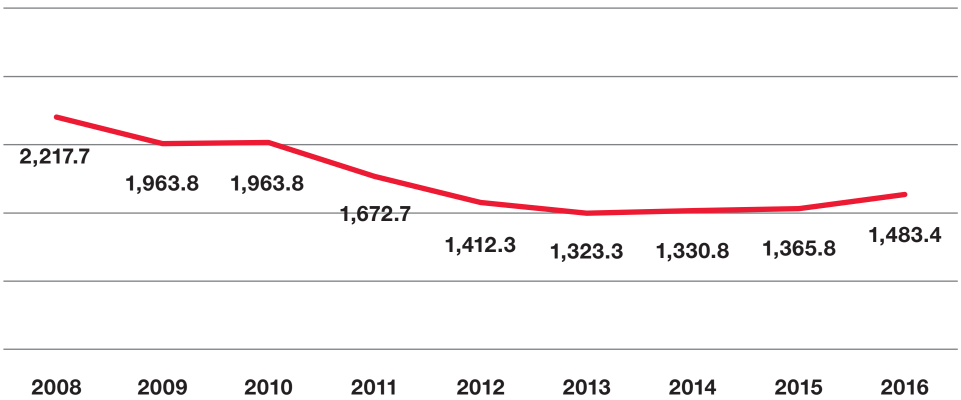
Annual turnover (EUR million) Book publishing



Annual turnover (EUR million) Magazines publishing



Annual turnover (EUR million) Advertising



Source: INE (Portuguese National Statistical Institute - http://www.ine.pt),
NACE Rev. 2 – 5811: Book Publishing; 5814: Publishing of journals and periodicals; 731: Advertising

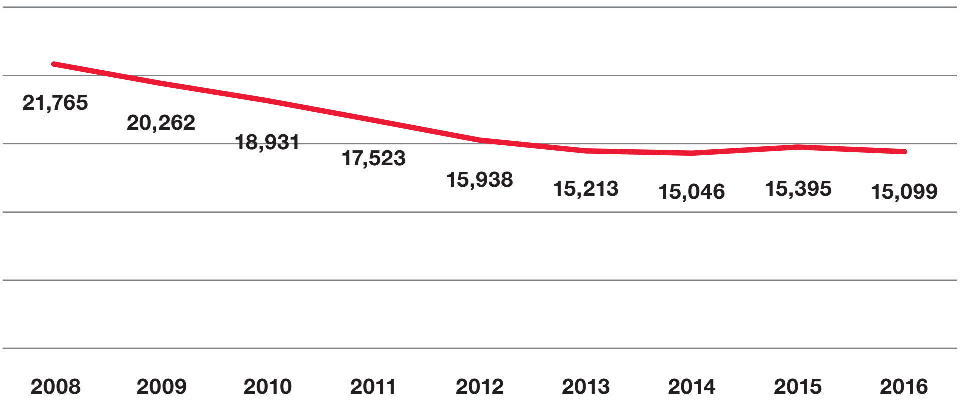
Trends in the labour market

The employment level in the printing industry is registering a small improvement in the second half of 2017. However. the number of employees in the printing industry companies is decreasing since 2008. which implies that the employment market is becoming smaller.

Trends in the employment level

Year	Month	% (When comparing with previous year)	% (Annual average)
2015	March	-0.3	-0.7
2015	June	-1.2	
2015	September	-0.1	
2015	December	-0.8	
2016	March	-0.2	-0.4
2016	June	-0.2	
2016	September	-0.3	
2016	December	-0.2	
2017	March	-0.1	0.1
2017	June	-0.1	
2017	September	0.4	
2017	December	0.3	

Employees in the Printing Industry



Source: INE (Portuguese National Statistical Institute - http://www.ine.pt),
NACE Rev. 2 – 18 – Printing ad reproduction of recorded media

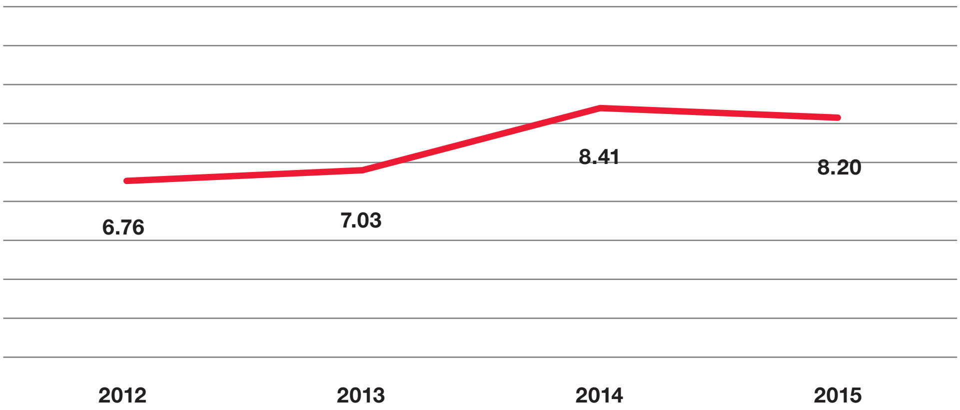
Trends in the number of operating companies

The 2016 data shows a reduction of 47 operating companies (-1,9%) then in the previous year (2015), however the comparison with the 2012 data shows a significant decrease in the number of operating companies – less 8,9% in a five-year period,

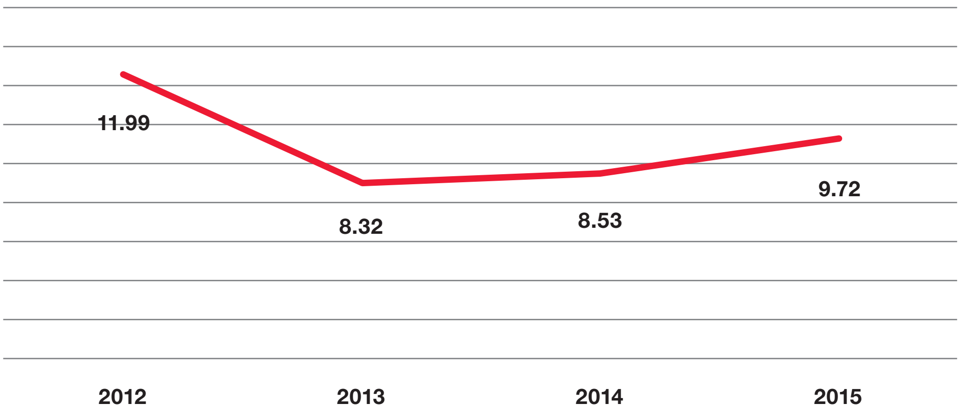
Trends in Business Demography (No,)

Year	2012	2013	2014	2015	2016
Operating Companies (No,)	2,694	2,559	2,509	2,500	2,453
New Companies (No,)	182	180	211	205	174
Dissolved Companies (No,)	323	213	214	243	n/a

Companies' birth rate (%)



Companies mortality rate (%)

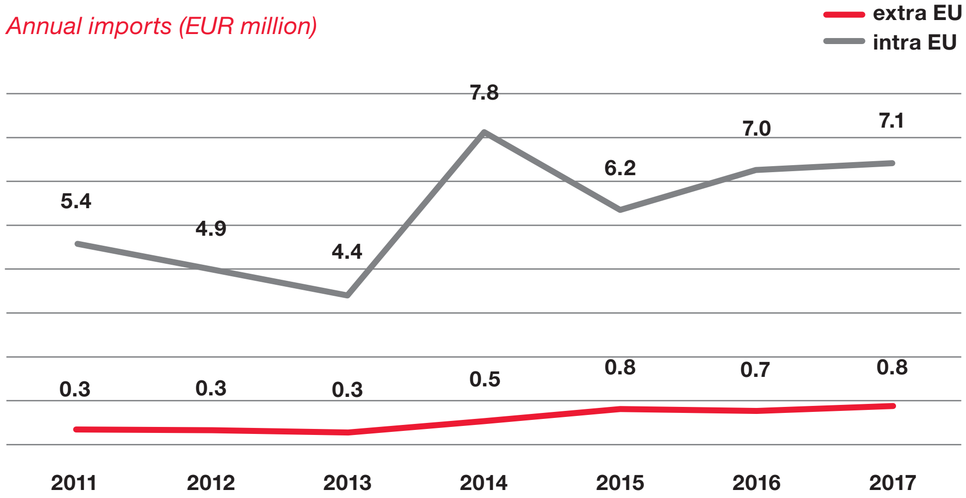


Source: INE (Portuguese National Statistical Institute - http://www.ine.pt)
NACE Rev. 2 – 18 – Printing and reproduction of recorded media

Trends in foreign trade

The imports of "printing and recording services" (CPA 2008 – 18) are mainly from EU countries and in 2017, the total amount of imports increased by 3.5% compared to 2016.

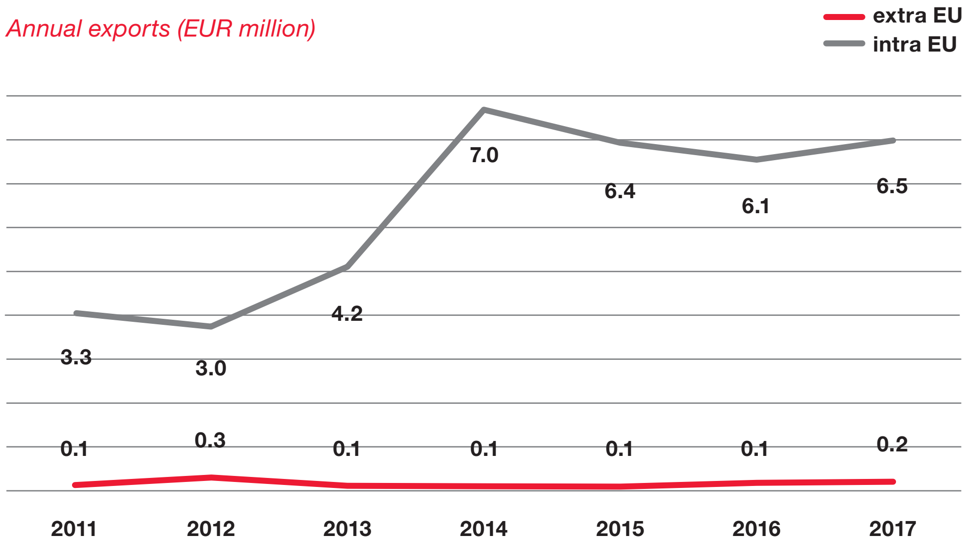
Annual imports (EUR million)



Source: INE (Portuguese National Statistical Institute - http://www.ine.pt)
CPA 2008 – Printing and recording services

Exports to EU countries in 2017 continued to grow. Since 2012, exports have more than doubled (+101.9%), from €3.3 million in 2012 to €6.7 million in 2017.
Compared to 2016, the total annual exports increased by 5.9%.

Annual exports (EUR million)



Source: INE (Portuguese National Statistical Institute - http://www.ine.pt)
CPA 2008 – Printing and recording services

The major competitors of the Portuguese printing industry are, historically, the German, the English and the French industries, in addition to Spanish companies due to their geographical proximity.

Trends in printing processes

The digital printing technologies are a priority for most printing companies. All digital workflow in printing is viewed by many companies as an enabler for greater productivity and quality.

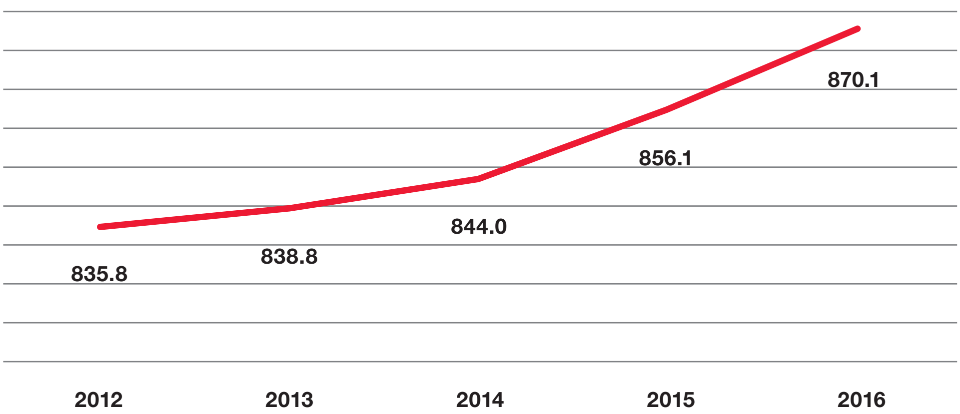
Uptake of new media

The uptake of media services is growing and the new digital services are part of the product portfolio of most Portuguese printing companies. Thus, digitisation is now viewed as complementary to traditional printing products and not so much as a competitive product. It is also viewed as a mean to increase efficiency, especially in the production of ultra-short to medium runs, to reduce resource consumption, storage costs and waste and it allows a fast response to market demands.

Trends in costs of the printing industry

Labour costs tend to increase, although the average value of monthly salaries remains low. In the industrial sectors, the average monthly value reached, in 2016, the amount of €870.10.

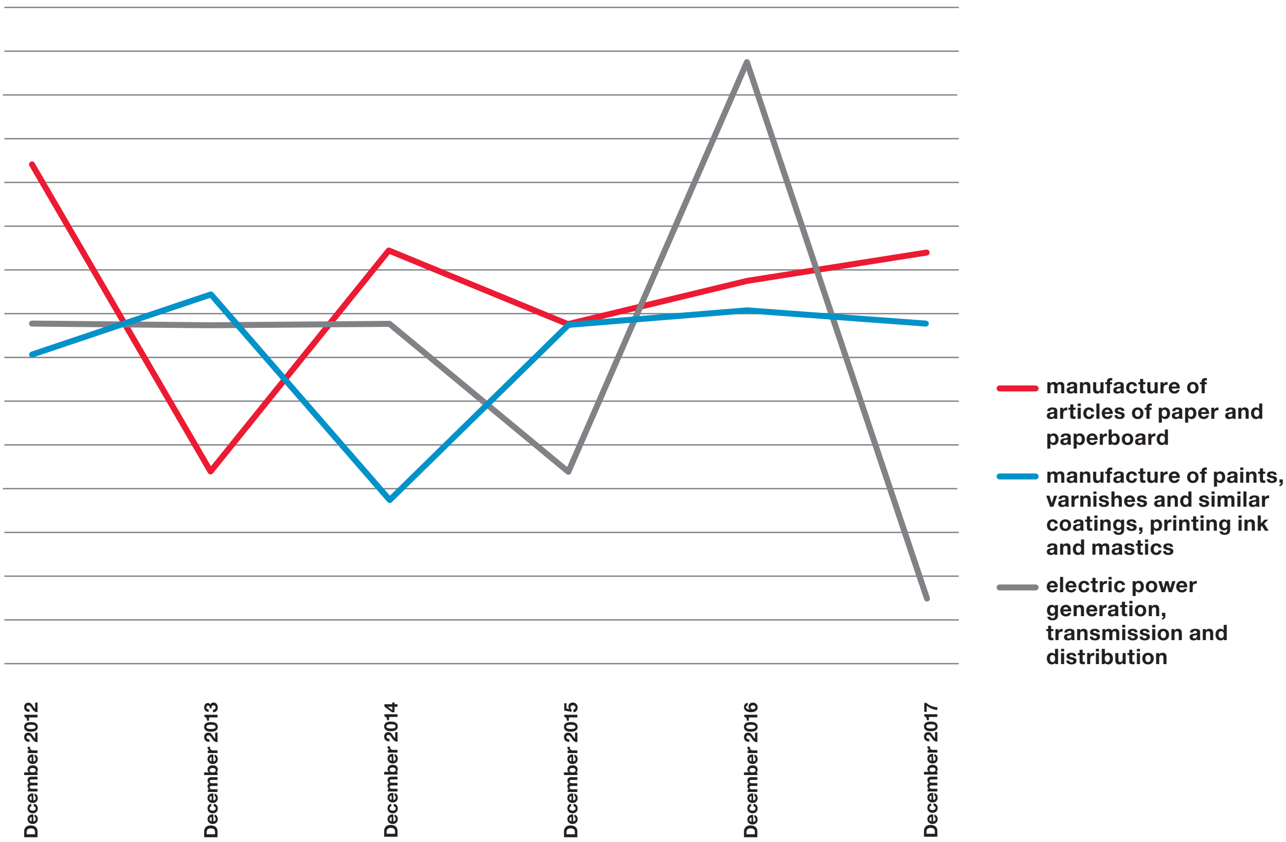
Average monthly labour remuneration (€)



Source: PORDATA

The evolution of the paper and paperboard price index shows a slight upward trend while the price index of printing ink shows a decreasing trend. Transportation costs increased due to the increase of fuel prices. Postal rates and insurance costs have experienced a small increase.

Prices index (%)



Source: INE (Portuguese National Statistical Institute - http://www.ine.pt)
NACE Rev. 2 – 172: Manufacture of articles of paper and paperboard; 203: Manufacture of paints, varnishes and similar coatings, printing ink and mastics; 351: Electric power generation, transmission and distribution

Developments affecting the competitiveness

One of the most important aspects is that the economic activity in Portugal is expected to continue to expand until 2020. Growth is expected to be sustained by goods and services exports, private and public investments and the increase in private consumption, supported by a favourable economic and financial environment.

Current projections show that, after an unprecedented recession, the Portuguese economy is expected to grow in the 2018-20 period.

This positive macroeconomic context is fundamental to enable business investments, so companies can improve their competitiveness and productivity.

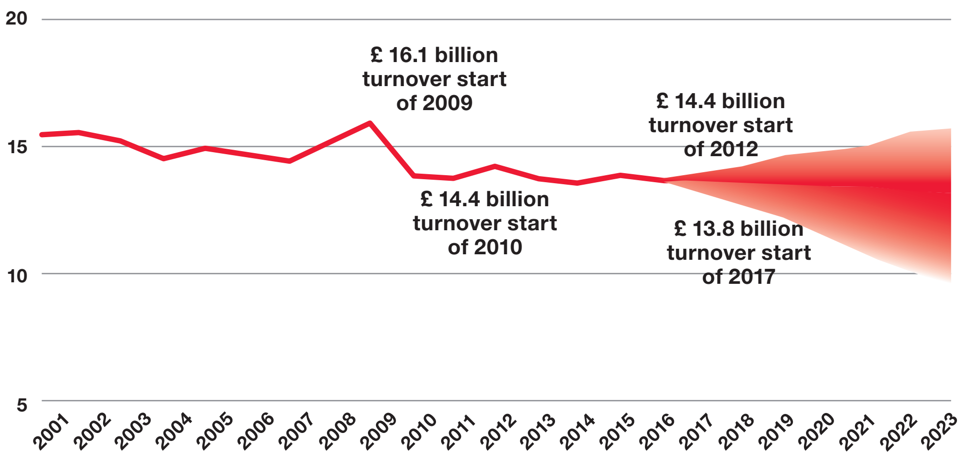
Moreover, European funds support companies with their investment efforts and the maintenance of favourable financing conditions.

5.13 UNITED KINGDOM

2017 turnover

It is expected that the 2017 turnover data may be slightly down for the entire printing industry. The fan chart below shows turnover on recent years and expectations for the next few years.

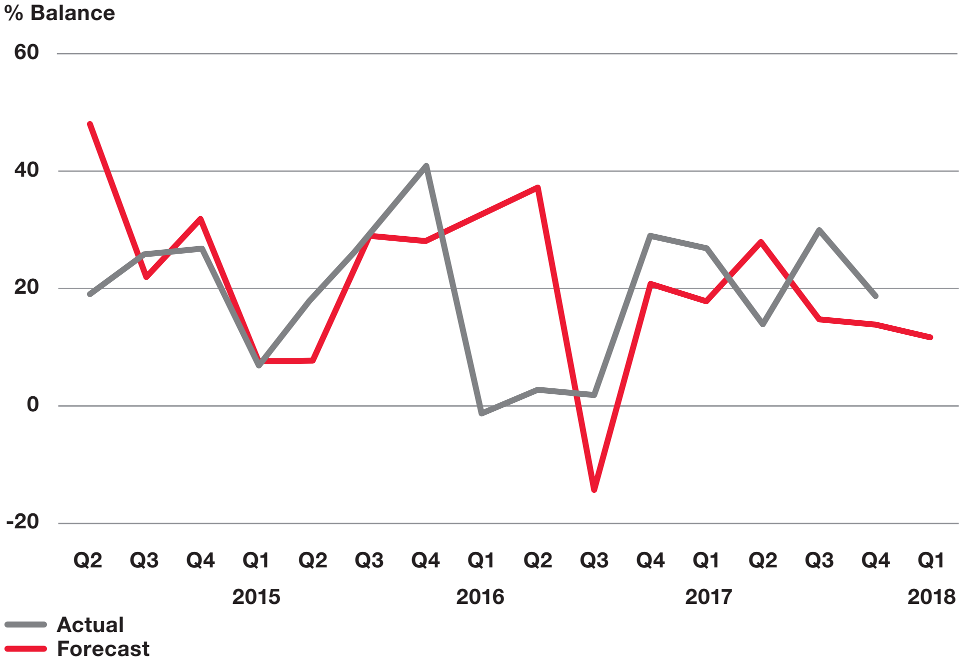
UK Printing industry - turnover (£bn) 2001-2023



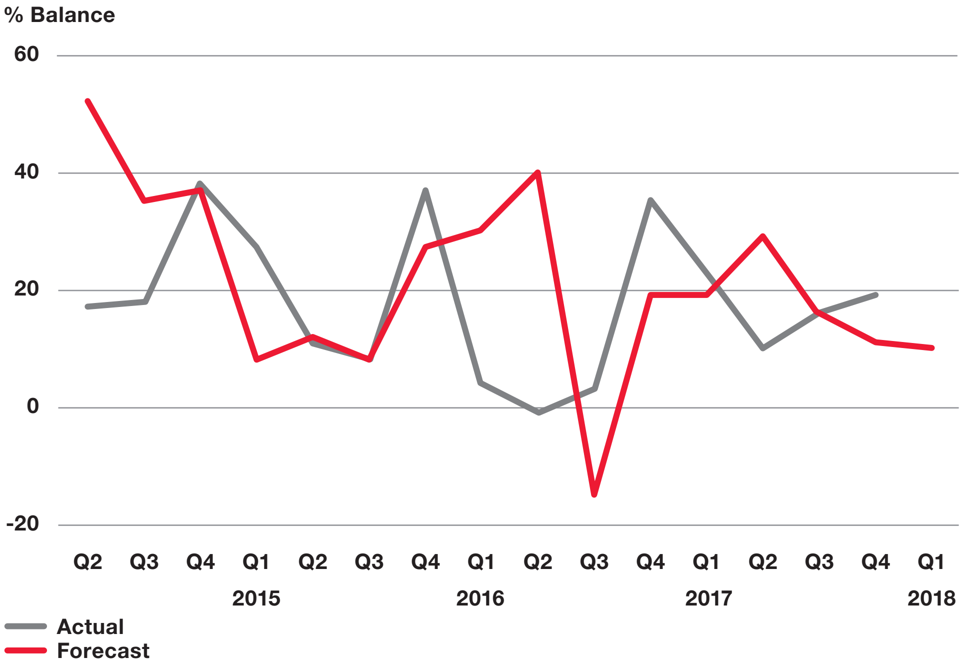
Source: BPIF Research; 2017 – 2023 forecast estimates

However, much of the headlines are often dominated by the changes that have been occurring in the newspaper and magazine sectors – which is facing considerable disruption from the rise of digital media and changing consumer behaviour. However, other sectors have exhibited more stability and some have seen healthy growth. The charts below from the BPIF Printing Outlook survey show that companies have been able to achieve output and order growth throughout 2017 (though not all will have achieved turnover growth).

Volume of output



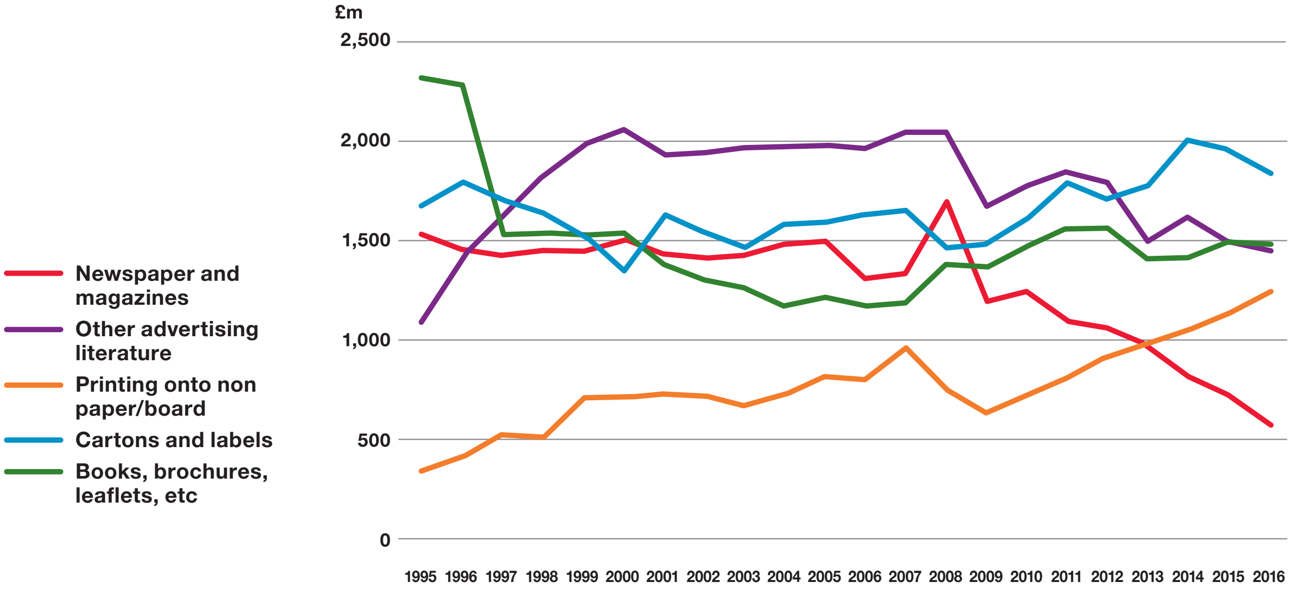
Volume of orders



Trends in specific market segments

The chart below shows recent turnover performance for some of the main sectors in the UK printing industry in the last 20 years.

Printing - sector performance (turnover)



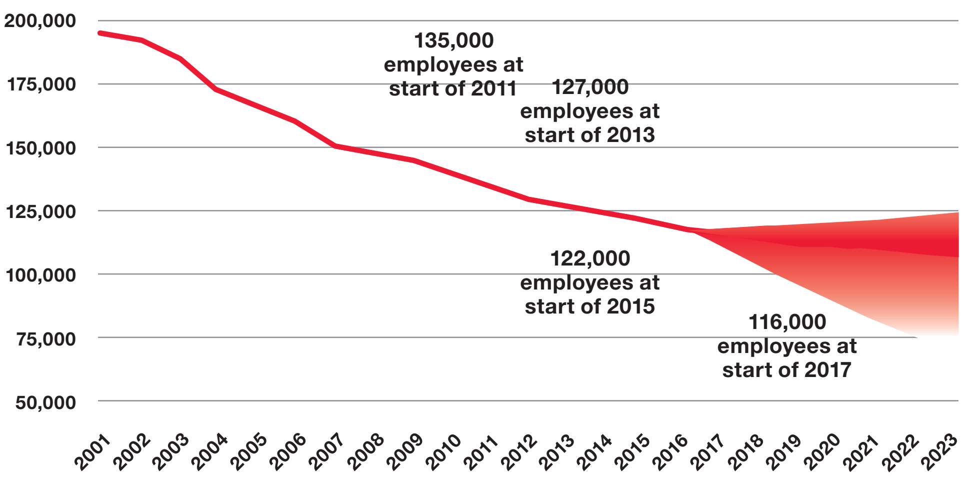
Source: BPIF Research analysis of ONS PRODCOM data

In particular, the book sector has recorded strong growth in recent years, printing on to materials other than paper/board (such as signage, large format, textile and vehicle graphics) has grown, as has paper and board based printed packaging and labels. Personalised and variable data printing services are expected to grow in the coming years.

It is notable that a number of high profile brands (Ikea, Apple and Google being some examples) are returning to print or being highly positive of their use of print.

Trends in the labour market

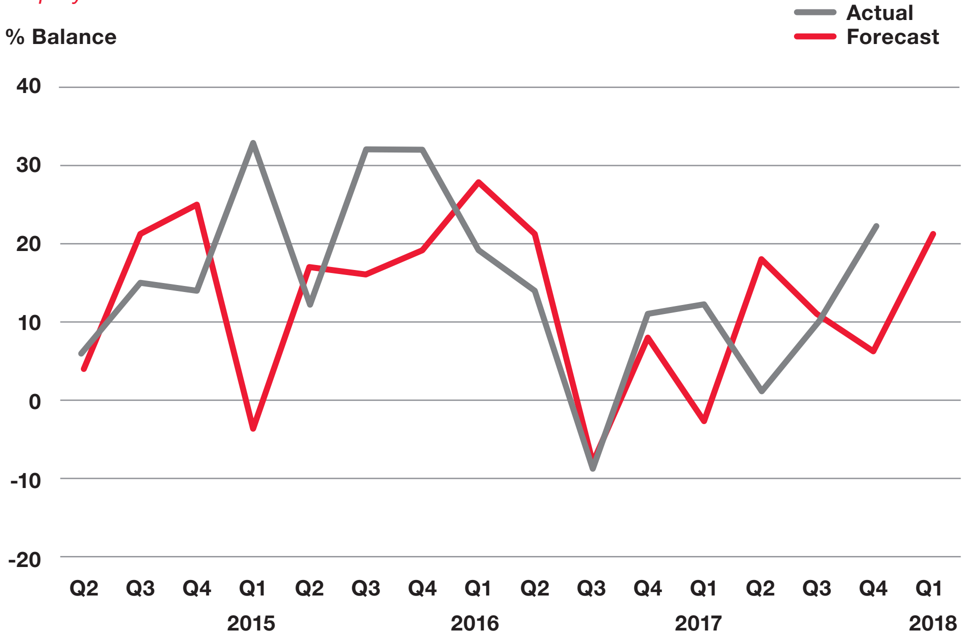
UK Printing Industry - number of employees 2001-2023



Source: BPIF Research; 2017 – 2023 forecast estimates

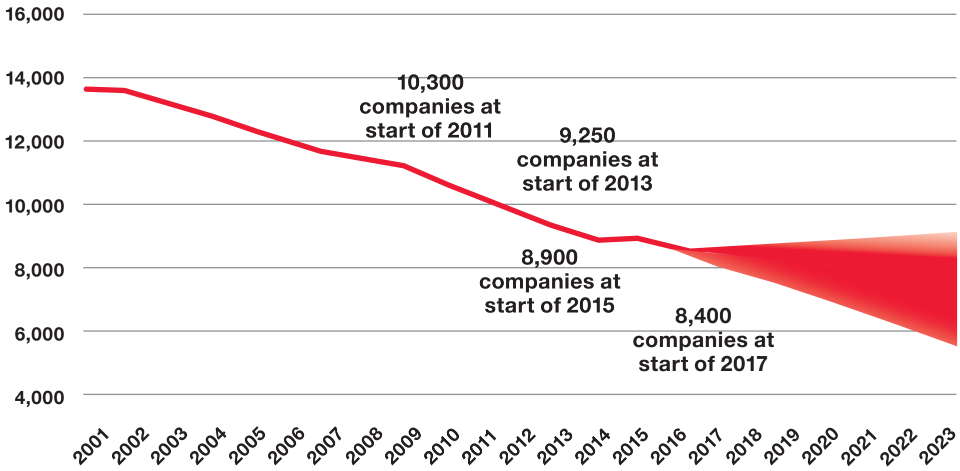
Whilst the overall number of employees in the industry is falling, the headline data is swamped by the decline of certain sectors. Again, the BPIF Printing Outlook survey shows that there are a significant number of companies that are experiencing positive employment growth.

Employment



Trends in the number of operating companies

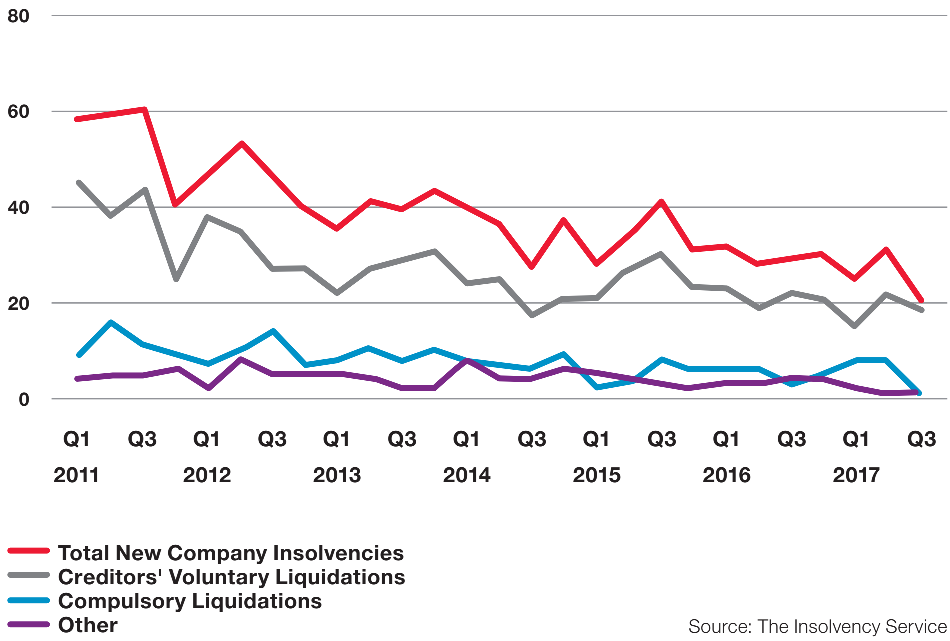
UK Printing Industry – number of companies 2001-2023



Source: BPIF Research; 2017 – 2023 forecast estimates

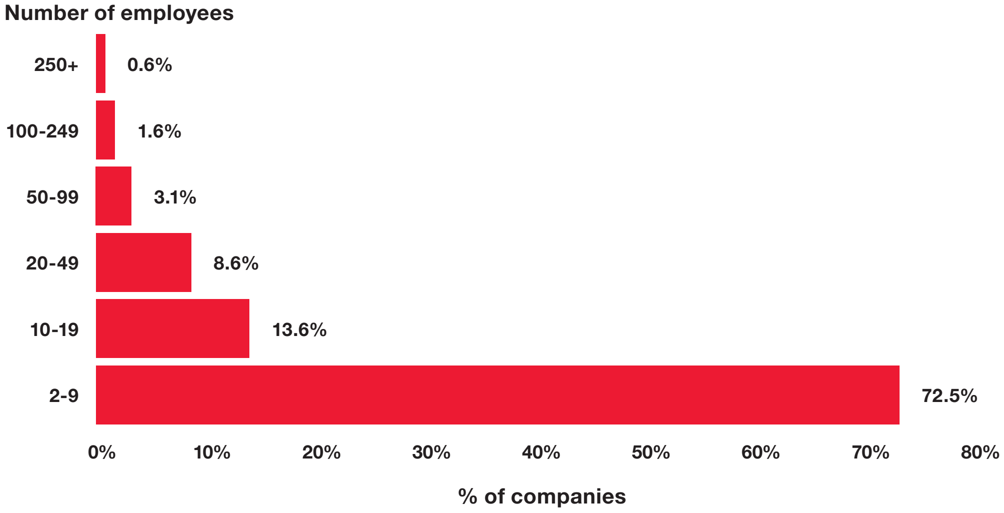
There were 21 new company insolvencies in the printing industry (SIC 181) in England, Wales and Scotland in the third quarter of 2017. This total is derived from 19 creditors' voluntary liquidations, one compulsory liquidation and one administration. The latest total figure is a decrease of 32% on Q2 and a decrease of 28% in comparison to Q3 2016.

Company insolvencis – printing (SIC 181)

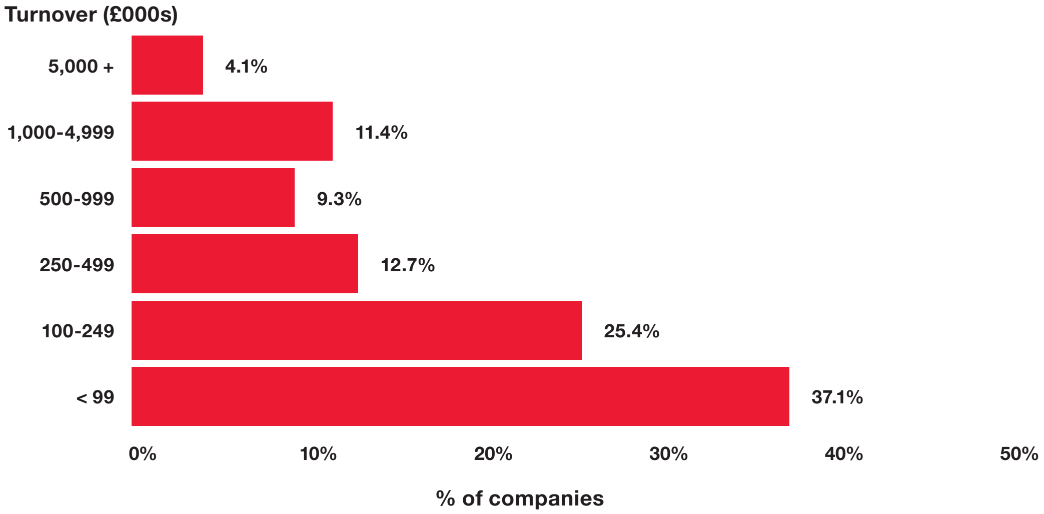


Source: The Insolvency Service

Companies by employment size, 2016



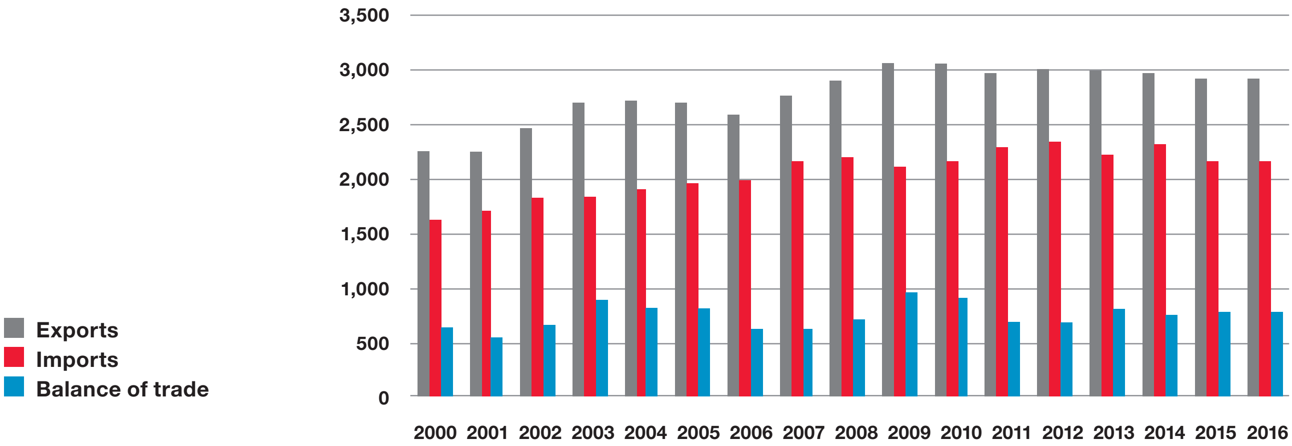
UK Printing Industry - companies by turnover size, 2016



Trends in foreign trade

It is expected that exports of UK printed products have received a boost following the exchange rate changes that occurred in the aftermath of the UK's Brexit vote.

Overseas trade in printed matter 2000-2016, in £m



Source: BPIF Research analysis of HM Revenue and Customs data

Exports

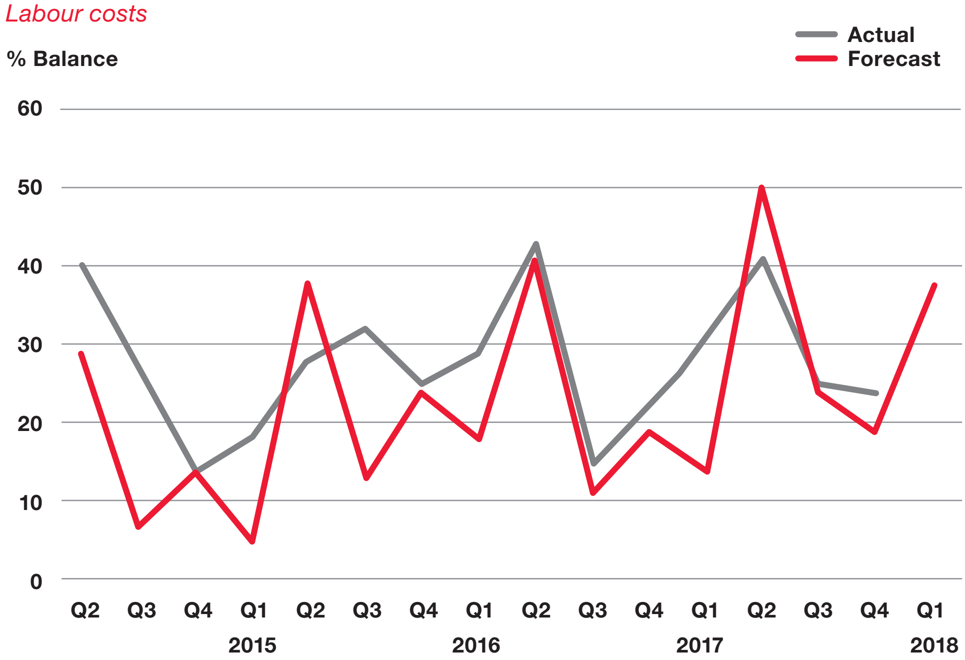
The country ranking by value of printed product imports to the UK in 2016 was: China, United States, Germany, Hong Kong, Netherlands, Italy, Ireland, Poland, France, India, Spain, Belgium, Turkey, Malaysia, Czech Republic, Canada…

China and the United States are some way ahead of the rest. In turn, Germany and Hong Kong are well ahead of those below.

Trends in printing processes
Digital printing, packaging gravure, flexography and large format are increasing in the UK while web-offset is decreasing.

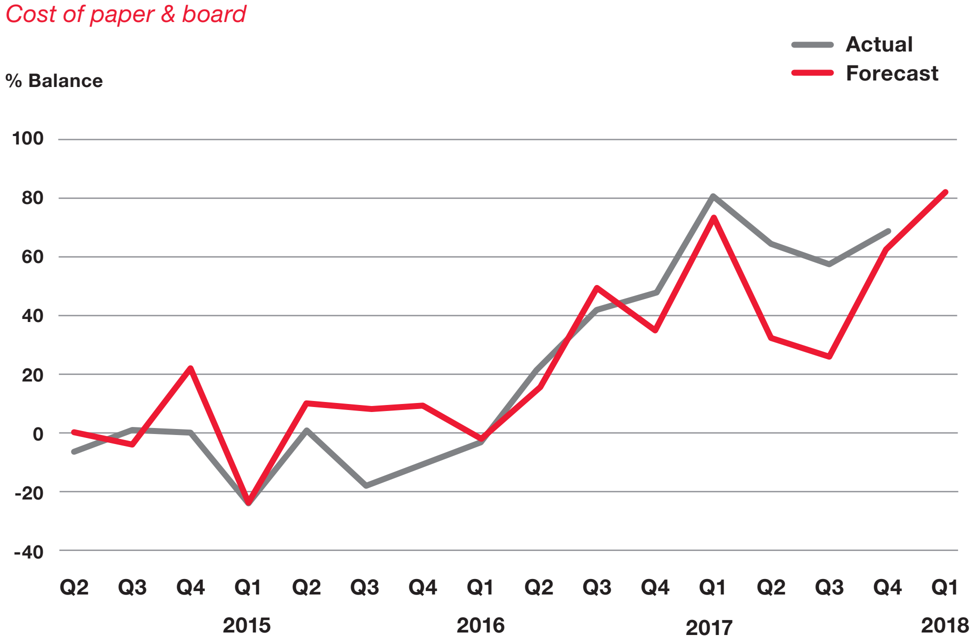
Trends in costs of the printing industry
Pressure on labour costs has continued to grow throughout 2017.

Labour costs

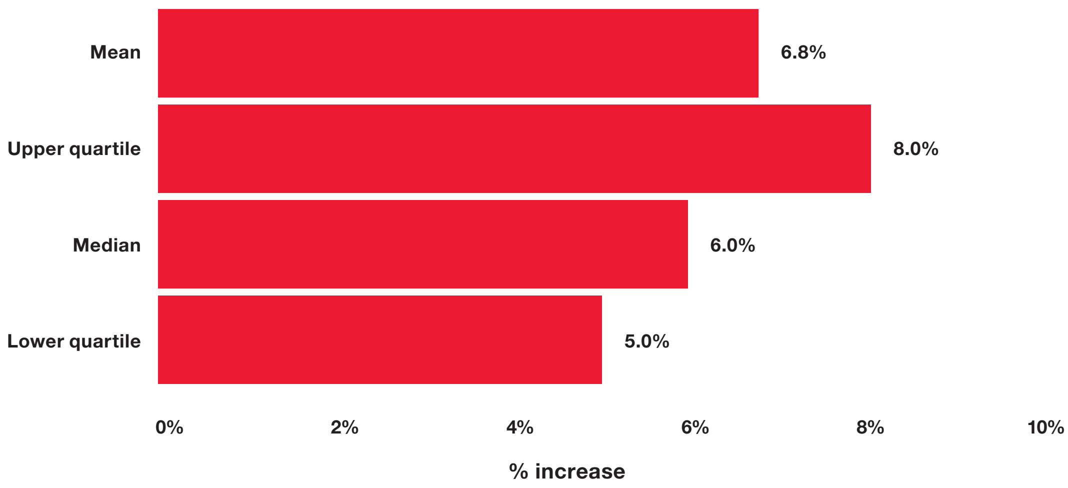


Paper prices, ink, energy, postal rates, transport and insurance costs have all increased in 2017.

Cost of paper & board

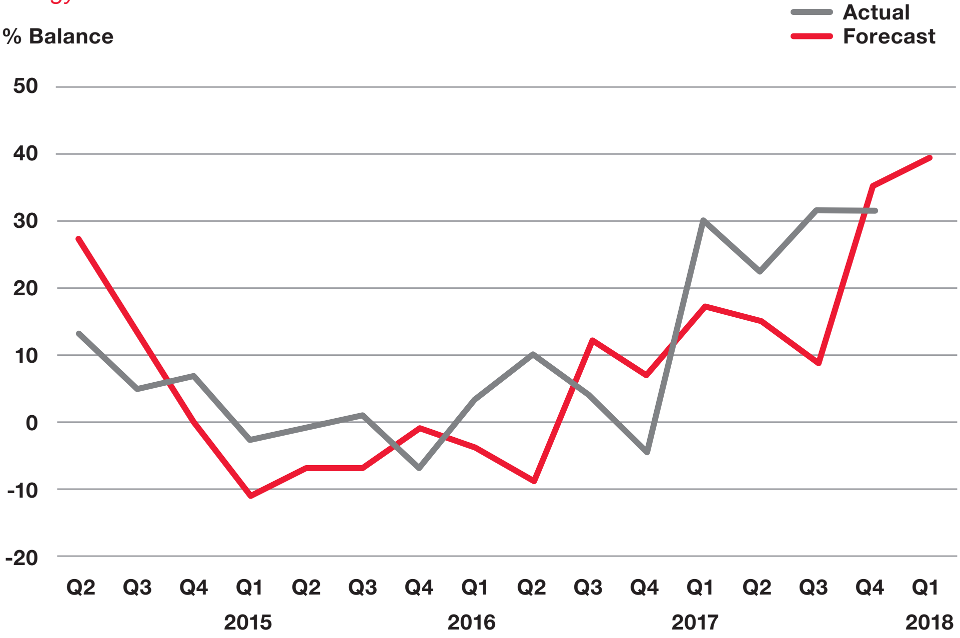


Paper and board price movements, Q4 2017



Cost of ink

Energy costs



Developments affecting the competitiveness

Current priorities include developing skills, encouraging capital investment, promoting research and development, prompt payment, limiting pre-pack arrangement, improving ability to trade, fairness for public sector procurement, promoting print, apprenticeship Levy, national Living Wage, pension reform and digital economy.

Regarding Brexit, priorities include certainty over plans, access to EU single market and customs union, stabilising exchange rates, freedom of movement for EU workers.

Brexit and the UK Printing Industry

The printing industry makes a positive contribution to the UK's trade balance. There is also a significant amount of trade in the supply chain. The major material input is of course paper and board – almost all of which is imported (80% from Europe). Furthermore, the investment market (technology, capital equipment, software etc.) is a worldwide market. As such, there are concerns over uncertainty, exchange rate fluctuations, supply chain security, potential cash flow pressure caused by VAT payments due on imports which may not be timely recovered and the impact on costs and profits. However, some companies may be in a position to exploit opportunities arising from changes in the economy, interest rates staying lower for longer or improved exporting competitiveness and import substitution.

6. ANNEXES

Annex to 2.1

Turnover, 2015, in million €

	18.1 Printing and service activities related to printing	18.11 Printing of newspaper	18.12 Other printing	18.13 Pre-press and pre-media services	18.14 Binding and related services
Austria	**1 863,7**	140,8	1 574,0	98,6	50,2
Belgium	**3 028,1**	182,9	2 360,3	417,6	67,3
Bulgaria	**330,7**	24,5	285,1	15,1	6,0
Croatia	**577,8**	:	515,6	39,7	:
Cyprus	**63,9**	:	57,1	1,4	0,8
Czech Republic	**1 220,6**	:	:	:	:
Denmark	**952,8**	61,5	804,0	87,3	:
Estonia	**218,1**	:	211,2	6,9	:
Finland	**1 119,0**	125,4	937,2	50,7	5,8
France	**8 390,7**	:	6 452,1	1 649,4	289,2
Germany	**17 528,9**	1 216,4	13 656,7	1 756,4	899,4
Greece	**616,7**	17,3	456,7	108,6	34,0
Hungary	**926,3**	12,8	776,5	119,5	17,5
Ireland	**652,9**	:	553,4	54,1	:
Italy	**10 007,1**	378,2	8 033,4	950,4	645,1
Latvia	**202,9**	0,2	192,2	6,0	4,6
Lithuania	**218,8**	2,0	201,1	13,3	2,4
Luxembourg	**105,6**	0,0	102,1	3,5	:
Malta	**159,4**	:	:	:	:
Netherlands	**3 472,5**	:	3 017,1	:	:
Poland	**3 124,4**	69,2	2 729,6	223,6	102,0
Portugal	**1 007,0**	21,1	780,2	186,4	19,3
Romania	**741,6**	66,6	630,2	27,6	17,2
Slovakia	**378,4**	16,5	307,7	41,0	13,3
Slovenia	**420,3**	:	344,7	70,2	5,4
Spain	**5 622,1**	253,1	4 445,8	665,8	257,5
Sweden	**2 473,2**	399,7	1 825,1	166,4	82,1
United Kingdom	**14 693,4**	39,3	13 351,0	1 030,4	272,7
EU-28	**80 116,9**	**3 027,5**	**64 600,1**	**7 789,9**	**2 791,8**
Norway	**313,4**	203,1	:	110,3	:
Switzerland	**4 043,0**	:	:	:	:

Annex to 2.1

Number of companies, 2015

	18.1	18.11	18.12	18.13	18.14
	Printing and service activities related to printing	Printing of newspaper	Other printing	Pre-press and pre-media services	Binding and related services
Austria	**842**	17	623	121	81
Belgium	**4 032**	69	1 667	2 185	111
Bulgaria	**1 013**	17	711	198	87
Croatia	**1 300**	19	857	334	90
Cyprus	**248**	:	221	17	10
Czech Republic	**7 528**	:	:	:	:
Denmark	**715**	5	505	156	49
Estonia	**383**	1	326	44	12
Finland	**863**	13	651	160	39
France	**17 920**	54	5 287	11 941	637
Germany	**10 065**	166	6 341	2 644	914
Greece	**2 756**	45	1 600	938	173
Hungary	**3 153**	18	1 389	1 548	198
Ireland	**1 007**	:	706	238	:
Italy	**14 869**	40	11 570	2 099	1 160
Latvia	**463**	6	326	82	49
Lithuania	**625**	4	236	47	338
Luxembourg	**83**	0	48	31	4
Malta	**135**	:	:	:	:
Netherlands	**3 492**	35	2 349	544	564
Poland	**8 423**	347	4 708	2 575	793
Portugal	**2 451**	21	1 426	840	164
Romania	**1 998**	59	1 500	209	230
Slovakia	**1 535**	10	867	536	122
Slovenia	**1 189**	9	562	551	67
Spain	**12 340**	67	9 424	2 421	428
Sweden	**2 821**	32	1 952	666	171
United Kingdom	**11 400**	25	9 508	1 556	311
EU-28	**113 649**	**1 079**	**65 360**	**32 681**	**6 802**
Norway	**968**	35	541	371	21
Switzerland	**2 416**	:	:	:	:

Annex to 2.1

Number of employees, 2015

	18,1 Printing and service activities related to printing	18,11 Printing of newspaper	18,12 Other printing	18,13 Pre-press and pre-media services	18,14 Binding and related services
Austria	**10 391**	611	8 703	599	478
Belgium	**12 254**	691	9 534	1 561	468
Bulgaria	**8 244**	246	7 269	496	233
Croatia	**7 402**	185	6 369	703	145
Cyprus	**969**	:	813	26	16
Czech Republic	**15 145**	:	:	:	:
Denmark	**6 142**	502	5 053	587	:
Estonia	**2 799**	:	2 724	75	:
Finland	**7 867**	564	6 764	472	67
France	**54 665**	1 785	39 381	10 257	3 242
Germany	**134 465**	6 199	98 530	18 485	11 251
Greece	**6 011**	322	4 161	1 055	473
Hungary	**14 928**	155	12 026	2 114	633
Ireland	**4 312**	:	3 995	317	:
Italy	**60 520**	1 985	46 668	5 793	6 074
Latvia	**3 382**	10	3 012	175	186
Lithuania	**4 239**	60	3 803	344	32
Luxembourg	**689**	0	658	31	:
Malta	**1260**	:	:	:	:
Netherlands	**19 041**	71	15 808	1 549	1 614
Poland	**38 390**	719	32 006	3 435	2 230
Portugal	**14 437**	324	10 608	3 082	423
Romania	**15 200**	1 337	12 219	754	890
Slovakia	**5 024**	267	3 874	485	398
Slovenia	**3 631**	9	2 852	696	74
Spain	**49 578**	1 448	37 847	6 705	3 578
Sweden	**12 935**	1 190	9 879	1 234	631
United Kingdom	**106 324**	:	:	:	:
EU-28	**620 244**	**18 680**	**384 556**	**61 030**	**33 136**
Norway	**5 360**	825	3 724	581	230
Switzerland	**18 279**	:	:	:	:

Annex to 2.1

Turnover 18.1, 1995-2015, in million €

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Austria	1 947.7	:	1 750.3	1 888.7	1 981.5	2 086.2	2 126.1	2 083.7	2 019.8	2 029.3
Belgium	3 078.0	3 187.8	3 066.0	3 157.6	3 336.1	3 378.5	3 864.6	3 864.6	3 678.8	3 585.7
Bulgaria	:	83.4	79.9	78.3	84.7	94.8	114.2	141.2	147.4	171.6
Croatia	:	:	:	:	:	:	:	:	:	:
Cyprus	:	:	:	:	:	85.7	89.3	84.9	82.1	87.6
Czech Republic	531.3	:	:	608.3	471.6	:	:	846.5	947.7	1 026.1
Denmark	1 653.2	1 802.0	1 714.0	1 818.9	1 928.1	1 936.2	1 802.4	1 722.1	1 616.0	1 517.7
Estonia	:	:	:	:	:	:	:	94.4	101.4	114.2
Finland	1 219.9	1 273.0	1 379.7	1 460.3	1 474.6	1 543.0	1 579.1	1 536.7	1 458.9	1 457.8
France	:	13 147.0	12 987.2	13 543.9	13 797.0	14 135.5	14 365.4	13 993.7	13 318.7	13 136.9
Germany	:	:	:	:	24 754.0	21 337.8	21 275.0	20 975.8	18 805.9	20 067.7
Greece	:	:	:	:	:	:	:	:	1 354.3	1 504.9
Hungary	:	:	:	385.9	448.2	591.1	823.6	890.3	931.6	991.5
Ireland	:	:	742.9	789.3	828.0	858.9	854.5	837.3	741.3	667.4
Italy	8 889.5	9 706.5	10 128.0	10 747.9	10 996.9	12 851.9	13 223.2	13 377.5	14 058.6	14 241.1
Latvia	:	:	39.0	66.8	80.2	80.1	96.1	97.2	99.9	124.5
Lithuania	:	:	:	:	:	62.9	78.7	94.5	99.1	106.1
Luxembourg	103.4	95.8	98.4	103.9	117.0	134.5	139.7	140.8	154.1	151.9
Malta	:	:	:	:	71.5	90.7	81.1	96.6	105.1	:
Netherlands	5 502.9	5 836.5	5 431.9	5 572.5	5 664.7	5 886.3	5 936.8	5 599.4	5 207.4	5 228.8
Poland	:	819.7	1 050.8	1 253.9	1 575.0	1 868.8	2 247.9	2 295.3	2 061.0	2 193.4
Portugal	:	:	:	:	1 247.8	1 299.0	1 391.5	1 237.7	1 269.3	1 395.4
Romania	:	:	:	:	:	314.7	303.5	330.9	385.4	473.8
Slovakia	135.0	:	148.5	154.1	126.6	174.5	225.3	220.1	202.7	202.8
Slovenia	251.6	246.4	257.3	280.9	274.2	305.1	330.4	406.0	376.6	388.3
Spain	4 947.7	5 400.6	5 538.5	6 249.0	6 248.3	7 826.6	7 681.3	8 239.7	8 116.9	8 545.3
Sweden	2 766.5	3 044.8	3 038.6	3 086.6	3 130.3	3 284.6	2 994.0	2 904.5	2 802.9	2 870.7
United Kingdom	:	15 050.2	20 020.2	20 290.6	21 389.1	23 639.1	23 118.3	22 505.5	18 398.7	19 843.2
EU-28	**31 026.7**	**59 693.7**	**67 471.2**	**71 537.4**	**100 025.4**	**103 866.5**	**104 742.0**	**104 616.9**	**98 541.6**	**102 123.7**
Norway	:	1 151.4	1 236.9	1 295.1	1 363.7	1 505.1	1 400.1	1 424.7	1 285.7	1 316.1
Switzerland	:	:	:	:	:	:	:	:	:	:

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
2 017.8	2 167.9	2 171.8	2 325.8	2 090.8	1 976.5	2 030.1	1 988.2	1873.9	1 852.5	1 863.7
3 640.2	3 888.0	3 963.5	3 636.0	3 636.0	3 475.4	3 382.9	4 054.1	3202.1	3 248.0	3 028.1
189.0	224.3	284.3	277.2	274.6	278.9	298.0	312.6	315.3	348.0	330.7
:	:	:	564.3	546.0	528.1	538.2	521.6	516.3	537.5	577.8
92.5	102.8	112.3	121.0	121.0	101.2	100.0	83.7	63.9	63.9	63.9
:	1 276.5	1 470.3	1 607.8	1 607.8	1 347.7	1 336.2	1 336.2	1227.0	1 220.6	1 220.6
1 518.5	1 521.2	1 547.2	1 535.5	1 535.5	962.7	931.8	1028.9	959.1	1 006.5	952.8
132.3	157.1	157.1	188.4	159.4	197.6	201.7	204.5	216.9	216.9	218.1
1 624.6	1 657.4	1 716.1	1 671.7	1 433.4	1 355.1	1 407.8	1 454.8	1343.3	1 206.2	1 119.0
13 082.8	13 019.5	12 736.8	12 447.2	10 694.9	10 554.0	10 220.0	9 491.1	8904.5	8 787.6	8 390.7
21 115.0	22 099.1	21 600.8	21 505.6	20 405.8	20 677.2	21 133.1	20 446.1	19151.3	18 260.8	17 528.9
1 464.4	1 579.7	1 629.5	888.0	862.3	862.3	862.3	595.6	509.3	493.8	616.7
989.5	970.6	1 077.9	1 086.8	850.3	889.8	893.0	881.3	871.7	890.3	926.3
878.2	711.3	686.7	971.0	742.1	827.5	758.4	891.8	711.7	640.7	652.9
13 426.3	14 848.3	14 512.1	14 133.5	11 422.3	11 766.5	11 617.4	10 824.8	10169.2	9 976.9	10 007.1
130.8	193.7	208.2	178.6	134.7	142.5	155.3	184.2	218.8	204.0	202.9
116.1	170.7	195.5	170.7	127.5	132.4	167.8	197.7	208.7	217.2	218.8
152.0	146.1	146.1	133.7	133.7	133.7	141.4	139.5	107.4	111.6	105.6
104.5	:	131.2	:	:	:	:	:	:	159.4	159.4
5 178.3	5 088.1	5 432.8	5 381.6	4 809.2	4 645.5	4 537.2	4 176.6	3935.3	3 748.4	3 472.5
2 514.8	2 812.2	3 453.2	2 803.8	2 080.0	2 455.3	2 556.0	2 515.9	2733.6	2 977.4	3 124.4
1 305.9	1 265.8	1 282.6	1 303.5	1 212.7	1 163.4	1 109.5	954.3	950.8	983.4	1 007.0
549.2	624.5	779.9	806.8	649.5	665.3	687.4	662.0	679.2	737.1	741.6
225.8	294.3	365.1	391.0	391.0	431.2	386.8	386.4	401.6	381.7	378.4
392.9	426.4	469.4	465.7	448.2	416.8	428.7	415.1	410.2	415.2	420.3
8 593.5	9 041.9	9 298.1	8 794.7	7 781.3	7 466.4	6 833.8	5 734.3	5525.2	5 559.5	5 622.1
2 804.9	2 891.3	2 918.7	2 858.1	2 363.7	2 682.9	2 706.2	2 701.5	2529.0	2 331.9	2 473.2
17 980.2	18 652.6	18 438.3	16 374.5	12 365.6	12 182.6	12 946.2	13 201.6	12008.9	13 014.9	14 693.4
100 220.0	**105 831.3**	**106 785.5**	**102 622.5**	**88 879.3**	**88 318.5**	**88 367.2**	**85 384.4**	**79744.2**	**79 592**	**80 117**
1 424.3	1 448.5	1 536.0	1 507.4	1 286.7	1 390.5	1 406.1	1 441.5	1294.4	1 128.2	313.4
:	:	:	:	3 340.5	3 516.5	3 649.2	3 725	3725.4	3 532.8	4 043.0

Annex to 2.1

Number of companies 18.1, 1995-2015, in million €

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Austria	1 065	1 141	1 110	1 129	1 016	1 045	1 010	1 088	1 095	1 070
Belgium	:	:	:	:	3 914	3 728	3 905	:	3 748	3 810
Bulgaria	:	549	588	594	643	628	672	786	818	815
Croatia	:	:	:	:	:	:	:	:	:	:
Cyprus	:	:	:	:	:	277	302	316	318	322
Czech Republic	2 535	2 113	2 901	3 944	2 995	4 112	3 708	5 675	6 104	6 192
Denmark	2 358	2 222	2 145	2 105	1 789	1 736	1 569	1 473	1 352	1 252
Estonia	:	:	:	:	:	140	153	168	168	195
Finland	1 487	1 470	1 438	1 480	1 415	1 368	1 311	1 276	1 237	1 208
France	:	17 903	17 731	17 537	17 289	17 114	16 962	16 766	17 986	17 852
Germany	:	:	:	:	13 828	13 584	14 680	12 934	12 574	11 294
Greece	:	:	:	:	:	:	:	:	4 431	4 426
Hungary	:	:	:	528	590	661	4 265	4 322	4 487	4 540
Ireland	:	333	343	343	343	353	357	380	391	357
Italy	19 317	19 354	19 277	19 930	20 168	20 386	20 323	20 262	19 603	19 355
Latvia	:	:	165	212	245	273	258	298	324	376
Lithuania	:	:	:	:	:	262	274	291	295	284
Luxembourg	87	84	89	90	86	86	78	77	82	84
Malta	:	:	:	:	200	194	198	201	167	171
Netherlands	4 130	4 180	4 325	4 770	4 450	4 140	3 885	3 915	3 665	3 635
Poland	:	7 742	9 357	11 290	11 601	11 001	10 333	11 416	10 426	11 626
Portugal	:	:	:	:	3 201	3 056	3 116	2 987	3 237	3 251
Romania	:	:	:	:	:	1 026	1 141	1 330	1 662	1 945
Slovakia	36	:	41	40	41	186	240	245	201	200
Slovenia	1 264	1 294	1 147	1 190	1 287	1 282	1 413	1 133	1 094	1 112
Spain	9 286	10 318	9 914	10 357	14 254	15 445	14 452	14 445	13 958	15 070
Sweden	3 545	3 478	4 093	4 066	3 994	3 951	3 835	3 683	3 728	3 673
United Kingdom	:	19 296	19 521	19 405	19 785	18 937	18 814	18 777	18 283	17 433
EU-28	**45 110**	**91 477**	**94 185**	**99 010**	**123 134**	**124 971**	**127 254**	**124 244**	**131 434**	**131 548**
Norway	:	1 158	1 253	1 208	1 054	1 100	990	961	867	1 734
Switzerland	:	:	:	:	:	:	:	:	:	:

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1 032	1 008	1 022	985	935	931	893	877	854	854	842
3 965	4 022	4 677	4 426	4 426	4 229	4 043	3 506	3480	4 158	4 032
857	914	988	957	1 135	1 123	1 104	1 036	1023	1 026	1 013
:	:	:	1 816	1 905	1 752	1 624	1 542	1490	1 399	1 300
286	287	288	292	292	257	256	259	248	250	248
6 822	8 330	9 483	9 483	8 994	8 785	7 006	7 840	7598	7 546	7 528
1 192	1 137	1 081	1 063	992	950	892	842	806	771	715
210	241	245	263	279	308	310	332	362	357	383
1 172	1 153	1 169	1 158	1 137	1 072	1 028	968	918	887	863
17 648	17 601	17 916	15 848	14 987	15 352	16 192	17 772	19065	21 320	17 920
12 228	11 967	12 224	11 982	12 206	13 014	12 243	11 330	11536	11 002	10 065
4 649	4 753	4 852	4 852	3 360	3 360	3 360	2 434	2336	2 217	2 756
4 340	4 182	4 082	3 984	3 695	3 573	3 506	3 360	3198	3 198	3 153
326	337	374	943	989	957	950	980	1 005	1 014	1 007
19 272	19 069	18 782	17 837	16 901	16 567	16 248	15 981	15851	15 206	14 869
389	433	456	444	422	425	402	441	475	471	463
386	395	375	370	349	360	418	496	537	605	625
88	91	99	97	103	102	95	90	94	90	83
162	:	152	:	:	:	:	:	:	135	135
3 425	3 400	3 720	3 592	3 620	3 766	3 652	3 697	3787	3 656	3 492
11 023	10 464	10 960	10 553	8 186	8 616	8 335	8 157	8629	8 254	8 423
4 699	4 276	4 013	3 299	3 183	2 962	2 833	2 654	2 519	2 467	2 451
2 073	2 128	2 227	2 313	2 165	1 964	1 786	1 845	1915	1 973	1 998
216	262	270	245	245	1 252	1 276	1 299	1302	1 410	1 535
1 120	1 169	1 183	1 218	1 219	1 231	1 198	1 194	1179	1 183	1 189
14 593	15 023	14 853	14 866	14 427	14 128	13 638	13 177	14041	13 649	12 340
3 704	3 573	3 406	3 321	3 178	3 122	3 099	3 006	2946	2 896	2 821
16 906	16 356	15 725	14 943	14 055	13 246	12 788	12 201	11973	11 608	11 400
132 783	**132 571**	**134 622**	**131 150**	**123 385**	**123 404**	**119 175**	**117 316**	**119 167**	**119 602**	**113 649**
1 606	1 524	1 362	1 382	1 311	1 220	1 211	1 162	1097	1 036	968
:	:	:	:	:	:	:	:	2571	2488	2416

Annex to 2.1

Number of employees 18.1, 1995-2015, in million €

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Austria	18 451	:	17 075	17 075	16 550	16 803	16 560	16 066	15 196	14 572
Belgium	24 170	23 372	21 750	21 780	21 315	21 161	22 619	:	20 067	19 585
Bulgaria	:	7 154	7 238	6 680	6 599	6 391	6 520	7 895	7 952	8 549
Croatia	:	:	:	:	:	:	:	:	:	:
Cyprus	:	:	:	:	:	1 382	:	:	1 573	1 491
Czech Republic	19 292	:	:	18 016	15 694	:	17 531	18 457	20 272	19 676
Denmark	16 963	16 740	:	16 562	16 247	16 643	15 023	14 025	12 590	10 728
Estonia	:	:	:	:	:	:	:	2 489	2 336	2 565
Finland	12 299	11 839	12 813	13 400	13 560	13 317	13 129	12 390	11 951	11 462
France	:	124 146	122 968	121 084	121 387	120 978	119 698	115 796	109 811	104 070
Germany	:	:	:	:	195 245	196 489	191 822	186 432	165 511	161 553
Greece	:	:	:	:	:	:	:	:	7 580	7 946
Hungary	:	:	:	14 107	14 727	16 076	21 213	23 683	25 437	21 936
Ireland	:	:	8 981	8 780	9 159	8 672	8 523	7 936	7 456	6 450
Italy	95 959	93 457	91 048	92 435	91 766	99 099	98 981	93 673	94 903	92 428
Latvia	:	:	3 012	3 289	4 427	3 609	3 917	4 193	3 716	4 639
Lithuania	:	:	:	:	:	3 145	3 363	3 515	3 628	3 840
Luxembourg	987	971	1 008	1 054	1 065	1 141	1 143	1 140	1 285	1 519
Malta	:	:	:	:	1 119	1 284	1 061	1 111	1 245	:
Netherlands	49 885	45 664	44 427	44 805	45 160	45 836	43 561	39 383	36 532	36 198
Poland	:	30 073	32 198	33 792	39 093	38 653	38 233	34 684	39 549	41 816
Portugal	:	:	:	:	26 321	24 588	25 259	22 857	24 762	24 425
Romania	:	:	:	:	:	14 091	14 346	15 238	16 749	19 012
Slovakia	6 053	:	5 594	5 380	4 901	5 592	6 118	5 046	3 863	4 476
Slovenia	5 829	5 787	5 777	5 721	5 735	5 731	5 778	6 058	5 686	5 567
Spain	69 721	74 102	72 623	75 278	72 097	87 209	82 852	84 949	82 864	84 311
Sweden	23 833	23 226	25 847	25 897	25 039	24 314	23 839	22 606	20 492	19 986
United Kingdom	:	193 693	175 075	198 184	193 632	186 205	179 224	171 728	170 058	156 611
EU-28	**343 442**	**650 224**	**647 434**	**723 319**	**940 838**	**958 409**	**960 313**	**911 350**	**913 064**	**885 411**
Norway	:	9 982	10 491	11 090	10 330	10 456	9 490	8 820	8 355	8 318
Switzerland	:	:	:	:	:	:	:	:	:	:

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
14 270	14 119	14 305	14 264	13 176	12 136	11 833	11 278	10 679	10 625	10 391
19 284	18 954	18 073	16 526	16 526	14 170	13 258	15 043	13 180	13 088	12 254
8 697	9 565	9 815	9 244	9 585	9 081	8 796	8 408	8 340	8 570	8 244
:	:	:	9 077	8 692	7 835	7 794	7 613	7 439	7 515	7 402
1 498	1 497	1 434	1 462	1 462	1 210	1 182	1106	969	969	969
18 957	19 717	21 458	21 458	18 083	15 050	14 830	14 830	15 145	15 145	15 145
10 096	10 207	10 007	9 594	9 594	6 411	6 411	6 578	6 117	6 403	6 142
2 761	2 906	2 906	2 920	2 554	2 695	2 728	2 565	2 593	2 593	2 799
11 490	11 175	11 586	11 965	11 185	10 238	9 810	9 699	9 185	8 487	7 867
100 330	96 714	92 307	79 618	74 253	71 400	68 485	62 719	59 101	57 095	54 665
160 339	155 260	159 118	160 643	154 068	158 904	156 358	145 550	144 151	138 748	134 465
8 045	8 109	8 534	8 534	9 448	9 448	9 448	8 180	7 409	6 702	6 011
19 727	18 195	19 560	17 152	15 211	14 467	14 282	13 650	13 263	13 302	14 928
6 664	5 988	5 745	6 729	5 390	5 002	4 887	4 650	4 511	4 593	4 312
91 196	90 240	89 887	84 259	82 299	75 673	70 779	68 462	65 091	62 519	60 520
4 339	4 713	4 974	4 406	3 061	2 766	2 703	3 040	3 211	3 439	3 382
3 828	4 733	4 939	4 255	3 787	3 430	3 577	3 831	4 009	4 162	4 239
1 180	1 166	1 166	926	926	926	887	874	709	699	689
1 192	:	1 260	:	:	:	:	:	:	1260	1260
34 577	34 947	34 889	34 474	31 927	28 213	26 064	24 386	22 939	20 744	19 041
42 213	42 695	45 789	34 652	32 220	32 985	34 231	32 461	34 280	35 300	38 390
24 831	23 143	22 210	20 371	18 914	17 802	16 393	14 869	14 251	14 135	14 437
19 949	19 780	20 583	20 200	18 502	16 851	16 990	16 134	15 884	15 378	15 200
4 345	4 683	5 573	6 225	6 225	6 341	5 348	5 373	5 322	5 797	5 024
5 555	5 477	5 441	4 981	4 921	4 516	4 252	4 048	3 759	3 647	3 631
85 069	83 903	81 367	78 252	69 512	65 796	61 010	55 478	49 091	48 670	49 578
19 772	18 422	18 468	18 321	16 822	16 204	15 282	14 588	13 609	12 933	12 935
149 384	147 364	142 702	137 378	106 255	104 562	97 797	97 797	97 797	106 324	106 324
869 588	**853 672**	**854 096**	**817 886**	**744 598**	**714 112**	**685 414**	**653 209**	**632 034**	**628 842**	**620 244**
7 927	7 905	7 634	7 514	7 099	6 733	6 317	6 102	5 826	5 229	5 360
:	:	:	:	:	:	:	:	20 076	19 213	18 279

Annex to 2.2

Printing and recorded media, labour cost per employee, full-time equivalent

Printing	2008	2009	2010	2011	2012	2013	2014	2015
Austria	52.0	50.7	53.8	54.1	56.4	58.2	58.8	61.7
Belgium	51.6	53.6	55.8	56.3	59.4	60.6	60.4	60.3
Bulgaria	4.2	4.3	4.2	4.6	4.8	5.2	5.5	5.9
Croatia	14.9	14.5	15.3	14.8	15.0	14.8	14.4	14.9
Cyprus	22.1	23.2	22.9	23.4	22.0	19.7	20.0	18.5
Czech Republic	14.2	14.1	14.8	15.3	15.1	14.8	14.2	14.8
Denmark	58.0	57.2	59.6	58.5	60.6	60.3	60.8	61.9
Estonia	14.2	13.2	13.1	13.6	14.9	15.4	16.0	16.3
Finland	43.4	43.0	44.5	46.4	47.0	47.2	48.7	48.8
France	:	49.6	51.3	52.6	51.9	52.3	53.0	55.0
Germany	40.9	41.0	40.3	39.9	41.6	41.8	41.3	43.2
Greece	23.8	34.7	29.0	28.1	25.6	22.8	22.6	21.6
Hungary	11.0	9.7	9.9	10.1	10.5	10.6	10.7	10.6
Ireland	49.4	62.3	41.4	46.1	45.6	45.0	42.0	49.4
Italy	40.0	40.6	41.2	41.6	42.2	42.4	44.5	44.7
Latvia	8.8	7.9	9.0	10.1	10.5	11.6	11.2	12.4
Lithuania	9.4	8.7	7.9	8.8	9.6	10.5	10.8	11.6
Luxemburg	:	:	:	:	50.8	48.1	48.7	50.1
Malta	:	:	:	:	23.6	22.4	22.5	22.0
Netherlands	45.0	47.2	49.5	53.5	52.8	53.5	55.5	55.6
Poland	:	:	:	12.2	12.6	13.0	14.0	13.8
Portugal	17.4	17.7	18.1	18.3	17.7	17.9	17.9	18.0
Romania	6.4	5.7	5.7	5.8	6.4	:	:	:
Slovakia	15.9	17.7	12.8	12.8	13.5	13.5	12.4	13.2
Slovenia	:	:	:	:	:	:	:	:
Spain	32.4	32.3	33.5	33.2	33.8	33.2	33.1	31.7
Sweden	49.5	45.3	51.4	54.9	59.2	61.1	59.0	58.4
United Kingdom	34.8	37.5	28.8	28.7	32.6	33.8	32.9	35.0
EU	**28.7**	**30.5**	**29.7**	**29.7**	**31.0**	**31.9**	**32.0**	**32.7**
Norway	57.1	57.2	66.1	66.8	74.4	74.0	67.2	:
Switzerland	:	57.5	64.0	72.5	70.8	69.7	:	:

Annex to 2.2

Manufacturing industry, labour cost per employee, full-time equivalent

Manufacturing	2008	2009	2010	2011	2012	2013	2014	2015
Austria	49.3	49.9	51.6	53.3	55.5	57.1	58.4	59.7
Belgium	59.7	64.2	65.3	66.2	69.4	71.9	73.5	73.1
Bulgaria	3.7	3.9	4.1	4.4	4.7	5.0	5.3	5.8
Croatia	15.4	14.5	14.6	14.1	14.3	13.7	14.1	14.5
Cyprus	21.7	22.3	22.5	22.5	21.7	20.6	20.2	19.8
Czech Republic	14.6	14.2	15.3	16.3	16.4	16.1	15.7	16.3
Denmark	56.3	62.2	64.5	65.1	66.7	68.1	69.7	71.8
Estonia	12.1	11.8	12.2	13.1	13.8	14.8	15.7	16.4
Finland	50.4	49.7	51.1	53.3	55.3	55.2	56.5	58.3
France	:	52.8	54.2	55.6	56.5	57.6	58.2	59.1
Germany	49.9	49.6	50.3	51.4	53.3	54.5	56.2	58.3
Greece	27.0	28.4	28.7	28.6	26.2	24.8	24.0	23.8
Hungary	13.1	12.2	12.8	13.5	13.6	13.7	13.9	14.2
Ireland	50.7	52.8	50.8	50.9	52.5	52.3	54.7	54.9
Italy	42.9	43.4	45.2	46.5	47.0	48.1	50.9	51.4
Latvia	8.5	8.0	8.9	9.7	10.6	10.8	9.9	10.8
Lithuania	9.5	8.8	8.6	8.9	9.2	9.8	10.3	11.0
Luxemburg	:	:	:	:	55.9	56.7	57.8	58.8
Malta	:	:	:	:	:	:	:	:
Netherlands	52.9	53.9	56.1	59.1	60.2	61.0	63.7	64.0
Poland	:	:	:	11.7	12.2	12.5	13.1	13.5
Portugal	15.9	16.2	16.8	17.0	17.1	17.2	17.4	17.6
Romania	5.7	5.5	5.8	6.2	6.3	6.7	7.2	7.6
Slovakia	13.1	14.2	13.4	13.9	14.9	15.5	15.9	16.3
Slovenia	:	:	:	:	:	:	:	:
Spain	35.7	36.7	37.4	38.3	39.1	39.4	39.3	38.9
Sweden	56.3	51.1	58.9	64.4	68.0	69.9	68.0	67.4
United Kingdom	39.0	35.8	36.9	36.8	40.5	39.9	42.7	47.8
EU	**30.6**	**31.8**	**32.8**	**32.8**	**34.7**	**35.1**	**35.9**	**36.6**
Norway	61.0	61.6	69.1	70.8	78.1	77.3	75.4	74.9
Switzerland	:	64.2	70.6	80.8	82.3	79.8	81.6	94.2

Annex to 2.3

Detailed production value of printed products, 2016, in €

	Notebooks, letter pads, memorandum pads, of paper or paperboard	Diaries, of paper or paperboard	Engagement books, address books, telephone number books and copy books, of paper or paperboard (excluding diaries)	Exercise books, of paper or paperboard	Blotting pads and book covers, of paper or paperboard	Self-adhesive printed labels of paper or paperboard	Printed labels of paper or paperboard (excluding self-adhesive)	Printed newspapers, journals and periodicals, appearing at least four times a week	Printed new stamps, stamp-impressed paper, cheque forms, banknotes, etc	Printed commercial catalogues	Printed trade advertising material (excluding commercial catalogues)	Printed newspapers, journals and periodicals, appearing less than four times a week
Austria	18 051 900	0	0	:	:	119 919 600	36 960 400	112 887 800	59 012 300	61 032 000	471 442 000	223 878 900
Belgium	:	4 444 770	:	:	:	159 562 809	:	95 379 439	2 116 046	87 359 921	475 922 131	179 074 199
Bulgaria	296 354	587 483	1 112 077	3 160 783	2 133 935	8 511 550	8 226 056	22 416 914	7 881 685	6 487 621	34 113 708	6 627 467
Croatia	4 035 523	25 367	0	3 849 585	0	18 854 400	14 477 016	20 552 547	576 010	27 733 481	41 446 690	23 999 178
Cyprus	0	0	0	0	0	0	0	0	0	0	0	0
Czech Republic	3 203 669	:	1 259 007	:	0	75 690 316	31 505 734	39 943 035	35 854 258	45 910 631	226 539 173	82 234 224
Denmark	583 866	0	0	0	0	150 606 565	3 184 602	0	0	0	0	0
Estonia	1 211 253	904 145	3 500	12 458 389	20 756	15 441 744	3 632 233	7 222 400	481 756	922 462	24 149 827	52 978 066
Finland	199 387	18 100	874 384	183 130	865 042	23 252 824	12 906 979	123 454 160	2 188 140	5 119 032	197 103 835	144 700 118
France	:	65 782 280	4 547 509	88 305 024	12 340 947	744 237 984	127 921 262	160 184 269	446 028 195	320 401 277	1 585 234 137	391 409 136
Germany	95 410 527	:	19 539 056	27 445 251	118 983 504	937 797 315	278 402 909	892 500 793	:	1 175 856 267	4 024 344 596	1 489 764 722
Greece	809 924	:	:	7 738 094	0	28 786 879	3 176 186	28 688 490	25 560 253	1 483 871	29 746 976	67 445 143
Hungary	1 666 260	42 991	:	2 675 177	187 339	28 438 553	13 526 272	15 659 719	92 145 595	12 663 203	93 444 628	57 642 878
Ireland	1 876 000	1 016 000	0	:	:	93 403 000	:	:	22 853 000	40 475 000	37 255 000	11 052 000
Italy	6 058 000	121 722 000	193 339 000	61 116 000	:	654 323 000	75 131 000	380 776 000	50 857 000	1 093 028 000	813 733 000	370 240 000
Latvia	549 808	:	0	211 927	0	14 326 959	1 862 148	:	:	1 943 660	12 798 280	:
Lituania	43 453	0	0	2 044 970	0	53 749 302	7 458 045	3 029 739	5 201 873	3 562 790	22 241 503	24 456 737
Luxemburg	0	0	0	0	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	6 113 000	:	:	:	609 000	264 077 000	57 614 000	:	:	54 714 000	673 990 000	143 845 000
Poland	7 697 791	:	3 083 150	50 689 127	:	118 659 401	37 688 508	147 208 952	:	10 930 693	107 867 139	240 486 432
Portugal	86 215	420 953	:	:	25 260	13 198 587	27 944 233	:	12 622 628	29 746 063	107 141 876	22 631 986
Romania	534 919	7 867 702	:	9 415 393	:	15 812 313	8 331 870	9 693 494	18 264 372	28 696 588	32 304 375	64 051 383
Slovakia	:	468 631	0	:	0	12 985 468	12 920 635	:	:	410 536	9 065 032	62 117 016
Slovenia	:	:	0	:	:	11 262 965	9 925 501	2 518 884	:	7 255 313	78 456 199	6 387 268
Spain	27 276 963	15 684 555	1 842 049	39 605 663	9 625 512	462 856 998	121 828 620	164 490 368	158 788 055	308 957 690	401 598 130	166 343 274
Sweden	:	0	0	0	:	:	8 537 739	203 270 602	:	:	128 618 953	:
United Kingdom	44 045 004	19 553 863	:	24 836 482	:	901 980 524	46 930 981	117 922 341	512 434 715	273 497 828	1 712 531 117	572 033 485
EU28	**302 000 000**	**280 000 000**	**250 226 109**	**358 353 628**	**158 343 927**	**5 053 610 763**	**963 000 000**	**2 612 793 143**	**2 701 025 842**	**3 598 800 000**	**11 341 088 305**	**4 524 000 000**
Norway	0	0	0	:	:	15 926 851	0	121 928 508	0	20 845 586	84 018 578	36 591 071

Printed books, brochures, leaflets and similar printed matter, in single sheets	Printed books, brochures, leaflets and similar printed matter (excluding in single sheets)	Printed children's picture, drawing or colouring books	Printed dictionaries and encyclopaedias, and serial instalments thereof	Printed maps, hydrographic or similar charts, in book-form	Printed maps, hydrographic or similar charts (excluding in book-form)	Printed postcards, whether or not illustrated	Printed cards bearing personal greetings, messages or announcements, whether or not illustrated, with or without envelopes or trimmings	Printed pictures, designs and photographs	Printed calendars of any kind, including calendar blocks	Printed music (including braille music)	Printed transfers (decalcomanias)	Other printed matter	TOTAL
11 982 800	66 236 900	0	0	0	552 400	6 048 500	1 083 400	604 400	12 654 600	221 800	21 674 000	371 229 700	1 595 473 400
40 572 041	90 759 440	:	0	0	:	:	:	:	3 723 845	0	0	515 655 256	1 654 569 897
35 345 756	7 594 846	577 257	0	:	163 616	388 076	74 138	:	5 428 392	:	:	139 862 251	290 989 965
1 895 242	26 198 561	356 204	45 422	20 586	26 563	112 227	54 055	4 516	1 739 718	1 010 840	0	160 274 354	347 288 085
0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 744 322	161 932 455	687 985	:	:	648 480	287 823	624 251	12 599 763	13 124 325	:	1 430 421	105 380 410	868 600 282
0	0	0	0	0	0	0	0	0	0	0	0	0	154 375 033
25 344 821	1 089 997	0	0	0	0	122 685	0	1 135 476	1 213 323	0	0	2 156 311	150 489 144
35 150 698	68 322 074	1 443 789	0	488 922	167 023	533 406	12 564 857	3 271 934	2 671 744	0	0	144 645 579	780 125 157
27 091 810	265 700 926	0	:	:	:	3 469 346	:	:	28 963 588	661 654	39 727 972	1 882 952 518	6 194 959 834
414 391 555	533 312 493	:	3 215 374	:	1 749 222	11 410 371	43 086 622	126 775 686	93 713 507	:	92 698 757	2 093 395 283	12 473 793 810
19 742 310	13 026 166	3 244 526	0	:	:	:	2 956 126	3 201 840	3 076 034	0	:	73 442 350	312 125 168
42 457 276	80 760 888	1 305 170	:	:	144 172	588	14 552	270 283	2 297 229	126 188	103 641	115 025 966	560 598 568
49 457 000	11 783 000	:	0	0	0	417 000	1 672 000	10 854 000	889 000	0	:	196 886 000	479 888 000
216 456 000	665 757 000	10 549 000	6 886 000	8 908 000	75 248 000	6 623 000	28 695 000	56 924 000	47 763 000	0	70 965 000	2 685 149 000	7 700 246 000
:	37 447 414	:	:	0	:	:	:	0	1 261 575	0	:	35 981 918	106 383 689
4 497 104	50 710 166	426 407	0	0	0	9 561	979 413	0	1 212 433	0	0	53 488 101	233 111 597
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
90 007 000	179 756 000	4 000	0	:	0	3 570 000	42 526 000	58 404 000	40 145 000	0	:	342 236 000	1 957 610 000
397 068 367	147 437 935	:	:	:	144 046	:	5 943 528	:	15 074 716	0	2 055 395	267 849 972	1 559 885 152
43 151 040	75 507 360	:	584 552	:	:	565 904	164 722	19 663 862	870 255	0	0	269 285 832	623 611 328
25 680 141	22 071 284	1 652 622	:	:	5 057	131 417	5 665	:	2 428 815	0	299 107	321 576 208	568 822 725
1 461 799	60 837 127	:	0	0	0	231 090	:	:	1 417 459	0	0	105 444 996	267 359 789
21 881 863	28 615 211	0	0	0	0	214 567	:	:	2 266 684	0	0	36 377 777	205 162 232
234 413 157	333 446 117	7 410 814	1 464 094	435 112	1 732 856	11 832 485	7 138 629	29 162 084	29 026 855	:	2 088 144	210 587 198	2 747 635 422
130 761 546	:	0	:	0	0	:	449 999	73 681 103	:	0	:	192 661 133	737 981 075
466 318 885	1 759 988 041	:	:	323 376	16 218 822	8 488 310	81 168 546	58 782 399	24 337 385	9 220 481	32 058 134	1 294 528 237	7 977 198 956
2 440 000 000	**5 269 826 638**	**71 215 430**	**40 000 000**	**12 000 000**	**97 842 083**	**82 178 585**	**300 671 725**	**473 563 081**	**339 000 000**	**12 039 712**	**277 283 118**	**11 616 072 351**	**53 174 934 440**
6 257 723	41 053 646	373 496	:	:	:	108 174	1 114 675	4 274 643	2 218 264	0	:	133 646 804	468 358 019

Annex to 2.4

Trade of printed products, 2017, in €

	Export			Import			
	EU28 Extra	**EU28 Intra**	**Total export**	**EU28 Extra**	**EU28 Intra**	**Total export**	**Trade balance**
Austria	94 392 345	328 359 427	422 751 772	45 782 350	874 447 676	920 230 026	-497 478 254
Belgium	110 314 649	804 620 405	914 935 054	84 741 843	645 161 570	729 903 413	185 031 641
Bulgaria	4 108 233	29 554 295	33 662 528	10 269 356	23 694 254	33 963 610	-301 082
Croatia	14 257 792	34 962 615	49 220 407	8 824 590	37 208 250	46 032 840	3 187 567
Cyprus	194 389	278 871	473 260	1 273 830	18 429 948	19 703 778	-19 230 518
Czech Republic	101 916 087	913 089 345	1 015 005 432	24 502 791	595 165 245	619 668 036	395 337 396
Denmark	116 009 368	141 179 315	257 188 683	24 667 833	271 888 720	296 556 553	-39 367 870
Estonia	18 463 531	77 885 569	96 349 100	5 818 809	13 231 308	19 050 117	77 298 983
Finland	50 319 935	71 911 770	122 231 705	22 347 541	101 849 837	124 197 378	-1 965 673
France	612 140 817	780 397 230	1 392 538 047	254 366 467	1 550 579 951	1 804 946 418	-412 408 371
Germany	1 225 689 594	2 988 317 034	4 214 006 628	386 865 295	2 235 307 237	2 622 172 532	1 591 834 096
Greece	31 916 806	38 288 346	70 205 152	35 049 748	74 472 857	109 522 605	-39 317 453
Hungary	19 405 780	140 398 546	159 804 326	18 628 607	99 792 321	118 420 928	41 383 398
Ireland	28 089 115	76 070 588	104 159 703	26 545 218	228 366 130	254 911 348	-150 751 645
Italy	280 409 650	772 039 028	1 052 448 678	119 999 830	458 434 485	578 434 315	474 014 363
Latvia	35 815 959	84 634 733	120 450 692	4 892 334	20 588 337	25 480 671	94 970 021
Lithuania	36 998 864	64 743 323	101 742 187	9 419 487	20 906 544	30 326 031	71 416 156
Luxembourg	1 226 820	18 464 174	19 690 994	1 638 711	73 069 163	74 707 874	-55 016 880
Malta	46 810 025	19 760 994	66 571 019	2 277 100	12 402 004	14 679 104	51 891 915
Netherlands	229 335 994	1 242 543 038	1 471 879 032	247 101 385	755 398 208	1 002 499 593	469 379 439
Poland	129 701 283	1 440 144 387	1 569 845 670	39 479 849	545 544 462	585 024 311	984 821 359
Portugal	25 350 710	33 019 091	58 369 801	12 746 124	126 380 889	139 127 013	-80 757 212
Romania	16 414 090	73 188 659	89 602 749	20 944 863	76 886 590	97 831 453	-8 228 704
Slovakia	7 158 236	167 874 034	175 032 270	6 915 727	129 016 973	135 932 700	39 099 570
Slovenia	20 152 000	134 827 529	154 979 529	29 035 783	41 393 186	70 428 969	84 550 560
Spain	323 331 478	489 923 740	813 255 218	143 292 314	394 016 672	537 308 986	275 946 232
Sweden	217 884 223	91 053 942	308 938 165	102 050 647	350 148 466	452 199 113	-143 260 948
United Kingdom	1 764 104 360	1 516 074 119	3 280 178 479	1 293 215 455	801 562 366	2 094 777 821	1 185 400 658
EU	**5 561 912 133**	**12 573 604 147**	**18 135 516 280**	**2 982 693 887**	**10 575 343 649**	**13 558 037 536**	**4 577 478 744**

Annex to 2.4

Trade of books, 2017, in €

	Export			Import			
	EU28 Extra	EU28 Intra	Total export	EU28 Extra	EU28 Intra	Total export	Trade balance
Austria	8 802 401	58 618 529	67 420 930	5 735 625	401 496 258	407 231 883	-339 810 953
Belgium	35 678 919	183 554 409	219 233 328	29 621 468	319 183 142	348 804 610	-129 571 282
Bulgaria	1 428 443	15 240 549	16 668 992	1 540 485	6 001 863	7 542 348	9 126 644
Croatia	2 637 667	10 560 153	13 197 820	2 222 756	7 697 956	9 920 712	3 277 108
Cyprus	43 629	236 387	280 016	560 220	12 572 296	13 132 516	-12 852 500
Czech Republic	7 478 665	353 421 427	360 900 092	10 001 355	199 409 541	209 410 896	151 489 196
Denmark	33 490 756	36 825 677	70 316 433	12 052 023	105 517 968	117 569 991	-47 253 558
Estonia	2 270 163	22 205 827	24 475 990	3 125 827	3 789 968	6 915 795	17 560 195
Finland	6 802 756	6 391 541	13 194 297	5 529 462	37 318 949	42 848 411	-29 654 114
France	303 778 853	302 574 404	606 353 257	117 893 735	509 268 594	627 162 329	-20 809 072
Germany	394 973 656	1 011 840 217	1 406 813 873	159 533 888	995 961 980	1 155 495 868	251 318 005
Greece	23 631 342	16 622 854	40 254 196	17 739 075	26 743 602	44 482 677	-4 228 481
Hungary	11 875 439	53 856 984	65 732 423	6 509 970	16 832 685	23 342 655	42 389 768
Ireland	5 971 668	26 396 558	32 368 226	11 415 863	96 409 214	107 825 077	-75 456 851
Italy	104 743 297	276 246 640	380 989 937	47 234 126	185 983 223	233 217 349	147 772 588
Latvia	29 882 171	60 681 900	90 564 071	2 412 808	4 569 070	6 981 878	83 582 193
Lithuania	14 248 570	36 707 953	50 956 523	1 910 216	5 318 998	7 229 214	43 727 309
Luxembourg	786 656	6 039 552	6 826 208	1 053 618	33 964 092	35 017 710	-28 191 502
Malta	152 482	5 257 196	5 409 678	505 415	7 046 492	7 551 907	-2 142 229
Netherlands	39 382 910	344 327 478	383 710 388	79 211 070	306 958 276	386 169 346	-2 458 958
Poland	29 381 567	751 915 376	781 296 943	8 441 862	392 745 562	401 187 424	380 109 519
Portugal	19 308 379	8 318 028	27 626 407	4 561 903	39 183 638	43 745 541	-16 119 134
Romania	6 744 264	17 747 165	24 491 429	9 020 974	20 975 185	29 996 159	-5 504 730
Slovakia	3 416 750	91 472 807	94 889 557	2 233 056	49 623 421	51 856 477	43 033 080
Slovenia	5 766 288	62 815 490	68 581 778	21 796 062	12 386 225	34 182 287	34 399 491
Spain	245 049 015	279 939 339	524 988 354	93 692 707	168 054 076	261 746 783	263 241 571
Sweden	51 512 934	26 275 188	77 788 122	37 463 928	104 553 966	142 017 894	-64 229 772
United Kingdom	1 298 246 761	875 563 981	2 173 810 742	867 440 793	298 311 140	1 165 751 933	1 008 058 809
EU	**2 687 486 401**	**4 941 653 609**	**7 629 140 010**	**1 560 460 290**	**4 367 877 380**	**5 928 337 670**	**1 700 802 340**

Annex to 2.4

Trade of newspapers and magazines, 2017, in€

	Export			Import			
	EU28 Extra	**EU28 Intra**	**Total export**	**EU28 Extra**	**EU28 Intra**	**Total export**	**Trade balance**
Austria	2 984 158	20 331 170	23 315 328	2 734 881	156 240 767	158 975 648	-135 660 320
Belgium	873 386	150 386 827	151 260 213	355 740	103 797 714	104 153 454	47 106 759
Bulgaria	51 533	1 644 818	1 696 351	29 496	892 749	922 245	774 106
Croatia	4 107 403	11 533 168	15 640 571	761 870	8 839 070	9 600 940	6 039 631
Cyprus	:	:	0	4 450	2 400 671	2 405 121	-2 405 121
Czech Republic	1 652 858	50 915 190	52 568 048	72 262	32 337 659	32 409 921	20 158 127
Denmark	16 925 675	22 972 339	39 898 014	1 280 680	12 613 497	13 894 177	26 003 837
Estonia	11 986 342	24 985 639	36 971 981	979 996	982 198	1 962 194	35 009 787
Finland	32 764 398	12 292 606	45 057 004	2 631 254	20 315 188	22 946 442	22 110 562
France	86 146 117	174 732 091	260 878 208	11 999 439	233 978 985	245 978 424	14 899 784
Germany	130 794 816	424 943 518	555 738 334	17 303 375	241 750 002	259 053 377	296 684 957
Greece	130 293	1 380 463	1 510 756	3 154 313	11 317 911	14 472 224	-12 961 468
Hungary	619 914	16 936 727	17 556 641	517 280	6 904 256	7 421 536	10 135 105
Ireland	44 825	11 587 476	11 632 301	103 533	81 176 715	81 280 248	-69 647 947
Italy	22 629 616	144 380 779	167 010 395	1 238 554	73 603 804	74 842 358	92 168 037
Latvia	770 475	5 686 552	6 457 027	1 296 998	1 460 800	2 757 798	3 699 229
Lithuania	5 007 486	8 022 274	13 029 760	505 517	2 314 168	2 819 685	10 210 075
Luxembourg	573	824 369	824 942	3 098	17 305 631	17 308 729	-16 483 787
Malta	:	:	0	104 173	881 140	985 313	-985 313
Netherlands	2 372 251	107 170 931	109 543 182	7 086 720	110 465 116	117 551 836	-8 008 654
Poland	29 830 688	437 307 460	467 138 148	1 458 988	23 190 822	24 649 810	442 488 338
Portugal	2 173 026	2 790 801	4 963 827	788 198	48 966 705	49 754 903	-44 791 076
Romania	4 404 870	20 581 992	24 986 862	1 843 783	4 898 989	6 742 772	18 244 090
Slovakia	8 755	31 220 973	31 229 728	17 778	20 409 197	20 426 975	10 802 753
Slovenia	923 585	3 373 256	4 296 841	923 370	7 153 382	8 076 752	-3 779 911
Spain	18 470 597	54 408 623	72 879 220	4 177 018	66 357 633	70 534 651	2 344 569
Sweden	25 977 565	9 030 188	35 007 753	3 390 947	30 486 678	33 877 625	1 130 128
United Kingdom	138 365 969	193 946 973	332 312 942	32 691 220	50 235 786	82 927 006	249 385 936
EU	**540 017 174**	**1 943 387 203**	**2 483 404 377**	**97 454 931**	**1 371 277 233**	**1 468 732 164**	**1 014 672 213**

Annex to 2.4

Trade of printed advertising and catalogues, 2017, in €

	Export			Import			
	EU28 Extra	EU28 Intra	Total export	EU28 Extra	EU28 Intra	Total export	Trade balance
Austria	30 188 906	95 406 601	125 595 507	5 870 798	118 116 189	123 986 987	1 608 520
Belgium	10 334 509	284 826 274	295 160 783	4 706 273	95 768 102	100 474 375	194 686 408
Bulgaria	422 131	5 640 426	6 062 557	304 834	8 605 779	8 910 613	-2 848 056
Croatia	2 535 065	6 691 340	9 226 405	2 345 792	8 526 866	10 872 658	-1 646 253
Cyprus	38 197	19 387	57 584	134 175	1 029 204	1 163 379	-1 105 795
Czech Republic	17 424 362	388 995 265	406 419 627	827 838	251 050 203	251 878 041	154 541 586
Denmark	44 222 094	35 855 373	80 077 467	944 485	92 743 486	93 687 971	-13 610 504
Estonia	3 318 078	13 892 928	17 211 006	219 586	1 433 796	1 653 382	15 557 624
Finland	4 565 835	26 924 633	31 490 468	827 293	11 950 949	12 778 242	18 712 226
France	101 771 066	120 725 645	222 496 711	17 921 880	460 761 977	478 683 857	-256 187 146
Germany	284 062 356	729 047 363	1 013 109 719	27 226 795	327 870 265	355 097 060	658 012 659
Greece	1 348 223	952 057	2 300 280	1 546 335	7 228 789	8 775 124	-6 474 844
Hungary	3 062 006	37 207 629	40 269 635	806 033	24 899 078	25 705 111	14 564 524
Ireland	912 118	824 790	1 736 908	690 939	4 332 983	5 023 922	-3 287 014
Italy	84 279 250	196 389 524	280 668 774	9 269 327	70 799 691	80 069 018	200 599 756
Latvia	2 617 132	4 604 670	7 221 802	104 608	4 457 358	4 561 966	2 659 836
Lithuania	3 920 010	8 759 023	12 679 033	167 892	5 969 971	6 137 863	6 541 170
Luxembourg	182 784	7 296 896	7 479 680	146 930	7 024 243	7 171 173	308 507
Malta	34 333	1 830 337	1 864 670	57 190	162 153	219 343	1 645 327
Netherlands	83 863 474	275 411 864	359 275 338	10 240 310	135 274 849	145 515 159	213 760 179
Poland	44 597 177	138 604 688	183 201 865	2 757 011	35 624 152	38 381 163	144 820 702
Portugal	1 529 752	8 512 414	10 042 166	2 219 158	15 102 017	17 321 175	-7 279 009
Romania	1 862 847	21 508 623	23 371 470	4 995 884	17 560 146	22 556 030	815 440
Slovakia	594 817	21 984 703	22 579 520	92 396	18 001 822	18 094 218	4 485 302
Slovenia	1 613 280	51 454 541	53 067 821	3 240 316	8 768 356	12 008 672	41 059 149
Spain	14 367 448	92 765 987	107 133 435	3 846 652	35 662 532	39 509 184	67 624 251
Sweden	24 315 884	13 631 721	37 947 605	2 624 781	40 355 625	42 980 406	-5 032 801
United Kingdom	22 319 972	64 199 126	86 519 098	14 999 835	95 132 730	110 132 565	-23 613 467
EU	790 303 106	2 653 963 828	3 444 266 934	119 135 346	1 904 213 311	2 023 348 657	1 420 918 277

Annex to 2.5

Imports from China to the EU, 2017, in €

	Total printed products	Books	Postcards	Photographs	Colouring books	Calendars	Advertising and catalogues
Austria	5 927 461	1 105 340	542 114	1 797 653	134 703	29 713	1 238 116
Belgium	43 705 755	16 695 988	5 275 006	2 236 309	13 241 395	942 930	1 757 576
Bulgaria	700 342	365 622	21 378	102 958	159 136	1 584	20 723
Croatia	2 169 735	682 993	66 132	99 537	708 100	6 533	61 158
Cyprus	300 414	73 563	104 565	24 215	21 290	8 833	15 358
Czech Republic	5 024 155	1 865 443	240 328	219 251	1 386 056	437 328	142 399
Denmark	6 990 260	2 432 903	834 644	813 446	1 411 442	603 780	217 287
Estonia	1 568 291	704 134	3 482	56 315	237 450	1 179	48 390
Finland	5 707 646	2 342 807	626 269	240 511	1 523 731	157 586	295 986
France	88 696 870	46 820 837	3 644 716	8 214 197	13 523 178	5 310 796	3 540 241
Germany	131 333 068	51 464 335	20 980 536	11 758 250	24 859 898	8 913 385	3 242 540
Greece	6 963 765	1 874 705	249 560	209 398	1 987 682	98 912	86 893
Hungary	3 639 666	1 912 372	111 618	117 655	704 984	10 705	50 327
Ireland	5 248 776	1 466 471	1 765 594	760 451	151 072	100 804	49 355
Italy	46 499 170	29 437 463	2 036 665	2 100 281	6 364 362	336 889	1 259 677
Latvia	786 304	452 100	1 805	633	70 958	4 157	10 404
Lithuania	1 140 215	453 929	10 723	19 309	474 455	93 675	12 973
Luxembourg	88 478	25 618	4 719	45	:	215	10 601
Malta	503 265	131 157	3 254	166 251	123 356	587	5 373
Netherlands	83 534 071	29 545 159	25 085 956	6 746 453	4 228 779	3 135 697	2 581 322
Poland	14 532 826	3 292 720	1 906 744	709 537	5 567 989	1 145 679	138 442
Portugal	2 568 211	861 106	84 306	502 302	708 164	52 542	85 989
Romania	3 742 425	1 560 199	35 762	56 416	1 272 885	24 365	177 894
Slovakia	1 310 293	862 331	202 070	62 775	135 108	3 740	7 261
Slovenia	2 597 362	1 595 847	93 342	44 989	404 083	16 553	147 842
Spain	62 363 841	47 098 448	1 240 192	4 061 446	3 518 234	1 293 393	867 279
Sweden	16 098 607	4 390 792	3 560 825	1 031 546	2 360 609	1 072 948	181 230
United Kingdom	344 614 387	132 598 050	131 303 931	20 086 350	24 142 360	8 370 653	3 889 808
EU-28	**888 355 659**	**382 112 432**	**200 036 236**	**62 238 479**	**109 421 459**	**32 175 161**	**20 142 444**

Annex to 2.6

Trade of printed products with the US, 2017, in €

	Exports	Imports	Trade balance
Austria	6 223 604	16 926 504	-10 702 900
Belgium	28 831 558	12 379 372	16 452 186
Bulgaria	372 326	1 087 389	-715 063
Croatia	94 926	653 780	-558 854
Cyprus	10 026	386 141	-376 115
Czech Republic	3 661 492	6 192 273	-2 530 781
Denmark	4 456 296	8 714 844	-4 258 548
Estonia	164 684	223 467	-58 783
Finland	1 211 108	4 323 283	-3 112 175
France	65 030 399	39 192 745	25 837 654
Germany	127 596 899	92 266 892	35 330 007
Greece	1 135 780	5 084 594	-3 948 814
Hungary	1 101 200	6 572 315	-5 471 115
Ireland	3 027 810	13 644 910	-10 617 100
Italy	69 025 861	36 987 060	32 038 801
Latvia	204 565	153 575	50 990
Lithuania	626 796	292 426	334 370
Luxembourg	154 969	791 047	-636 078
Malta	479 192	790 272	-311 080
Netherlands	21 640 915	112 487 851	-90 846 936
Poland	17 332 328	4 880 963	12 451 365
Portugal	738 406	3 503 270	-2 764 864
Romania	989 795	783 726	206 069
Slovakia	413 028	1 354 920	-941 892
Slovenia	807 721	432 249	375 472
Spain	24 314 915	23 120 983	1 193 932
Sweden	8 454 012	39 512 133	-31 058 121
United Kingdom	535 182 103	584 650 700	-49 468 597
EU28	**923 282 714**	**1 017 389 684**	**-94 106 970**

Annex to 4.2

Total graphic paper consumption (in '000 tonnes)

	1991	1995	2000	2001	2002	2003	2004	2005
Newsprint	7 618	8 605	10 351	10 640	9 665	9 704	10 087	10 381
Uncoated mechanical	4 188	4 219	4 539	4 927	5 115	5 177	5 290	5 332
Coated mechanical	4 618	5 260	6 283	6 917	6 970	7 382	7 802	7 838
Uncoated woodfree	7 272	7 991	9 937	9 402	9 586	9 194	9 758	9 726
Coated woodfree	4 480	5 303	8 771	7 163	7 244	7 527	7 681	7 736
TOTAL	28 176	31 378	39 882	39 050	38 580	38 984	40 619	41 013

	1991	1995	2000	2001	2002	2003	2004	2005
Austria	634	713	1 077	1 120	1 018	1 042	892	923
Belgium	1 173	1 387	1 801	1 813	1 841	1 867	1 890	1 871
Czech Republic	222	285	401	425	453	491	525	556
France	4 001	4 557	5 915	5 235	5 293	5 306	5 559	5 328
Germany	7 750	8 015	9 518	9 189	8 660	8 989	9 702	9 641
Italy	3 102	3 543	4 329	4 160	4 182	4 299	4 533	4 694
Netherlands	1 661	1 298	2 093	1 804	1 614	1 720	1 702	1 673
Norway	343	418	492	404	407	563	546	575
Poland	272	606	1 014	987	1 057	1 112	1 332	1 251
Portugal	275	299	450	405	376	415	591	487
Romania	98	111	128	146	158	178	232	257
Slovak Republic	85	136	169	189	226	220	233	239
Slovenia	138	131	116	130	143	122	155	194
Spain	1 808	1 972	2 622	2 231	2 361	2 608	2 380	2 698
Sweden	975	664	1 094	1 238	1 137	966	1 034	993
United Kingdom	4 810	6 252	7 455	7 268	7 084	7 202	7 269	7 272
Other countries	829	991	1 208	1 572	1 156	1 190	1 190	1 081
TOTAL	28 176	31 378	39 882	39 050	38 580	38 984	40 619	41 013

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
9 996	9 794	9 488	8 284	8 442	8 269	7 560	7 255	7 061	6 606
6 218	6 256	6 057	5 322	5 345	5 430	5 017	4 843	4 646	4 623
7 832	8 188	7 845	6 035	6 764	6 479	5 711	5 172	5 143	4 926
9 173	9 410	8 599	8 379	8 298	7 867	7 501	7 175	7 247	7 036
7 687	7 698	7 480	6 187	5 977	5 816	5 606	5 163	5 083	4 754
40 907	41 345	39 470	34 207	34 826	33 861	31 396	29 608	29 180	27 946

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
961	1 051	1 002	871	928	899	690	659	649	606
2 007	1 956	1 906	1 687	1 869	1 953	1 890	1 887	1 850	1 936
676	733	745	569	602	537	520	496	523	558
5 318	5 294	5 004	4 201	4 343	4 119	3 792	3 586	3 619	3 282
9 780	9 941	9 481	8 489	8 695	8 860	8 837	8 622	8 659	8 484
4 593	4 766	4 324	3 726	4 047	3 886	3 467	3 248	3 210	3 062
1 670	1 943	1 573	1 264	1 193	1 138	1 278	1 208	1 041	980
556	593	546	527	490	475	400	379	379	
1 414	1 502	1 600	1 397	1 463	1 469	1 435	1 436	1 504	1 447
264	374	462	665	551	358	369	300	311	345
268	255	231	198	185	171	175	161	137	165
230	248	258	255	266	266	243	254	249	235
186	185	176	174	179	190	208	202	115	116
3 033	2 652	2 580	1 961	1 989	1 872	1 643	1 433	1 480	1 479
1 093	1 059	985	777	827	783	745	604	613	479
7 188	7 009	6 626	5 501	5 468	5 079	4 684	4 488	4 510	4 217
709	679	748	507	688	549	404	392	516	778
40 907	41 345	39 470	34 207	34 826	33 861	31 396	29 686	29 180	27 946

Annex to 4.4

Profile of the European book publishing sector, 2006-2016

	2006	2007	2008	2009	2010
PUBLISHERS' REVENUE FROM SALES OF BOOKS (€ BILLION)	23,2	24,5	23,75	23	23,5
Educational (school) books	14,8%	18,9%	15,9%	17,6%	17,9%
Academic/Professional books	29,4%	22,5%	21,5%	20,0%	20,5%
Consumer (trade) books	47,5%	48,9%	50,6%	50,5%	49,6%
Children's books	8,3%	9,7%	12,0%	11,9%	12,0%
SALES BY AREA					
Sales in the domestic market	77,8%	82,7%	83,0%	84,4%	81,5%
Exports	22,2%	17,3%	17,0%	15,6%	18,5%
SALES BY DISTRIBUTION CHANNELS					
Trade (retail and wholesale)	77,7%	78,3%	77,5%	79,5%	78,0%
Book Clubs	7,6%	6,9%	5,9%	5,6%	5,7%
Direct	14,7%	14,8%	16,6%	14,9%	16,3%
NUMBER OF TITLES PUBLISHED IN PERIOD					
New titles	475 000	490 000	510 000	515 000	525 000
Number of titles in print (active catalogue)	5 250 000	5 600 000	6 100 000	6 400 000	7 400 000
Number of persons in full-time employment in book publishing	140 000	140 000	135 000	135 000	135 000

	2011	2012	2013	2014	2014	2015
	22,8	22,5	22,3	22	22,3	22,3
	18,7%	19,8%	18,8%	19,2%	19,9%	21,0%
	19,5%	19,7%	19,5%	19,5%	19,5%	18,7%
	49,8%	48,7%	49,5%	49,2%	48,4%	47,2%
	12,1%	11,8%	12,3%	12,2%	12,2%	13,0%
	80,5%	79,6%	81,0%	80,0%	77,1%	77,9%
	19,5%	20,4%	19,0%	20,0%	22,9%	22,1%
	80,9%	80,2%	79,3%	79,5%	83,2%	82,8%
	6,0%	4,7%	3,5%	3,3%	2,2%	1,7%
	13,1%	15,1%	17,2%	17,2%	14,6%	15,5%
	530 000	535 000	560 000	545 000	575 000	590 000
	8 500 000	9 000 000	16 000 000	16 900 000	22 000 000	22 500 000
	135 000	130 000	130 000	125 000	125 000	125 000

Annex to 4.6

Electricity prices for industrial consumers, 2008-2016

	2008S1	2008S2	2009S1	2009S2	2010S1	2010S2	2011S1	2011S2	2012S1
Austria	0.1276	0.1286	0.1421	0.1394	0.1352	0.1353	0.1351	0.1353	0.1322
Belgium	0.1293	0.1163	0.1344	0.1305	0.1274	0.1276	0.1328	0.1381	0.1302
Bulgaria	0.0675	0.0782	0.0777	0.0767	0.0782	0.0798	0.0778	0.0800	0.0832
Croatia	0.0922	0.1142	0.1057	0.1110	0.1155	0.1112	0.1115	0.1094	0.1120
Cyprus	0.1638	0.2075	0.1360	0.1715	0.1727	0.1984	0.1919	0.2419	0.2601
Czech Republic	0.1318	0.1335	0.1271	0.1335	0.1239	0.1297	0.1330	0.1299	0.1247
Denmark	0.2113	0.2245	0.2067	0.2140	0.2270	0.2293	0.2423	0.2343	0.2391
Estonia	0.0669	0.0711	0.0759	0.0774	0.0833	0.0873	0.0862	0.0902	0.0941
Finland	0.0781	0.0822	0.0841	0.0833	0.0846	0.0841	0.0930	0.0923	0.0928
France	0.0778	0.0736	0.0865	0.0774	0.0930	0.0835	0.1014	0.0948	0.1117
Germany	0.1410	0.1428	0.1505	0.1515	0.1507	0.1562	0.1668	0.1662	0.1703
Greece	0.0941	0.1006	0.1037	0.1020	0.1036	0.1139	0.1182	0.1256	0.1337
Hungary	0.1371	0.1461	0.1487	0.1618	0.1320	0.1312	0.1271	0.1317	0.1190
Ireland	0.1489	0.1604	0.1364	0.1327	0.1263	0.1277	0.1281	0.1460	0.1488
Italy	0.1565	0.1704	0.1773	0.1581	0.1596	0.1663	0.1741	0.1908	0.1919
Latvia	0.0779	0.0940	0.1085	0.1082	0.1076	0.1096	0.1201	0.1344	0.1346
Lithuania	0.0978	0.0990	0.1099	0.0954	0.1205	0.1265	0.1269	0.1256	0.1378
Luxembourg	0.1035	0.1038	0.1227	0.1228	0.1078	0.1086	0.1063	0.1060	0.1113
Malta	0.1282	0.1700	0.1581	0.1356	0.1809	0.1898	0.1869	0.1886	0.1881
Netherlands	0.1252	0.1234	0.1321	0.1263	0.1205	0.1154	0.1175	0.1131	0.1159
Poland	0.1075	0.1110	0.1100	0.1139	0.1194	0.1204	0.1247	0.1158	0.1127
Portugal	0.0939	0.0946	0.0984	0.0989	0.0982	0.0964	0.1048	0.1146	0.1403
Romania	0.1057	0.1134	0.0970	0.0990	0.1018	0.1008	0.1024	0.1055	0.1058
Slovakia	0.1424	0.1533	0.1693	0.1670	0.1397	0.1426	0.1531	0.1513	0.1579
Slovenia	0.1118	0.1182	0.1235	0.1155	0.1192	0.1206	0.1185	0.1157	0.1138
Spain	0.1108	0.1238	0.1338	0.1299	0.1354	0.1290	0.1342	0.1364	0.1433
Sweden	0.0866	0.0965	0.0832	0.0861	0.1005	0.1050	0.1116	0.1036	0.1012
United Kingdom	0.1147	0.1279	0.1283	0.1164	0.1162	0.1164	0.1179	0.1253	0.1372
EU-28	**0.1194**	**0.1248**	**0.1299**	**0.1252**	**0.1275**	**0.1284**	**0.1360**	**0.1376**	**0.1422**
Norway	0.0980	0.1089	0.0987	0.0994	0.1288	0.1173	0.1381	0.1136	0.1154

2012S2	2013S1	2013S2	2014S1	2014S2	2015S1	2015S2	2016S1	2016S2	2017S1
0.1339	0.1337	0.1329	0.1307	0.1266	0.1247	0.1260	0.1264	0.1229	0.1116
0.1340	0.1305	0.1325	0.1283	0.1309	0.1301	0.1297	0.1349	0.1398	0.1367
0.0935	0.0976	0.0871	0.0896	0.0909	0.0831	0.0939	0.1202	0.0946	0.0915
0.1175	0.1186	0.1180	0.1195	0.1148	0.1150	0.1159	0.1129	0.1096	0.0987
0.2732	0.2440	0.2367	0.2070	0.2256	0.1648	0.1668	0.1238	0.1532	0.1664
0.1234	0.1237	0.1198	0.1003	0.0991	0.0934	0.0947	0.0884	0.0885	0.0832
0.2421	0.2496	0.2463	0.2562	0.2606	0.2589	0.2599	0.2664	0.2651	0.2544
0.0981	0.1169	0.1164	0.1100	0.1117	0.1066	0.1117	0.1054	0.1075	0.1044
0.0915	0.0929	0.0929	0.0910	0.0895	0.0877	0.0875	0.0849	0.0861	0.0827
0.0951	0.1157	0.1022	0.1183	0.1126	0.1232	0.1141	0.1191	0.1191	0.1198
0.1727	0.1879	0.1902	0.2071	0.1992	0.1979	0.1960	0.1974	0.1958	0.1991
0.1381	0.1411	0.1400	0.1510	0.1467	0.1460	0.1299	0.1363	0.1260	0.1215
0.1255	0.1210	0.1229	0.1142	0.1123	0.1080	0.1084	0.1004	0.0992	0.0922
0.1575	0.1534	0.1541	0.1541	0.1532	0.1601	0.1531	0.1498	0.1404	0.1392
0.2075	0.1951	0.1995	0.2000	0.2033	0.1873	0.1855	0.1771	0.1807	0.1712
0.1344	0.1362	0.1394	0.1417	0.1374	0.1425	0.1432	0.1410	0.1453	0.1427
0.1384	0.1489	0.1485	0.1414	0.1417	0.1198	0.1205	0.1136	0.1069	0.1024
0.1074	0.1042	0.1063	0.1067	0.1046	0.1003	0.0965	0.0943	0.0926	0.0849
0.1904	0.1879	0.1869	0.1856	0.1870	0.1679	0.1475	0.1493	0.1469	0.1480
0.1152	0.1144	0.1143	0.1131	0.1075	0.1091	0.1024	0.1037	0.0974	0.0995
0.1176	0.1145	0.1079	0.1015	0.1025	0.1085	0.1059	0.0993	0.1003	0.1079
0.1409	0.1416	0.1397	0.1427	0.1460	0.1402	0.1420	0.1384	0.1396	0.1408
0.1091	0.1337	0.1185	0.1087	0.1001	0.1029	0.0989	0.0913	0.0926	0.0915
0.1525	0.1543	0.1523	0.1382	0.1409	0.1351	0.1346	0.1310	0.1334	0.1378
0.1129	0.1160	0.1153	0.1056	0.1033	0.1009	0.1061	0.1033	0.1015	0.0957
0.1447	0.1482	0.1454	0.1507	0.1412	0.1420	0.1371	0.1337	0.1245	0.1284
0.0970	0.1006	0.0934	0.0885	0.0833	0.0778	0.0738	0.0770	0.0820	0.0810
0.1432	0.1375	0.1436	0.1548	0.1606	0.1788	0.1823	0.1653	0.1534	0.1512
0.1439	**0.1481**	**0.1468**	**0.1529**	**0.1495**	**0.1497**	**0.1474**	**0.1453**	**0.1453**	**0.1415**
0.1074	0.1208	0.1082	0.0998	0.1010	0.0962	0.0856	0.0930	0.1017	0.0888

Annex to 4.7

Letter prices, 2014-2017, in €

	Nominal price for a domestic standard letter				Nominal price for letter mail within Europe			
	2014	2015	2016	2017	2014	2015	2016	2017
Austria	0.62	0.68	0.68	0.68	0.70	0.70	0.80	0.80
Belgium	0.77	0.77	0.79	0.79	1.17	1.20	1.23	1.23
Bulgaria	0.44	0.44	0.44	0.43	0.77	0.77	0.77	0.77
Croatia	0.61	0.60	0.85	0.86	1.45	1.44	1.45	1.46
Cyprus	0.34	0.41	0.41	0.41	0.51	0.64	0.64	0.64
Czech Republic	0.50	0.47	0.48	0.59	0.96	0.91	0.92	1.18
Denmark	1.21	1.34	2.55	3.63	1.88	1.95	3.35	3.36
Estonia	0.45	0.55	0.65	0.65	1.00	1.20	1.40	1.40
Finland	1.00	1.10	1.20	1.30	1.00	1.10	1.30	1.40
France	0.66	0.76	0.80	0.85	0.83	0.95	1.00	1.10
Germany	0.60	0.62	0.70	0.70	0.75	0.80	0.90	0.90
Greece	0.72	0.72	0.72	0.72	0.90	0.90	0.90	0.90
Hungary	0.49	0.47	0.47	0.50	0.99	1.05	1.10	1.20
Ireland	0.60	0.68	0.70	1.00	0.90	1.00	1.05	1.35
Italy	0.70	0.80	2.80	2.80	0.85	0.95	3.50	3.50
Latvia	0.57	0.57	0.57	0.57	0.78	0.78	0.78	0.78
Lithuania	0.45	0.45	0.45	0.45	0.71	0.81	0.81	0.81
Luxembourg	0.60	0.60	0.70	0.70	0.85	0.85	0.95	0.95
Malta	0.26	0.26	0.26	0.26	0.59	0.59	0.59	0.59
Netherlands	0.64	0.69	0.73	0.78	1.05	1.15	1.25	1.33
Norway	1.28	1.26	1.23	1.40	1.66	1.68	1.57	1.83
Poland	0.56	0.56	0.56	0.73	1.24	1.24	1.24	1.38
Portugal	0.50	0.55	0.58	0.58	1.90	2.35	2.45	2.45
Romania	0.36	0.36	0.36	0.31	0.48	0.47	0.90	0.89
Slovakia	0.65	0.65	0.65	0.70	1.00	1.00	1.00	1.00
Slovenia	0.29	0.34	0.36	0.37	1.19	1.29	1.29	1.77
Spain	0.37	0.42	0.45	0.50	0.75	0.90	1.15	1.25
Sweden	0.69	0.77	0.70	0.74	1.62	1.54	1.39	2.22
Switzerland	0.81	0.82	0.94	0.92	1.14	1.15	1.41	1.38
United Kingdom	0.73	0.78	0.88	0.79	1.14	1.24	1.45	1.43

Annex to 4.8

VAT rates applied to printed and electronic publications, 2018

	VAT printed books	VAT printed magazines	VAT printed newspapers	VAT electronic publications
Denmark	25%	25%	25%	25%
Bulgaria	20%	20%	20%	20%
Latvia	12%	12%	12%	21%
Austria	10%	10%	10%	20%
Slovakia	10%	20%	20%	20%
Czech Republic	10%	15%	15%	21%
Finland	10%	10%	10%	24%
Slovenia	9.5%	9.5%	9.5%	22%
Estonia	9%	9%	9%	20%
Lithuania	9%	9%	9%	21%
Greece	9%	9%	9%	24%
Germany	7%	7%	7%	19%
Belgium	6%	0%	0%	21%
Netherlands	6%	6%	6%	21%
Portugal	6%	6%	6%	23%
Sweden	6%	6%	6%	25%
France	5.5%	2.1%	2.1%	5.5%
Malta	5%	5%	5%	18%
Cyprus	5%	5%	5%	19%
Romania	5%	5%	5%	20%
Poland	5%	5%	8%	23%
Croatia	5%	5%	5%	25%
Hungary	5%	5%	5%	27%
Italy	4%	4%	4%	4%
Spain	4%	4%	4%	21%
Luxembourg	3%	3%	3%	17%
Switerland	2.5%	2.5%	2.5%	7.7%
Ireland	0%	9%	9%	23%
United Kingdom	0%	0%	0%	20%
Norway	0%	0%	0%	25%

AUSTRIA
PROPAK Austria
www.propak.at

Verband Druck Und Medientechnik
www.druckmedien.at

BELGIUM
Fédération Belge Des Industries Graphiques (FEBELGRA)
www.febelgra.be

BULGARIA
Printing Industry Union Of Bulgaria
www.printunion-bg.org

DENMARK
Grafisk Arbejdsgiverforening (G.A.)
www.ga.dk

ESTONIA
Eesti Trükitööstuse Liit
www.trykiliit.ee

FINLAND
Graafinen Teollisuus Ry
www.graafinenteollisuus.fi

FRANCE
Union Nationale des Industries de l'Impression et de la communication (UNIIC)
www.uniic.org

GERMANY
Bundesverband Druck & Medien E.V. (bvdm)
www.bvdm-online.de

HUNGARY
Federation of Hungarian Printers and Papermakers (FEDPRINT)
www.fedprint.hu

IRELAND
Irish Printing Federation
www.irishprintingfederation.ie/wordpress/

ITALY
ASSOGRAFICI
www.assografici.it

LATVIA
Latvian Printers Association
www.livoniaprint.lv

LITHUANIA
Association of Lithuanian Industries (LISPA)
www.lispa.net

LUXEMBOURG
Association Des Maitres Imprimeurs Du Grand-Duché De Luxembourg (AMIL)
www.amil.lu

NORWAY
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www.nhografisk.no

PORTUGAL
APIGRAF
www.apigraf.pt

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Grafiska Företagens (GF)
www.grafiska.se

SWITZERLAND
Schweizerischer Verband Fur Visuelle Kommunikation (VISCOM)
www.viscom.ch

SWITZERLAND
Verband Der Schweizer Druckindustrie (VSD)
www.druckindustrie.ch

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