OXFORD ECONOMICS

FASHION COUNCIL GERMANY

The Status of German Fashion 2021

In partnership with:

VDMA
Textile Care, Fabric and Leather Technologies

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Axl Jansen

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FOREWORD

In a European comparison of the 175 largest fashion brands, Germany ranks second in terms of both the number of companies and total sales revenue. Although these figures do not include the numerous independent designers and brands, they clearly show that Germany is a highly relevant nation as a fashion location.

Around 1.3 million people are employed in this country thanks to the fashion industry, which in 2019 contributed a total of around €66 billion to Germany's gross domestic product—making the industry a force to be reckoned with in comparison to other German economic sectors. In international comparisons, Germany is one of the most important sales markets and, for international brands, one of the most important distribution channels. Nevertheless, there is a lack of political and social acceptance to classify fashion as a relevant economic and cultural asset.

Things are different in countries such as France or Italy, whose fashion industries are internationally renowned both for their economic power and as important cultural assets. Since its foundation, Fashion Council Germany has been strongly committed to political lobbying for the fashion industry, in addition to its mission to accompany the German fashion and design landscape into a visionary, technological and sustainable future. In recent years, we have had to register the fact that we in Germany lack an instrument to start a well-founded dialogue with government and business—with facts, analyses and recommendations for action. What was needed was a detailed industry analysis. We are pleased that this is now available with the "Status of German Fashion" and the support of the Federal Ministry for Economic Affairs and Energy.

Our dialogue with politicians, including a meeting with Chancellor Merkel in the Chancellery, has already had a notable effect as it underlines the fundamental importance of the German fashion industry as well as the relevance of dealing with its influence on the economy.

The "Status of German Fashion" is also the first of its kind: a study that covers the full sweep of the fashion industry's significant components. There have been important studies in the past, for example on the German fashion retail trade or textile industry, but from Fashion Council Germany's point of view a consideration of the entire fashion industry was always missing. So far, no study has done justice to the size and diversity of fashion in Germany. Fashion is a cross-sectional industry with complex value chains—the industry includes designers, fashion companies, manufacturers, retailers and wholesalers, as well as trade fairs, fashion magazines and fashion schools. They are all part of the cultural and economic power of fashion.

"Made in Germany" is still a globally accepted seal of quality: German fashion companies are internationally regarded as reliable partners. In addition, we are especially strong in the areas of sustainability, technology and innovation, and above all in textile development. The rethinking and conversion of business models in the direction of sustainability, which has long been necessary and will in future be

Axl Jansen

required by EU regulations, is moving into the fashion industry across the board—albeit with varying nuances. Germany also stands for innovative global sportswear brands like no other country—with industry giants like adidas and Puma, we are international leaders.

Despite our strengths, the study also shows that we are not always noticed on the world stage. As innovative as we are here in Germany in the field of technology, our experts emphasise our ability to expand in the international competition for trend-setting design.

Since the 1980s, local fashion production capacity has been declining. This is due to so-called "offshoring", i.e. the outsourcing of operations to other countries. This has kept German fashion companies competitive, but it also means that there has been a systematic outsourcing of knowledge which, according to the study, is now lacking in the country today. In contrast to other important sectors of the economy, fashion is actually the only one that has not engaged in "re-shoring" in recent years. The challenges of the future are to revolutionise new sustainability requirements in the supply chain of the fashion industry.

From this and many other findings of the study, there is an urgent need to act so that Germany can retain and expand its status as an important fashion player in the near future and in the long term.

Worldwide, retail will continue to shift towards online. Across Europe, the share of retail sales from e-commerce has more than doubled over the past decade. Online sales growth has been even faster in Germany. Still, statistically speaking, e-commerce here appears to be less widespread than in other European countries. The Covid-19 pandemic caused a massive increase in online activity here in 2020. The need to be strong in terms of digitalisation and e-commerce has once again been highlighted by this year of the pandemic. We expect this will be seen in future statistics.

The year of the study, 2020, was an extremely challenging year for society and the economy as a whole with the pandemic, and has exposed existing "grievances" and accelerated negative effects. Today it is evident that the urgency to find solutions and answers have only become more visible as a result of the coronavirus crisis, including the example of e-commerce.

This study, the "Status of German Fashion" is therefore a basis, an appeal and a recommendation for action to shape the future of the German fashion industry **together** with all sections of the industry and the government.

Fashion Council Germany, January 2021

EXECUTIVE SUMMARY

€66 billion

Total contribution to German GDP of the fashion industry in 2019.

Germany is both one of the EU's largest clothing producers and one of its largest markets for fashion products.

In this report, we estimate the fashion industry's total contribution to the German economy through the employment, GDP and tax that it supports. We also present key themes of importance to the industry that have emerged from our interviews with 44 industry experts and stakeholders selected from across the fashion industry as a whole, including the strengths and weaknesses of the sector, how it can respond to opportunities and threats, and recommendations for the future.

The fashion industry is a broad collection of businesses across several different economic sectors. We define the industry, based on previous studies,[1] to include: the manufacturing of textiles used for fashion products; the manufacturing of clothing and footwear; the wholesale and retail of fashion products; fashion magazines; fashion advertising, and fashion education. The products included in the definition are clothing, footwear, accessories, bags and jewellery.

1.3 million

Total employment supported in Germany by the fashion industry in 2019.

THE FASHION INDUSTRY MAKES A SIGNIFICANT CONTRIBUTION TO THE GERMAN ECONOMY

1. We calculate that **the fashion industry contributed a total of €66 billion to Germany's GDP in 2019**. Of this, €28 billion came from the industry's direct operations. A further €20 billion was supported by the industry's purchases in the supply chain, and €18 billion by industry and supply chain workers spending their wages. This means that for every €100 the industry contributes directly, a total of €235 is contributed to the German economy.

2. We also estimate that **the industry supported employment of close to 1.3 million in the German labour market in 2019**. Of these, 770,000 were employed directly by the industry, 260,000 within the fashion industry's German supply chain and 240,000 by worker spending. This means that for every 100 jobs supported directly by the industry, a total of 160 are supported across the German economy as a whole.

3. We also find that **the fashion industry generated €36 billion in tax revenues in 2019**, with the majority coming from VAT payments and labour taxes.

[1] British Fashion Council, *The value of the UK fashion industry*, 2010

THE INDUSTRY'S STRENGTHS PLACE IT WELL TO TAKE ADVANTAGE OF GROWTH AREAS AHEAD…

The "Made in Germany" brand has an international reputation for quality, reliability, and good value. This extends to fashion: the country is also noted for its high-technology approach to fashion, including technical textiles and the use of advanced manufacturing equipment for clothing and textiles.

Germany has a handful of globally recognised brands, particularly its largest sportswear companies. However, outside of this area, our interview respondents noted that the fashion industry generally has a low worldwide level of visibility and more could be done to promote Germany's fashion brand.

The industry is **well placed to respond to the trend towards sustainable fashion**: its quality workmanship ties in with customers buying fewer, higher-quality items that will last a long time. Germany's position as an innovator of new textiles and manufacturing processes may also mean it can capitalise on more sustainable techniques.

To maintain global market share, **the German fashion industry will need to continue to invest to stay at the forefront of fashion technology**, as emerging markets mature in this area. In particular, China is likely to become a strong competitor in technical fabrics and the production of textile manufacturing equipment over the medium term.

…BUT POLICY SUPPORT MAY BE NEEDED TO FULLY REALISE THESE OPPORTUNITIES

Stakeholders identified a number of areas where government policy could support the industry, including promotion of the *German fashion brand* on the world stage. Stakeholders felt that this, in combination with grass-roots promotion in schools of German fashion design opportunities, would enable the country to train, retain and attract design talent.

"Federal Chancellor Angela Merkel herself asked Fashion Council Germany for more facts and to analyse the status, positioning and economic power of the German Fashion industry. With the results of the study we now have the proof that the German Fashion Industry has impressive economic power."

Marie-Louise Berg, FCG Executive Board Member and Founder Berg Communications Berlin

“ The fashion industry is a major but nevertheless underestimated economic factor in Germany. ”

Elgar Straub, Managing Director, VDMA Textile Care, Fabric and Leather Technologies

Our interviewees also **identified the need for support from government for helping businesses to shift towards more sustainable business practices**. German consumers tend to favour clothing at lower prices, while sustainable clothing tends to be possible only at higher price points—financial support from the government may help to bridge this gap. Stakeholders also felt that there are actions that the industry could take itself to better navigate threats and opportunities ahead. This includes greater use of digital technology, particularly among retailers, where the use of the internet to sell products and engage with customers is not quite at the same level as some other major fashion markets.

The fashion industry is spread widely across Germany, but our interviewees believed that creating some industry clusters or “centres of excellence” may help the industry to build the critical mass needed to attract greater investment. These industry hubs may also be important for attracting and retaining design talent.

Janine Sametzky

Vicky Lehmann

1. INTRODUCTION

Germany has a "renowned history for manufacturing excellence",[2] with consumers often citing "Made in Germany" as the most positively influential international label of origin that could be seen on a product.[3] In the US for instance, the German brand is outranked only by domestically-produced goods.[4]

"The textile and clothing industry is one of Germany's most important consumer goods industries. We need to use this powerful position much more actively. We need to highlight and promote our German fashion design much more, nationally and internationally."

Claudia Hofmann, FCG Executive Board Member & Creative Fashion Consultant

This perception of quality extends to fashion manufacturing. We interviewed experts on the Germany fashion industry[5] and a key theme identified was that the *German fashion brand* stands for high quality workmanship and timeless design at favourable price-quality ratios, with businesses in the sector being very reliable to work with. Germany is also seen as a significant innovator in the field of technical synthetic textiles,[6] with a large proportion of textile production being in this area.

The sector is one of the largest producers of textiles and clothing in both Europe and across the world, and according to the Federal Foreign Office, the majority of Europe's fashion designers are trained in Germany's 40 fashion schools.[7] Our analysis provides evidence on the extent of the industry's impact and reach, but despite its size and significance, our expert interviewees note that the industry is not given as much support by the government as some other sectors of the German economy.

We also include three articles across the report from industry experts to share their perspectives and ideas on sustainability and digitalisation.

1.1 OBJECTIVES OF THIS REPORT

This report assesses the contribution of the fashion industry to Germany's economy. We also identify and discuss key trends in the industry, its strengths and weaknesses, as well as opportunities and recommendations for the support needed to sustain further growth.

We begin in Chapter 2 by demonstrating how the industry has evolved over the past few decades and how it is placed internationally. In Chapter 3 we set out our estimates for the industry's economic footprint. In Chapter 4 we assess strengths, weaknesses, opportunities and threats for the industry, and analyse how these interact to suggest potential strategies for the future. Chapter 5 takes a deeper look into two areas of particular importance for the industry: technological innovation and the trend towards sustainability. Lastly, in Chapter 6, we summarise stakeholders' suggestions for how government and industry associations could best support the industry's development in the years ahead.

[2] World Economic Forum, Policy recommendations for Germany
[3] YouGov, "Made in Germany" is the best thing you can see stamped on your product, 2019. Survey of over 6,000 consumers across 23 countries.
[4] Statista Made in Country Index, 2017. A poll of 43,000 consumers representing 90% of world population.
[5] See Appendix 1 for list of participants.
[6] Technical textiles are those manufactured primarily for their functional performance rather than aesthetics.
[7] Deutschland.de, Study in Germany: Fashion, 2018

DEFINING THE FASHION INDUSTRY

In this report, we define the fashion industry as relating to the following products and services[8]:

- Clothing (men's, women's and children's wear)
- Bags & luggage
- Footwear
- Accessories
- Jewellery & watches
- Fashion magazines
- Fashion education
- Fashion advertising

Specific types of clothing such as sportswear and workwear are included across the categories of menswear, womenswear, childrenswear, and footwear.

To estimate the economic impact of the industry's provision of the above products and services, we consider the economic impact of the following sectors, aligning as closely as possible to the standard industry classifications used in economic statistics[9]:

- Textile manufacturing (focusing on where the output is used for fashion products)
- Manufacturing of clothing and footwear
- Other fashion manufacturing (accessories, jewellery etc.)
- Fashion wholesaling
- Fashion retailing
- Advertising and marketing services used by the fashion industry
- Magazine publishing (focusing on fashion magazines)
- Higher education (focusing on fashion courses)

[8] Reflecting previous work carried out by Oxford Economics & British Fashion Council in *The Value of the UK Fashion Industry*, 2012
[9] Detailed descriptions of these industries and how they are used are given in Appendix 2.

Max Menning

2. THE STATE OF THE GERMAN FASHION INDUSTRY TODAY

2.1 GERMANY'S PLACE IN THE GLOBAL FASHION ECONOMY

Germany is a major manufacturer, with the fourth-highest total manufacturing output in the world.[10] This prominence extends to the fashion industry, as Germany is one of the largest producers of clothing in the EU. In 2018, the country's clothing manufacturing sector was worth €2.3 billion in terms of gross value added (GVA),[11] behind Italy as the second largest producer in the EU27. On a global scale, however, the major EU producers manufacture significantly less clothing than China, which produced €66 billion of clothing in 2018.

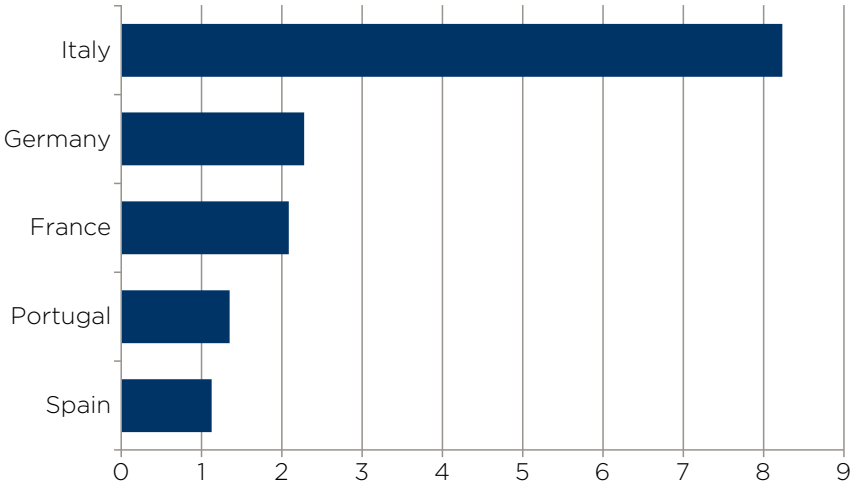
Germany is also a notable manufacturer of textiles, producing €3.1bn worth of GVA in 2018, again the second largest in Europe behind Italy's €5.5bn.[12]

Beyond producing materials and finished garments, Germany specialises in producing machinery for textile, clothing and leather production. In 2018, this sector's output was worth €1.9 billion, the highest in the EU27, and it employed more than 23,000 people.

Germany's fashion industry is highly integrated with world markets, with significant imports and exports of fashion goods. For instance, in 2018 Germany was the third largest exporter of textiles in the world by value, behind India and China.[13] Germany was also the fifth largest exporter of clothing, and the fourth largest exporter of footwear. It was also the second largest importer of clothing and footwear and fifth-largest importer for textiles. The country's largest export markets for German textiles and clothing include neighbours such as Poland, Austria, Switzerland, France and the Netherlands, as well as Italy and the UK. The largest import suppliers were China, Bangladesh, Italy, Turkey and Vietnam.[14]

As one of the largest economies in the world, Germany has one of the world's most significant consumer markets for the sale of fashion products. In 2019 alone, consumers in Germany spent €76 billion on clothing and footwear, just behind the UK as the highest spenders in Europe, and sixth highest in the world behind the larger economies of the US, China, India and Japan.[15]

Fig. 1: Gross value added by clothing manufacturing sector, 2018, five largest EU countries

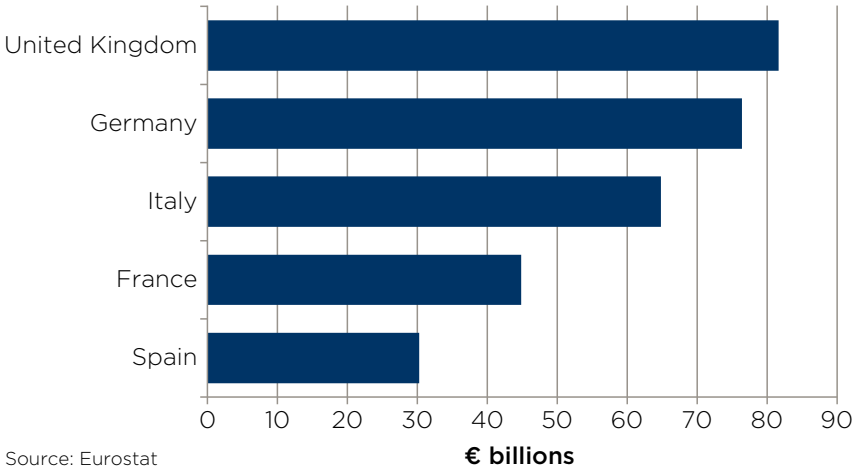


Source: Eurostat

> **"If something is manufactured in the German textile and clothing industry it stands for quality."**
>
> *Nina Knaudt, CEO, Rianna + Nina*

[10] Oxford Economics *Global Industry* database
[11] Gross value added is a measure of economic output. Eurostat, *Structural Business Statistics* database
[12] This international comparison includes a significant amount of textile manufacturing that is unrelated to clothing and fashion, as suitable data do not exist to focus solely on that portion of the industry. However, we have excluded the following sub-sectors, which are are least likely to be related to clothing: manufacturing of rope/twine/nets; manufacturing of carpets/rugs; manufacturing of articles such as towels, sheets, linen.
[13] Oxford Economics *Global Trade* database
[14] Destatis.
[15] Figures from Oxford Economics' *Global Economics* database

Fig. 2: Consumer spending on clothing, top 5 European countries, 2019



Source: Eurostat

2.2 THE EVOLUTION OF GERMANY'S FASHION INDUSTRY

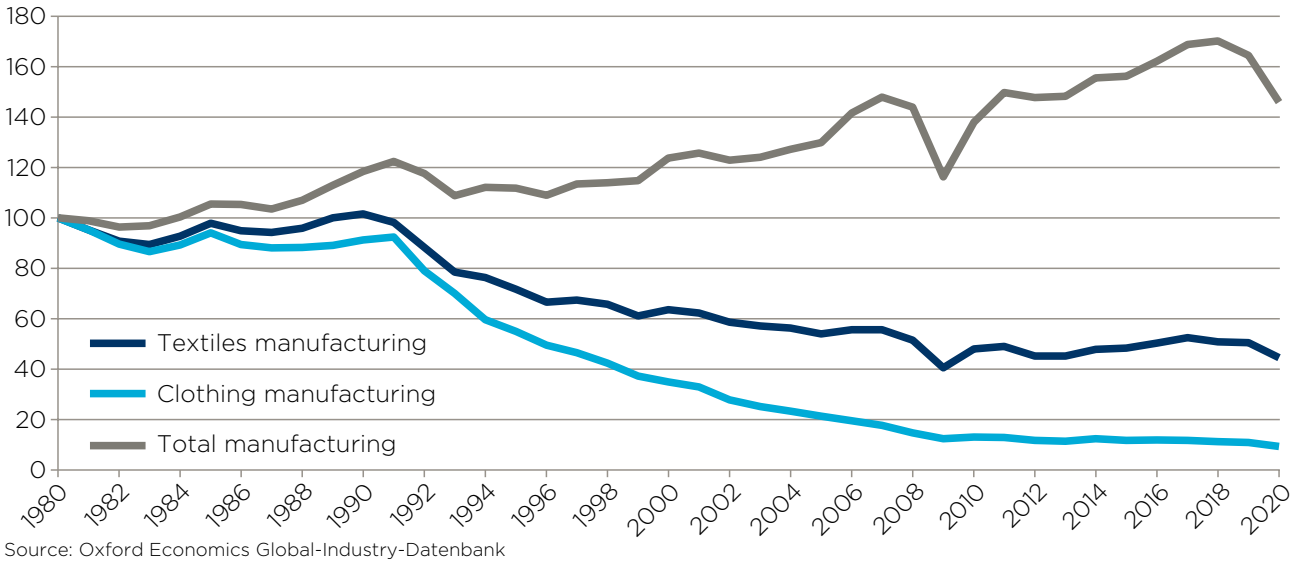
Germany continues to hold a position near the top of the world rankings for production despite manufacturing output of clothing and footwear declining in Germany by 91% between 1980 and 2020 in terms of gross value added (after adjusting for inflation), and by 55% for textile manufacturing. This compares to growth of 46% over the same time period for the overall German manufacturing sector.

"The manual work is disappearing more and more in Germany and is not being made attractive by politics. I think people underestimate the necessity for this."

William Fan, Founder, William Fan

Fig. 3: Gross value added of the German clothing and textile[16] manufacturing sectors versus total manufacturing industry, real terms

Index 1980 = 100



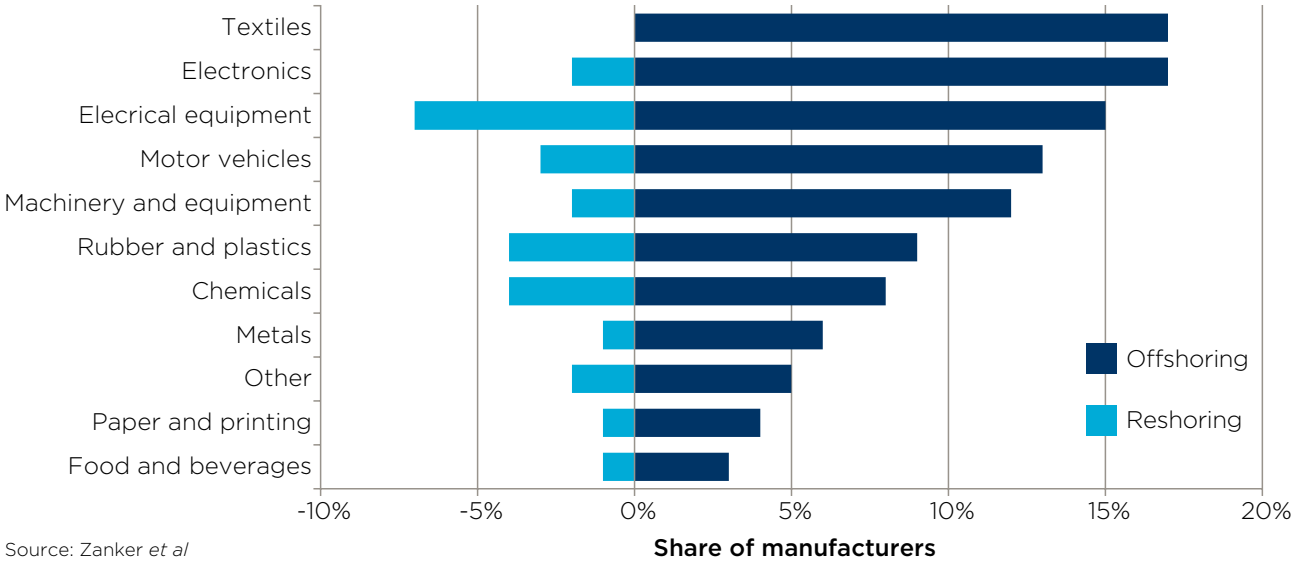
Source: Oxford Economics Global-Industry-Datenbank

[16] For this long-running time series comparison the data includes the entirety of the German textile manufacturing sector, with no exclusions.

A key reason for this downward trend is that German textile and clothing companies have relocated their operations to another country (known as "offshoring"), or outsourced manufacturing to other companies around the world.

As Fig. 3 above shows, the size of the clothing and textile manufacturing sectors began to shrink around the early 1990s. This trend was fuelled in part by offshoring, and even in the early 2010s, 17% of German textile manufacturers offshored production between 2010 and 2012, and did not re-shore any production. This is the largest net share of any industry—17% of electronics manufacturers also offshored production during that timeframe, but 2% reshored operations.

Fig. 4: Share of German manufacturers that offshored and re-shored production, by sector, 2010-2012[17]



Source: Zanker *et al*

2.2.1 German fashion and online retail

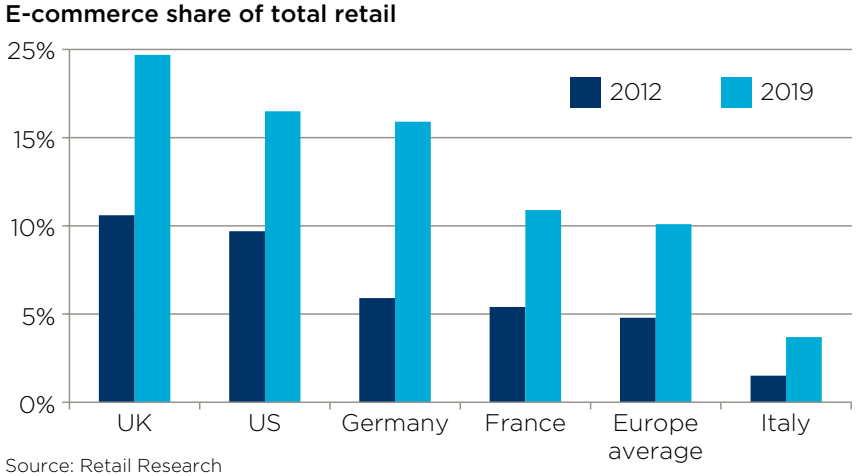
Although domestic production of clothing has continued to slowly decline since 2010, fashion consumption in Germany has held firm and even been slowly but steadily increasing over the past decade: total expenditure on clothing and footwear rose by an annual average of 0.5% between 2010 and 2019 after adjusting for inflation.[18]

A worldwide trend in consumption patterns over that time period has been towards online retail sales, with the global e-commerce market for all products estimated to be worth nearly $3.5 trillion in 2019, up from $2 trillion in 2016.[19] Across Europe as a whole, the share of retail sales that comes from e-commerce more than doubled from 4.8% in 2012 to 10.1% by 2019. Growth in online sales was even faster in Germany, rising from a share of 5.9% in 2012 to 15.9% in 2019.[20]

This means that the penetration of e-commerce in Germany was notably above the European average and well ahead of the share of 3.7% in Italy, for instance. However, e-commerce penetration in 2019 was slightly greater in the US at 16.5%, and much greater in the UK, where e-commerce sales made up 19.7% of retail sales.

[17] Zanker et al, *Globale Produktion von einer starken Heimatbasis aus*, 2013
[18] Eurostat, *Final consumption expenditure of households by consumption purpose* database
[19] Digital Commerce 360, *Global ecommerce sales to reach nearly $3.46 trillion in 2019,* November 2019
[20] Centre for Retail Research, *Online: UK, Europe & N. America 2020 estimates*

Fig. 5: Retail e-commerce sales as a proportion of total retail trade in selected countries, 2012 and 2019

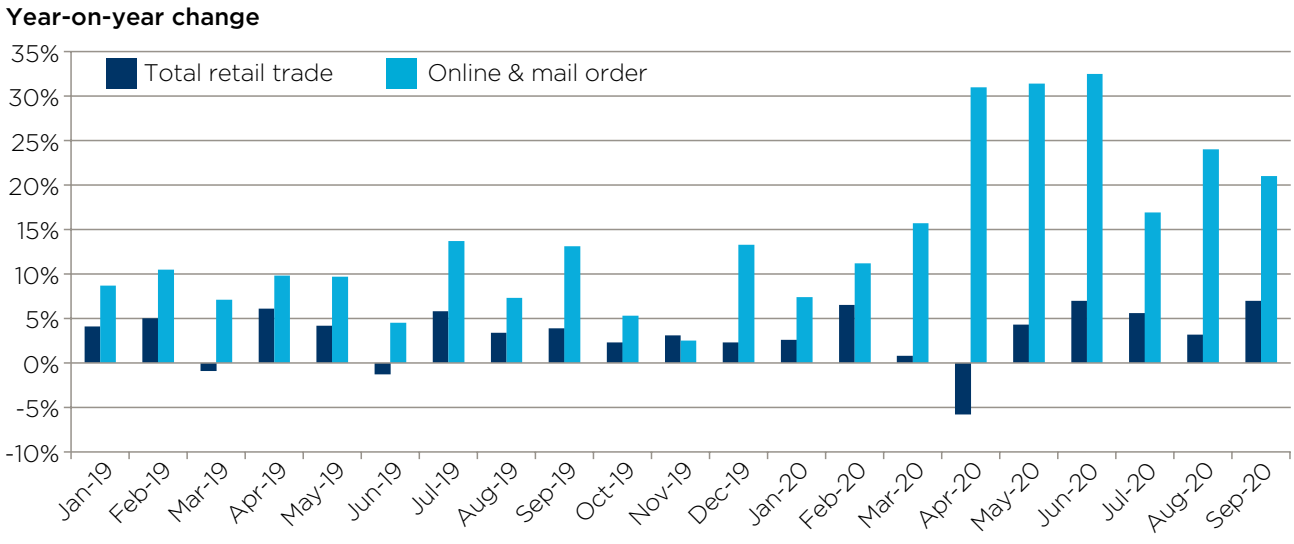


Source: Retail Research

The adoption of online sales by retailers in Germany may be less broad-based than in other European countries: in 2019, 28% of German retailers gained at least 1% of their revenue from e-commerce. This puts Germany in 13th place in the EU28, behind 42% of retailers in the UK in 2019, 49% in the Netherlands and 61% in Denmark.[21]

While e-commerce has grown rapidly in recent years, the COVID-19 health crisis in 2020 saw online retail revenue grow even more rapidly, as restrictions on the opening of physical shops were put in place and advice on social distancing encouraged people to go out less in public. Revenue in Germany for online retailers[22] grew year on year in real terms by over 30% in April, May and June 2020 as restrictions took hold – much faster than the average annual growth of approximately 8% seen across 2017, 2018 and 2019. E-commerce typically sees a seasonal boost in November and December each year, but in 2020 revenue for online retailers climbed in April and remained high across the year. This compares to the retail sector as a whole, which saw revenue fall year on year in real terms in April 2020. Total retail sales growth and revenue recovered to typical levels after that month, but did not see the rapid, sustained growth experienced by online retailers.

Fig. 6: Annual growth in Germany of total retail sales and sales by internet and mail order companies, real terms



Source: Destatis

[21] Eurostat, *E-commerce sales* database

[22] Online retailers in this context refers purely to businesses whose main activity is selling online or through mail order, it does not include the online sales revenue of mainly physical retailers.

GERMANY'S LARGEST FASHION COMPANIES

Germany's sports clothing companies are prominent brands domestically and internationally. The adidas Group, whose major brands are adidas and Reebok, had €23.6 billion of sales in Germany in 2019, making it by far the largest German fashion company, followed by Puma with €5.5 billion. Other large fashion companies include German retailer Otto Group, the German subsidiary of Swedish retailer H&M and German luxury brand Hugo Boss.

Fig. 7: Germany's 10 largest fashion brands by sales revenue in Germany, 2019[23]

Rank	Company	Brands	Sales, 2019, €bn
1	adidas Group	adidas, Reebok etc.	23.6
2	Puma	Puma, Cobra	5.5
3	Hugo Boss	Boss, Hugo	2.9
4	C&A Deutschland	C&A, Canda, Clockhouse, Yessica, Rodeo etc.	2.2
5	Kik	Kik, Ergee	2.1
6	New Yorker	New Yorker	1.9
7	S. Oliver Group	S. Oliver, Comma, Liebeskind Berlin etc	1.3
8	Esprit	Esprit	1.1
9	Takko	Takko	1.1
10	Ernsting's Family	Ernsting's Family	1.1

Fig. 8: Germany's 10 largest fashion retailers by sales revenue in Germany, 2019[24]

Rank	Company	Brands	Sales, 2019, €bn
1	Otto Group	Otto, Baur, Bonprix, Heine Schwab, About You etc.	4.7
2	H&M, Hamburg	H&M, COS, Weekday, Monki etc.	3.2
3	C&A	C&A stores and online	2.2
4	Zalando	Online shops and outlets	2.0
5	Deichmann	Deichmann, Snipes, Onygo, Soulbob, Ochsner	2.0
6	Schwarz Gruppe	Lidl, Kaufland	1.5
7	Tengelmann	Kik	1.5
8	P&C Düsseldorf	P&C Modehäuser, Anson's	1.4
9	HBC	Kaufhof	1.2
10	TJX Deutschland	TK Maxx	1.1

[23] Textilwirtschaft Deutschland *Die Grössten Deutschen Modemarken 2019.*
[24] Textilwirtschaft Deutschland *Die Grössten Bekleidungseinzelhändler in Deutschland 2019.*

Lisa Wassmann

3. THE ECONOMIC IMPACT OF THE FASHION INDUSTRY

In this chapter, we present our estimates of the fashion industry's contribution to the German economy.

"I believe that one of our great assets, which I always feel as a retailer, is that we are the largest and most relevant consumer market in Europe."

Michael Kliger, CEO, Mytheresa

3.1 INTRODUCTION TO OUR IMPACT ANALYSIS

We assess the impact of the German fashion industry using a standard means of analysis called an economic impact assessment. This involves quantifying the industry's economic impact across three channels:

- **Direct impact**—this encompasses the economic activity and employment supported by the fashion industry's own activities in Germany.
- **Indirect impact**—this reflects the economic activity and employment supported in supply chains as the German fashion industry purchases goods and services from other German businesses.
- **Induced impact**—this comprises the wider economic activity supported in Germany as employees of the fashion industry, and those in the industry's domestic supply chains, spend their earnings, for example, in local retail and leisure establishments.

This approach enables us to build a picture of the fashion industry's total contribution to the German economy across three key metrics:[25]

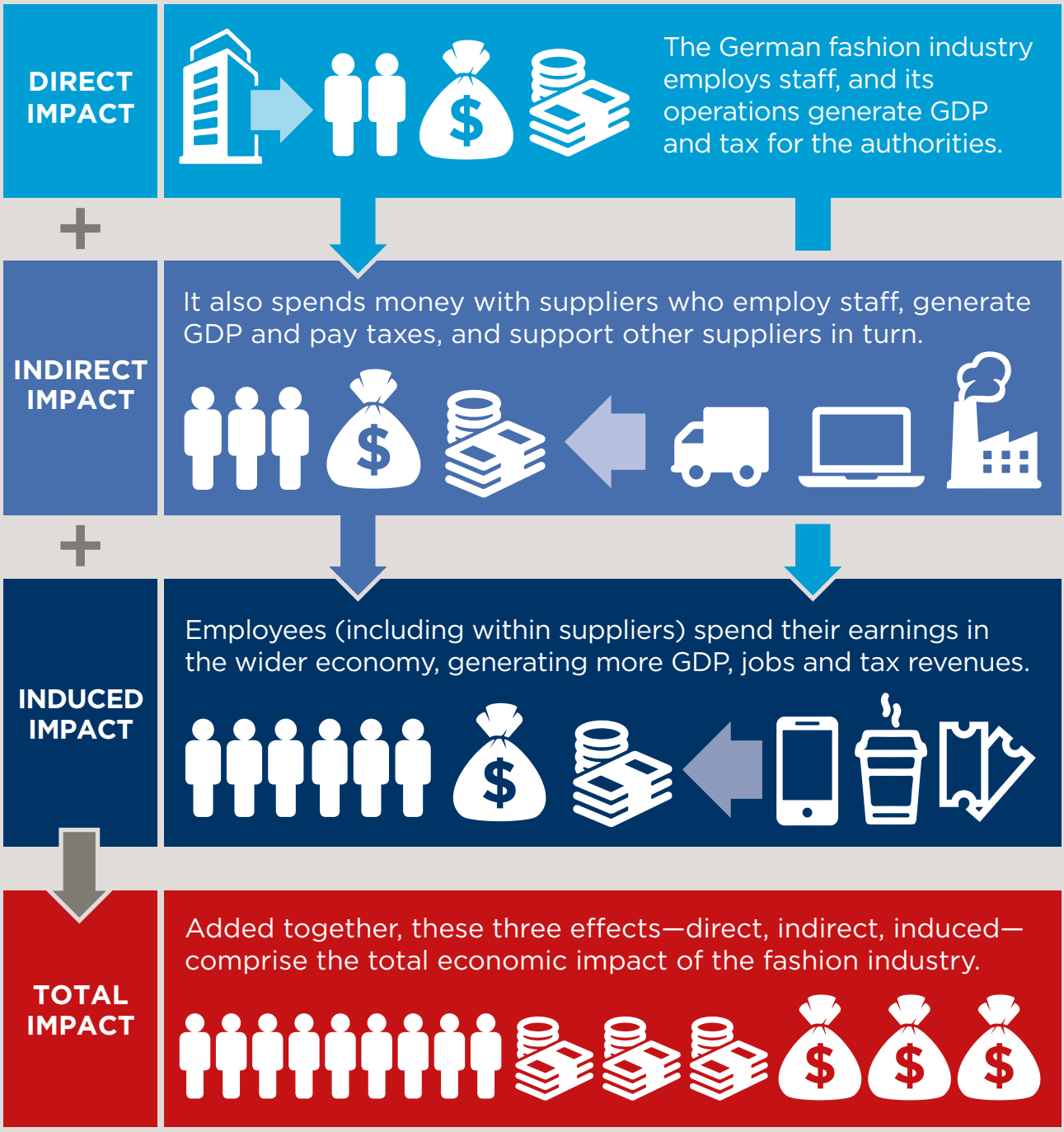
- **GDP**—more specifically, the fashion industry's "gross value added" (GVA) contribution to gross domestic product (GDP). In simple terms, GVA is the sum of income generated by the industry in the form of employee compensation, business profits and taxes on production.
- **Employment**—total headcount of employment supported by the industry's activity.
- **Tax**—the amount of tax revenue generated by the industry for the German government, including VAT on fashion purchases, labour taxes and corporation taxes.

The modelling upon which this report is based computes the economic footprint of the fashion industry in Germany for 2019, based on the latest economic data available at the time of writing.

[25] The impact results are presented on a "gross" basis. They therefore ignore any displacement of activity from other industries. Nor do they consider what the resources currently used by the fashion industry or stimulated by its expenditure could alternatively produce in their second-most productive usage. Our economic impact analysis therefore estimates the actual economic footprint of the fashion industry in Germany each year, but does not estimate the extent to which the size of the German economy might differ if the fashion industry did not exist.

THE CHANNELS OF ECONOMIC IMPACT IN OUR MODEL

More detail on the methodology used to create these estimates can be found in Appendix 2.



3.2 THE DIRECT IMPACT OF FASHION MANUFACTURING AND DISTRIBUTION

The largest components of the German fashion industry are fashion wholesaling and retailing (collectively referred to here as "distribution") and manufacturing. These sectors are the core of the industry and provide fashion products to consumers, either by manufacturing them or importing them from overseas.

"The German fashion industry has traditionally always been very reliable, just as the Germans are reliable."

Adrian Runhof, CEO, Talbot Runhof

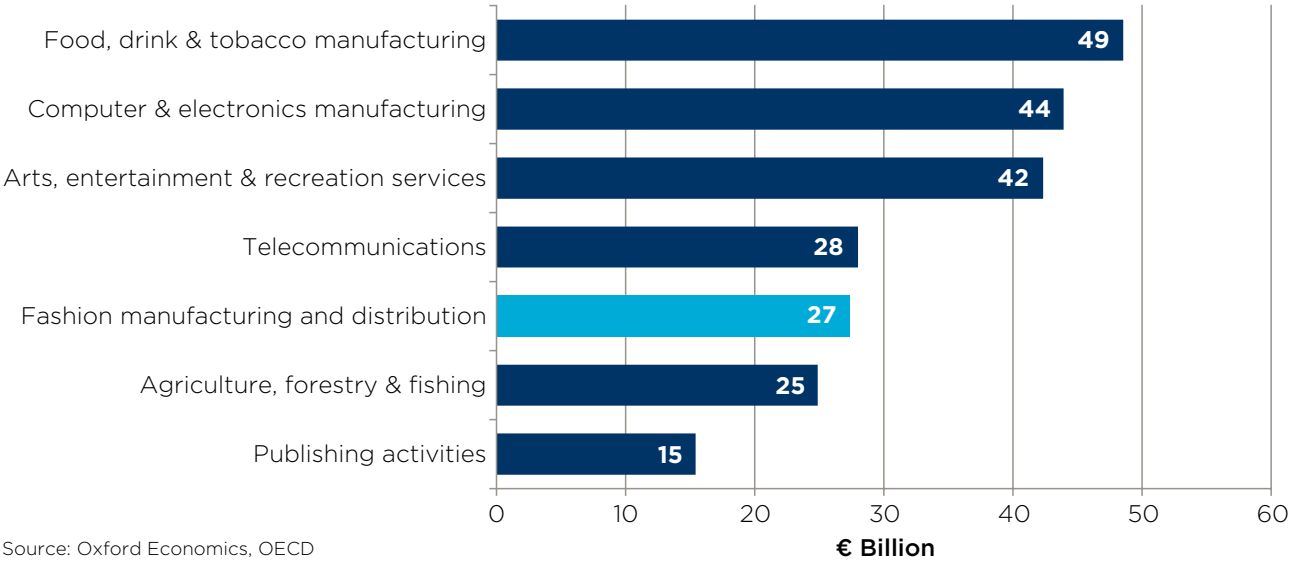
3.2.1 Direct impact on GDP

We estimate that in 2019, fashion manufacturing and distribution directly contributed €27 billion to German GDP in gross value added terms, equivalent to approximately 1% of Germany's total €3.4 trillion GDP. This means the core of the fashion industry is slightly larger than the agriculture, forestry & fishing industry (€25 billion GVA) and slightly smaller than the telecommunications sector (€28 billion). For reference, this compares to an estimated €122 billion contribution from the automotive manufacturing sector in 2019.

Of this €27 billion total, by far the largest contribution came from fashion retail, at 65% of the total, and fashion wholesale contributed a further 20%.[26] This highlights the importance of the distribution of fashion products to the overall value of the German fashion industry, with manufacturing contributing 15% to the total.

Breaking down the impact of the fashion industry by product type, womenswear and menswear were the most important, together accounting for over 60% of the total direct GVA contribution in 2019.

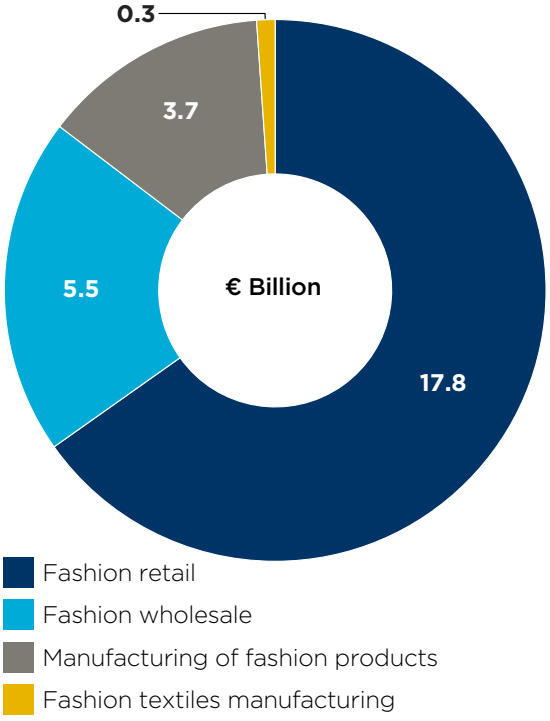
Fig. 9: Direct GVA of the German fashion industry versus other German industries, 2019



Source: Oxford Economics, OECD

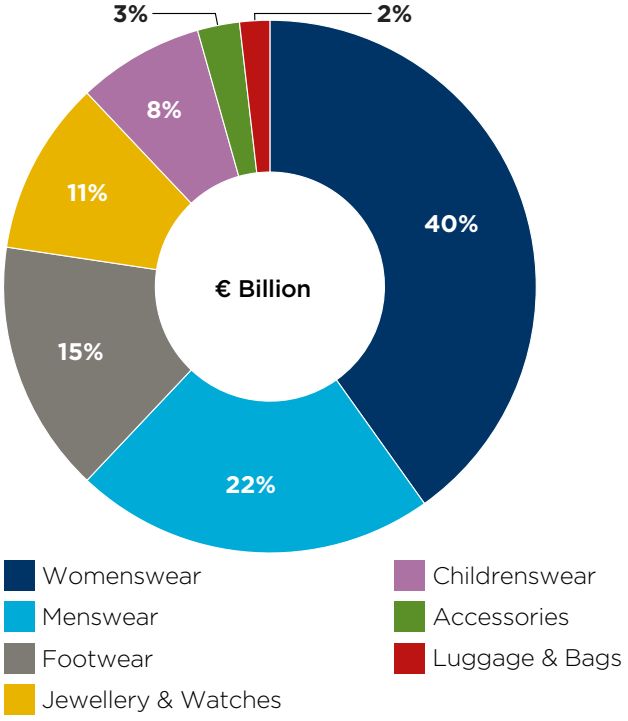
[26] Fashion companies are split into the different sectors used here mostly according to their primary activity. Statistics are then recorded along these sector lines by Statistisches Bundesamt ("Destatis"), whose data we use for this analysis.

Fig. 10: Direct GVA impact of the German fashion industry by sector, 2019



Source: Eurostat, Destatis, Oxford Economics

Fig. 11: Direct GVA impact of the German fashion industry by product category, 2019

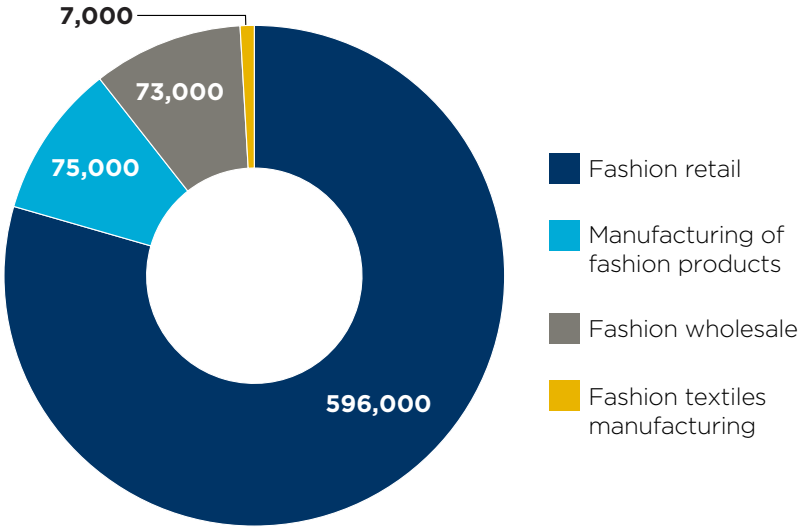


Source: Eurostat, Destatis, Oxford Economics

3.2.2 Direct impact on employment

In 2019, the German fashion industry employed a total of 750,000 workers, nearly 2% out of total employment in Germany of 45 million in 2019. By far the largest component was the retail sector, with 596,000 or 79% of the total—reflecting the relatively labour-intensive nature of this sector. Fashion wholesale and manufacturing of fashion products each employed approximately another 10% of the total.

Fig. 12: Direct employment impact of the German fashion industry by segment, 2019



Source: Eurostat, Destatis, Oxford Economics

Labour productivity, defined as GVA per worker, varied significantly between the different segments of the German fashion industry. Workers in fashion wholesale contributed an average of €76,000 a year to GDP, 13% more than the average across the German economy. In contrast, productivity in fashion retailing was €30,000 on average, less than half the average across all sectors.

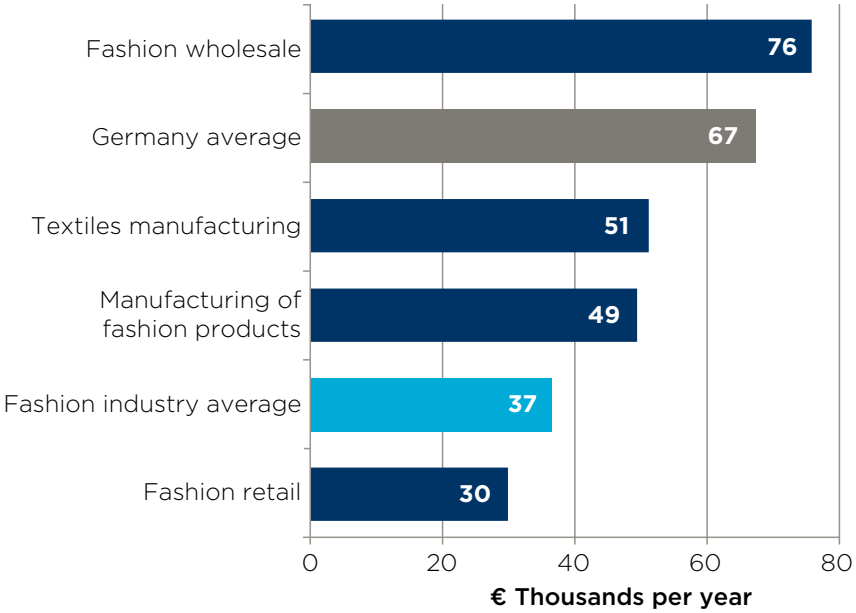
3.2.3 Direct impact on tax revenues

The fashion industry directly supported €22 billion in tax payments in 2019. Close to 60% of this total came from the value added tax (VAT) collected from the retail sale of fashion goods. Taxes on labour, in the form of employee and employer social security payments and employee income tax, accounted for another 39% of total tax payments by the industry. The remaining 2% came from corporation tax.

"I think the combination of Made in Germany and real technical innovation coupled with digital innovation is the biggest opportunity in the industry."

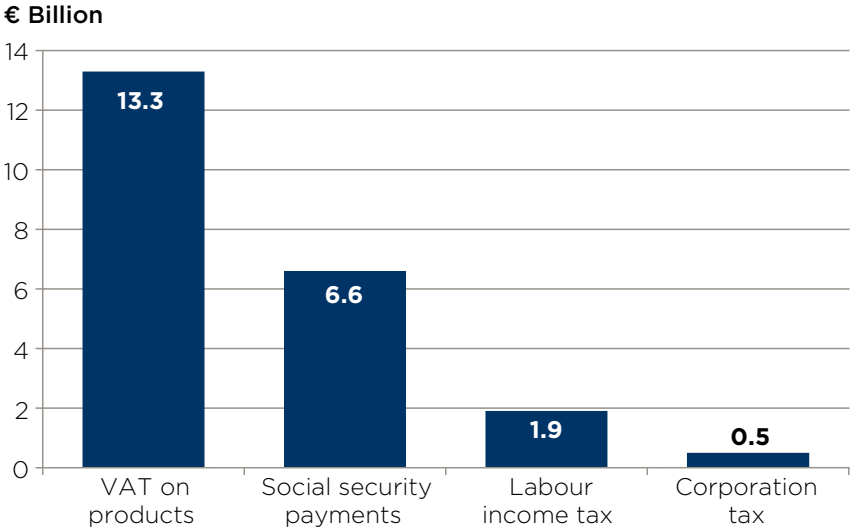
David Fischer, Founder, Highsnobiety

Fig. 13: Average labour productivity (GVA per worker), 2019



Source: Eurostat, Destatis, Oxford Economics

Fig. 14: Direct contribution to German tax revenue by type of tax, 2019



Source: Eurostat, Destatis, Oxford Economics

3.3 OTHER DIRECT IMPACTS

As well as the impacts arising from fashion distribution and manufacturing, further economic activity is supported in sectors such as fashion marketing, magazines and education.

3.3.1 The direct impact of marketing and advertising

By helping other segments of the fashion industry market their products and build brand recognition, advertising plays an important role for many companies operating in the sector. Retailers, in particular, are large users of advertising services, fuelling an estimated 76% of fashion advertising revenues. The remaining 24% of fashion advertising output comes from the wholesale and the manufacturing sectors.

In 2019 the advertising sector's activities within the fashion industry supported €640 million in German GDP. More than a third of this contribution came from advertising for womenswear, while advertising for menswear and footwear accounted for 22% and 16% of the impact respectively. Employment of approximately 15,000 was also supported in the sector.

3.3.2 The direct impact of fashion magazines

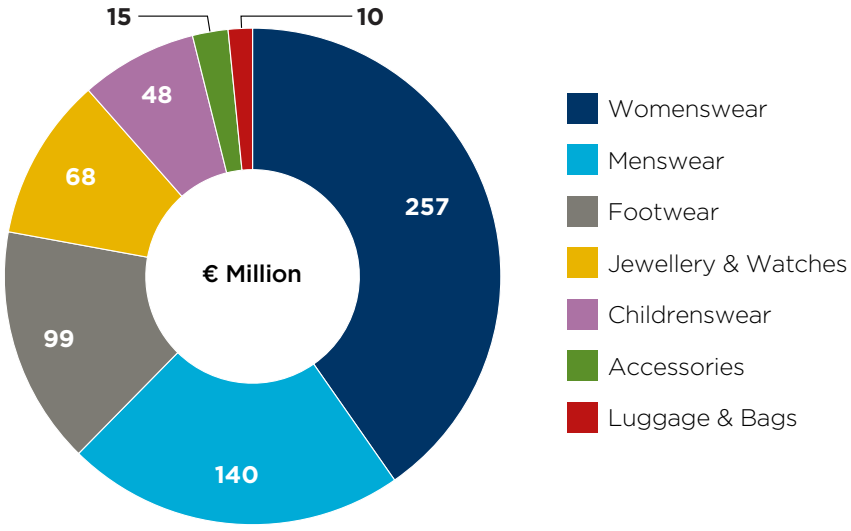
Fashion magazines are another facet of the industry, logistically separate from retail and production, but closely linked in terms of the topics of written content produced.

For this study, we have estimated the economic impact of the 11 most important German fashion publications identified by the German Fashion Council.[27] Together, these magazines sold more than 36 million copies in Germany in 2019, generating an estimated €364 million in sales and advertising revenue. We estimated that this economic activity directly contributed €156 million to German GDP and supported employment of 2,300.

3.3.3 The direct impact of fashion education

By training new designers and other textiles and clothing specialists, higher education institutions also play an important role in the fashion industry. The quality and importance of Germany's fashion schools is highlighted by the Federal Foreign Office, who note that the majority of Europe's fashion designers are trained in Germany's 40 fashion schools.[28]

Fig. 15: Direct GVA impact of fashion advertising in Germany by product group, 2019



Source: Eurostat, Destatis, Oxford Economics

[27] The publications for which we've estimated an economic impact are Brigitte, Cosmopolitan, Elle, Glamour, GQ, Grazia, Harper's Bazaar, Icon, InStyle, Madame and Vogue.
[28] Deutschland.de, Study in Germany: Fashion, 2018

Fashion education's economic contribution can be measured by the salaries of the staff involved in teaching fashion subjects in German higher education institutions. To estimate this amount, we used higher education statistics for the subjects *Textile Design* and *Textile and Clothing Technology/Industry* as the courses most related to fashion education. These higher education subjects had nearly 800 first-year students enrolled in 2019/20 (down from 1,200 earlier in the decade), and nearly 6,000 students across all years and degree types.[29]

Combining the total number of students on fashion degree courses with estimates of average class size and average academic pay suggests that academic wages—i.e. the value added of the fashion education sectors—amounted to €17.9 million in 2019, across 300 academic jobs.

"I believe that the German retail sector is incredibly important for the inner-city environment, more must certainly be done to support it."

Dieter Holzer, CEO, Marc O'Polo

3.4 THE TOTAL IMPACT OF THE FASHION INDUSTRY

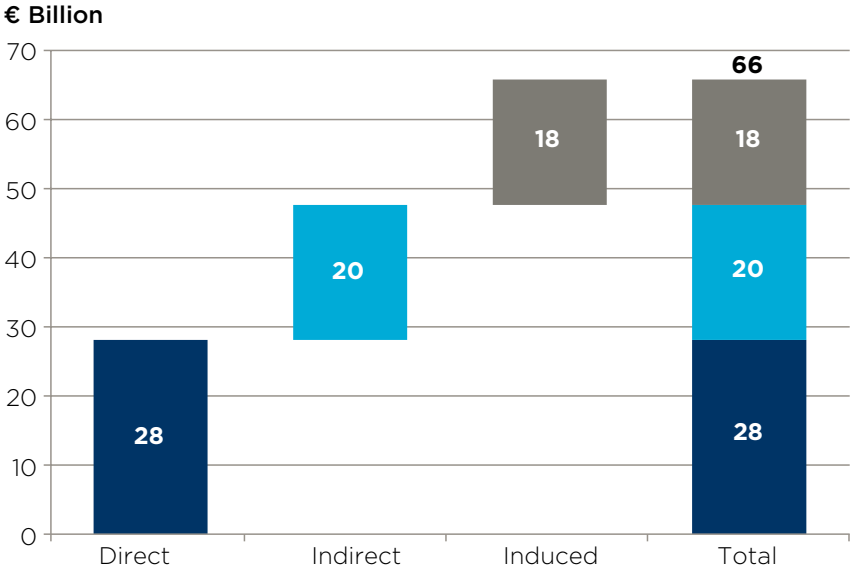
The impact of the German fashion industry on the economy is not limited to its direct contribution. To provide a more complete picture, the supply chain ("indirect") impact and the consumer spending ("induced") impact need to be considered. In this section, we present our estimates of the total impact of the industry on the German economy.

3.4.1 Total impact on GDP

Across the three impact channels, the German fashion industry supported €66 billion in GDP in 2019. Out of this total, €28 billion was supported by the industry directly through the manufacturing and distribution of fashion products (€27 billion), as well as fashion advertising, magazines and education (a further €1 billion). The sector's procurement spending supported a further €20 billion throughout its supply chain. The wage spending of the industry's workers, and of the workers it supports throughout its supply chain, contributed a further €18 billion to German GDP.

This means that for every €100 contributed directly by the industry, a total of €235 is supported across the economy.

Fig. 16: Total GDP contribution by the German fashion industry, 2019



Source: Oxford Economics

[29] Destatis, *Institutions of higher education; statistics of students* database

3.4.2 Total impact on employment

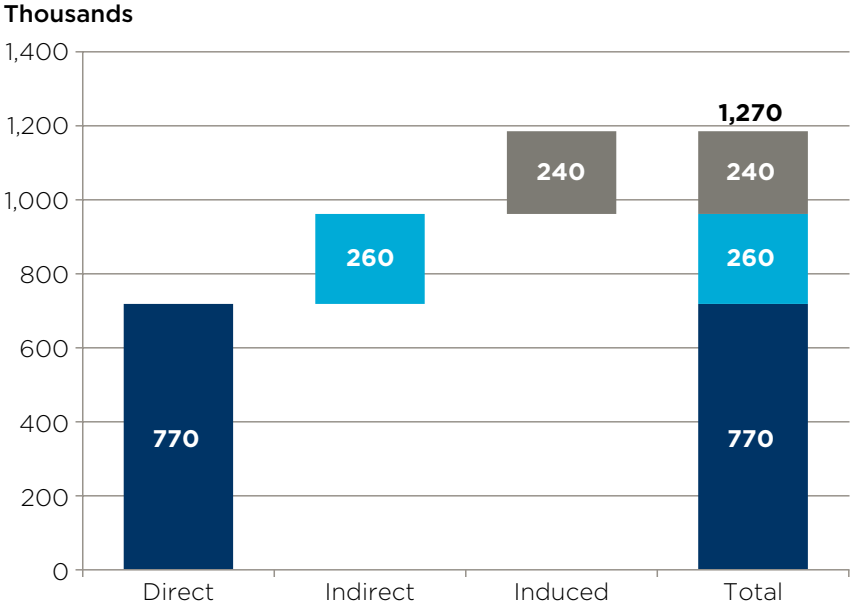
In 2019, the German fashion industry supported employment of close to 1.3 million. With 770,000 workers employed directly by the industry (750,000 across production and distribution, and close to a further 20,000 across fashion advertising, magazines and education), the direct employment impact represented more than 60% of the total. Another 260,000 individuals were employed throughout the industry's supply chain, while 240,000 workers were in jobs supported by the consumption spending of direct and indirect employees.

This means that for every 100 people employed directly by the industry, total employment of 160 is supported across the economy.

3.4.3 Total impact on tax revenues

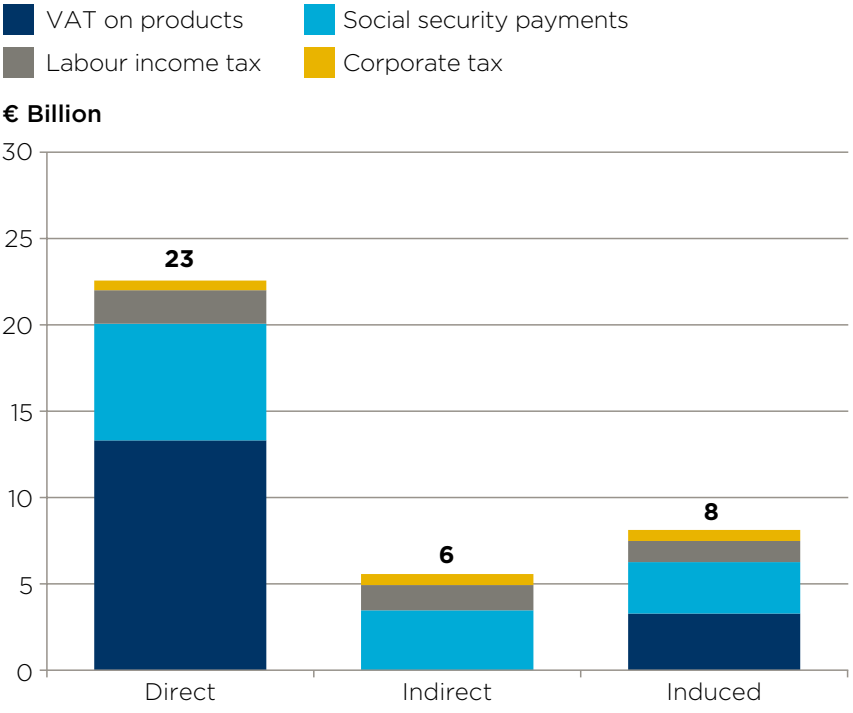
The German fashion industry supported a total of €36 billion in tax revenue in 2019 across the direct, indirect and induced channels. VAT paid by fashion consumers, and by workers across the sector and its supply chain, accounted close to half of the total. Taxes on labour also made an important contribution to total tax payments, with social security and labour income tax accounting for 36% and 13% of the total respectively.

Fig. 17: Total employment contribution by the German fashion industry, 2019



Source: Oxford Economics

Fig. 18: Total contribution to German tax revenue by type of tax, 2019



Source: Oxford Economics

Totals do not sum due to rounding

WORLDWIDE SALES OF THE LARGEST GLOBAL FASHION BRANDS

Analysis from industry body TextilWirtschaft looks at the largest 175 European fashion brands and their worldwide revenue. We have grouped these companies by their country of origin in the table below. These statistics suggest that German fashion brands had the second-highest global sales of firms in the top 175, with 51 compared to France's 17, the largest (adidas Group) contributed nearly a third to the total revenue for German brands.

Fig. 19: Worldwide sales revenue by 175 largest European fashion brands, grouped by country of origin, top 10 country results[30]

Rank	Country	Count of brands included	Sum of sales revenue, 2019, €m
1	France	17	66.0
2	Germany	51	55.8
3	Spain	5	32.5
4	Italy	52	30.8
5	UK	20	22.7
6	Sweden	3	22.4
7	Ireland	1	8.9
8	Netherlands	7	6.6
9	Switzerland	8	5.7
10	Denmark	3	4.1

Iain Brown

CIRCULAR BUSINESS MODELS – FASHION'S NEW PARADIGM

Provided by Karl-Hendrik Magnus, Senior Partner and leader of McKinsey's apparel, fashion, and luxury group in Germany; Felix Rölkens, Associate Partner and core member of the group, and David Barrelet, Consultant and member of the group.

Amid rising pressure to operate more sustainably, the fashion industry has started to engage with circular business models such as resale and recycling. However, progress has been slow. Today, less than 1% of the material in clothing is recycled, dwarfed by other industries such as paper, where recycling rates are up to 72%.[31] The current situation presents a challenge for fashion companies but also offers an opportunity, both to engage more closely with customers and to add value to the bottom line.

Europe produces around 2 million tonnes of textile waste a year, or 5.5 kilos per person.[32] Germany alone is responsible for around 400,000 tonnes of waste annually, second only to Italy. Across Europe and the wider world, the vast majority of discarded clothes are incinerated or go to landfill. One reason for the scale of this waste is that the fashion industry uses a high-volume operating model that is arguably the antithesis of sustainability. Fashion consumers operate in a similar way, tending to favour either luxury items or disposable fashion. This in turn leads to overproduction and more waste. Indeed, garment production volumes are predicted to grow by 2.7% annually between now and 2030.[33]

Despite high levels of production and consumption, consumers increasingly wish to reflect their sustainability values in their fashion purchasing decisions. In a recent McKinsey survey, more than 60% of consumers said a brand's promotion of sustainability was an important factor in deciding whether or not to buy.[34] Consumers are concerned about all aspects of sustainability, from the supply chain to packaging, but their sharpest focus is on materials, which they want to see produced using sustainable processes.

The good news for fashion companies is that these dynamics can be effectively managed, and potentially harnessed for commercial advantage. To get there, companies must embrace six principles of circularity: reducing (emissions, waste and volumes), recycling, refurbishing, reselling, renting and repairing. Each of the six "Rs" can help companies align more closely with consumer—and increasingly investor—expectations. In addition, loops of use and reuse can create a multiplier effect that can build value, if used effectively.

Change rarely happens all at once though. This is apparent in fashion, with a few brands pioneering or scaling up circular business models, while others hold back. One pioneering example is adidas's fully recyclable footwear due for launch in 2021, which can be worn, returned, and recycled into new running shoes. This follows other innovations from the company, such as producing 11 million pairs of shoes in 2019 from recycled ocean plastic. The company has also committed to using only recycled polyester in every product by 2024.[35]

Another company to embrace circularity is Berlin-based Zalando, a digital fashion marketplace. Zalando announced a "pre-owned" category in February 2020 that allows customers to shop for pre-owned items or sell their own articles to the company.[36] To facilitate this, Zalando has set up a reverse logistics process, carrying out quality checks on pre-owned products before then reselling them on the same terms as new clothes in terms of delivery, right of return and payment options.[37]

Alongside the efforts of these large businesses, a wave of young German brands is shaking up the status quo by putting sustainability at the center of their business models. Cologne-based Airpaq, for example, produces upcycled backpack and accessories from car airbags and seatbelts.[38] Munich-based Bewoodz is a sustainable eyewear brand that uses natural materials and prioritises ethical production, animal welfare, and eco dyes and printing. In the same vein, Friends That Rhyme manufactures handbags from vintage fabrics.

[31] Paper Mart, *European Paper Recycling Rate Increased to 72 percent in 2019*, July 2020
[32] LABFRESH, based on data from 15 European countries
[33] McKinsey & Co, *Fashion on climate,* 2020
[34] McKinsey & Co, *Consumer sentiment on sustainability in fashion*, 2020
[35] Adidas, *Adidas Unlocks A Circular Future For Sports With Futurecraft.Loop*, 2019
[36] Zalando, *Zalando announces pre-owned category*, 2020
[37] Die Welt, *Mit der Secondhand-Idee will Zalando den Umwelt-Makel Loswerden*, 2020.
[38] Eco Lookbook, *Ethical and Sustainable Fashion Labels in Germany*, 2020

Despite these examples, the industry as a whole faces challenges in turning circular principles into workable strategies. One challenge relates to taking back used items, which remains a logistical stumbling block for many companies—particularly those with fragmented geographic footprints. One solution is to use specialist reverse logistics companies, which can recover items from disposal or secondary resale. US clothing company Patagonia, for instance, works with start-up Trove to buy back items and sell them at a reduced price. Trove handles purchasing, processing and pricing so that second-hand items are ready to be sold alongside new collections. A similar operating model can work for clothing rentals, with third parties managing the entire process, from warehousing and cleaning garments to managing customer feedback.

The root cause of circularity shortfalls often lies in the design process, which may fail to take into account the durability or recyclability essential to making circularity work. To obtain the maximum value from products, designers will need to think more about extended lifespans and less about the norms of high-volume production.

At the same time, decision makers should consider how to further engage and educate consumers. For younger consumers, born into digital interactions and heightened environmental awareness, circular fashion makes sense. However, many older consumers may need encouragement and advice to make the switch. The onus, therefore, is on the industry to meet the needs of the younger cohort and to engage more closely with those needing a helping hand. By enabling resale, recycling and repair—for example through in-store mending stations—the industry can support consumers in making circularity integral to their fashion decisions. Alongside those efforts, fashion companies throughout the value chain should collaborate to make the necessary investment in automation and infrastructure needed for sustainable processes. In a time of change, it is often those that make the boldest commitments that realise the richest rewards.

Vicky Lehmann

4. STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

"The strength of the German fashion industry is its technology, know-how and human capital."

Prof. Dr. Phil., Dipl.-Des Marina Wachs, Industrial Designer and Professor, Hochschule Niederrhein University of Applied Sciences

Our economic footprint analysis provides a static viewpoint; a picture of the impact of the fashion industry at one point in time. To understand the industry from a more dynamic perspective, we asked industry experts about the outlook for the sector, drawing on its strengths and weaknesses. We talked to 44 major figures within fashion brands, fashion fairs, retail, media and other areas (see Appendix 1 for a list of interviewees). These interviewees were selected so as to cover as broad a range of the different aspects of the fashion industry as possible, to gain a thorough understanding of the issues being faced.

We used these responses, in conjunction with findings from a literature review, to conduct an analysis of the industry's strengths, weaknesses, opportunities and threats—also known as a SWOT analysis.

OVERVIEW OF STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

- **Strengths:** The German fashion industry enjoys an international reputation for quality, reliability, and value. The country is also noted for its technologically-advanced approach to fashion, including technical textiles and advanced clothing and textile manufacturing equipment. Its large home market is a positive for German businesses as it is possible to achieve a high volume of sales domestically.
- **Weaknesses:** Interviewees expressed concern that the German fashion industry suffers from a relatively low level of visibility on the world stage, despite its reputation for quality and value. Its sports brands and a few other labels are internationally recognisable companies, but overall, there are comparatively few world-famous German fashion brands. Stakeholders noted that this may be in part because the country has its speciality in functional clothing, with less of a modern tradition than other countries have for the avant-garde designs that draw attention at international shows. These characteristics, combined with a greater trend for outsourcing production than in Italy, say, contribute to the country's difficulties in retaining and attracting design talent.
- **Opportunities:** Germany's specialty of producing quality workmanship and advanced technical textiles provides it with a relatively unique offering that it can take to new markets, including emerging economies. This may be particularly the case when it comes to the growing trend towards sustainability, which means customers buying fewer, higher quality items that will last a long time. Germany's innovation includes development of "smart" textiles that can sense and react to environmental stimuli (such as changing colour or thermal properties)—this area is predicted to be a major global growth area over the medium term.
- **Threats:** to maintain global market share Germany will need to continue to invest to stay at the forefront of the fashion technologies in which it has its niche, as emerging markets mature in this area. In particular, China is likely to become a strong competitor in technical textiles and the production of textile manufacturing equipment over the medium term. Global crises (such as COVID-19) and trade wars that affect supply chains are a threat to the German fashion industry, which is one of the world's largest importers and exporters of clothing and textiles.

ABOUT SWOT ANALYSIS

SWOT analysis provides a framework to assess current industry trends and gain insights into key future risks that are likely to shape market outcomes. Strengths and weaknesses refer to internal factors which are likely to influence the German fashion industry's response to external threats and opportunities. An overview of the framework of SWOT analysis is provided in the figure below. Following identification of the themes that populate each area, it is possible to draw conclusions as to the best strategies for the industry.

Fig. 20: The SWOT analysis framework

	Strengths (internal)	Weaknesses (internal)
Opportunities (external)	How do I use these strengths to take advantage of the opportunities?	How do I overcome the weaknesses that prevent me taking advantage of these opportunities?
Threats (external)	How do I use my strengths to reduce the likelihood and impact of these threats?	How do I address the weaknesses that will make these threats a reality?

4.1 STRENGTHS

Reputation for quality and reliability: A high proportion of respondents referenced the quality of German-made clothing as one of the fashion industry's core strengths. Reference was made to both the quality of workmanship and the materials used, with many noting that Germany is known for providing good value for its clothing. Respondents also noted that German companies in the sector are reliable business partners in terms of delivering on time and to a consistent level of quality.

Advanced technology: Germany's textile research institutes and university departments were noted as an example of how the country drives global innovation in fashion and textiles. This extends to Germany's position as a producer of textile manufacturing machines, including innovations such as 3D knitting machines, and digital design techniques. The technical "know-how" of companies in the industry was given as a strength for the industry, with the depth of this knowledge setting the German fashion industry apart from those of other countries, particularly in the area of technical textiles. In part this is due to the country's strong links between universities and textile research institutes.[39]

Strong home market: The fact that Germany has one of the largest markets for fashion in the world was identified as a key strength for domestic companies. This means there is a ready source of potential demand to grow a new company without the challenges of having to look outside the country's borders.

Well-known global sports brands: Germany's global sports brands, such as adidas and Puma, were seen as strong ambassadors for German fashion on the world stage. Other examples given of well-known German brands included Hugo Boss, as well as Karl Lagerfeld and Jil Sander on the creative side of the German industry.

> **"Germany is very far ahead in the world market for technical textiles and technical fibers."**
>
> ***Holger Max-Lang, President, Northern & Eastern Europe, Middle East, Lectra Deutschland GmbH***

[39] Forschungskuratorium Textil, *Perspektiven 2035*, 2020

4.2 WEAKNESSES

Lack of government support and low international visibility: Despite Germany's fashion and textiles industry being a large contributor to employment and to the economy, respondents felt that it is not supported and promoted in the same way as some other industries, for example the automotive sector. Although Germany does have world-famous sports brands to advertise the industry, respondents believed that this lack of government support and promotion means that the country's fashion industry generally has a low level of visibility on the world stage. Furthermore, German brands may not even be celebrated domestically: Vogue notes that among the top 50 most-searched-for fashion brands in Germany on Lyst (a global fashion search platform), only five are of domestic origin.[40]

Design is more functional than creative: While German fashion is seen as a leading example of quality and value for money, many respondents stated that it lags behind in the creativity of its designs, and that the sector's outputs do not have the same level of creativity as that of other countries with large fashion sectors. This factor contributes to the previous point—the relatively limited international profile of German designers means there are fewer stars to act as international figureheads for the sector. Functional design at a middle-market price point is a key source of demand in Germany's fashion industry: average spend per year on clothing is lower in Germany than other major European countries, and in fact Germany is the largest market for H&M (a lower price point clothing retailer).[41]

Difficulty in retaining design talent: There are many fashion schools in Germany training a large number of designers each year. However, there is no single school with as strong a brand as the highest-ranking schools in some other countries, with respondents citing Central Saint Martins in London as an example of a school brand that attracts future German designers to leave the country. This is contributing to something of an emerging skills shortage, as young designers may be more inclined to study and remain abroad. Similarly, for those that do study in Germany, the higher number of world-famous brands in other countries acts to draw domestic talent overseas.

Outsourced / offshored production: As previously discussed, Germany has been outsourcing or offshoring the physical production of its designs for a long time. While using global procurement chains is also a trend in other European countries, Italy for instance also has a larger share of local production, and respondents believe that outsourcing has now reached a level that is harmful to innovation. For instance, offshoring means that it is much harder for a textile engineer to work alongside a tailor to develop new products. In addition, outsourcing is contributing to skills shortages in craftsmanship for those that do want to produce domestically.

Digitalisation: Respondents noted that many German fashion companies have not yet engaged significantly with the digitalisation of the fashion industry, including through online retail sales, with many firms struggling as a result. However, respondents believed that the COVID-19 health crisis is forcing many companies to evolve in this regard.

There are difficulties in the digital marketplace specifically for small businesses in Germany. Michael Kliger, chief executive of German luxury fashion retailer Mytheresa notes that German consumers prefer to shop on online "platforms" rather than individual mono-brand websites.[42] This raises potential barriers to entry for any small businesses and start-ups that cannot get their products onto the popular platforms, such as Zalando. German online shoppers also have the highest return rates in Europe, expect delivery within 3-5 days and expect free returns,[43] again increasing costs that smaller retailers may find difficult to deal with.

[40] Vogue Business, *Why Germany's fashion market is hard to crack,* 2019
[41] Vogue Business, *Germany's eco-conscious shoppers are still addicted to fast fashion,* 2019
[42] Drapers magazine, *Entering the sophisticated and stable German market,* 2019
[43] Essential Retail, *Retail country in focus: Germany,* 2016

4.3 OPPORTUNITIES

Sustainable fashion: A definite trend towards sustainability is emerging among consumers. Demand is shifting away from "fast fashion" and towards buying fewer, higher quality pieces. Germany's reputation for quality means it is well placed to capitalise on this trend. Respondents also noted that Germany has a well-developed recycling infrastructure and so may be in a good position to effectively manage the end stage of each garment's life cycle.

Smart textiles: Textile industry forecasters agree that the market for smart textiles is likely to see very strong growth in the short and medium term, with average annual growth rates projected of over 10%.[44] Our respondents note that Germany is a driver of innovation in smart textiles, with universities in the process of developing new technologies in this area. As such, the German fashion industry looks to be in a good position to capitalise on this trend.

Expansion into growth markets: Respondents note good opportunities to sell to higher growth markets such as China and Russia, and that there is room for growth in Eastern Europe. South America and Africa are also noted as being strong growth opportunities as customers there may be more open to trying new brands than in more established markets. Further use of digital platforms to sell to overseas customers is seen as a strong opportunity to harness this growth.

4.4 THREATS

Competition from emerging markets: While emerging markets offer the opportunity for a new source of demand for German fashion products, economic development in these countries also means expansion and increased maturity of clothing and textile design, manufacturing, and research industries. Respondents noted German companies will need to continue innovating to avoid losing global market share. China in particular is likely to become a key competitor with Germany in the production of technical textiles and textile manufacturing equipment by 2035.[45]

Trade restrictions: Respondents noted that trade wars pose a potential threat to German exports and supply chains. Brexit was also noted as likely to impact on demand for German products, as the UK is in the top 10 largest markets for German clothing exports.

Rising cost of inputs: A rise in the price of energy and other inputs such as water would put further pressure on the financial ability of German companies to produce clothing domestically. The global fashion industry is one of the largest producers of greenhouse gas emissions, due in part to its energy-intensive production processes. The global trend of introducing carbon pricing measures would impact the sector. For instance, carbon pricing begins for the heating and transport sectors in Germany in 2021, with the price rising through the decade.[46]

Slowing growth at home: Germany has an ageing population and the UN's medium-fertility forecast expects the country's total population to peak at 83.9 million in 2021,[47] before declining to 82.0 million by 2040. As such, prospects for domestic growth in the fashion industry may be relatively limited over the long run for German firms.

> **"In the exhibitor presentations at our global textile trade fairs, we see the highest level of innovation in the German textile industry: technology, performance and quality."**
>
> ***Olaf Schmidt, FCG Executive Board Member and Vice President, Messe Frankfurt***

[44] For example: Business Wire, *Smart Textiles Market Trends and Growth Opportunities, 2020-2025*
[45] Forschungskuratorium Textil, *Perspektiven 2035,* 2020
[46] Clean Energy Wire, *Germany's carbon pricing system for transport and buildings,* 2019
[47] United Nations population division, *World Population Prospects 2019,* medium-fertility variant forecast.

4.5 CONCLUSION OF SWOT ANALYSIS

Assessing how the strengths, weaknesses, opportunities and threats are interlinked enables us to draw out how the industry can take advantage of opportunities and minimise the risk from threats. These are then translated into actionable recommendations in Chapter 6.

The strength of the German fashion industry's reputation for high quality, as well as the leading-edge output of its textile research programmes, mean that it is well placed to take advantage of the opportunity that emerging markets present. Putting emphasis on this strategy would also allow it to mitigate the long-term risk of slowing growth in the domestic market.

However, to truly capitalise on export opportunities the industry will need to address the identified weakness of relatively low visibility in the international fashion marketplace, with support from government and industry associations to establish a more recognisable global brand for German fashion. In part this may require generating, attracting, and retaining more design talent and producing more creative output to grab attention.

Moving further into sustainable fashion also plays to Germany's strengths of developing and innovating new textile types. It may also help to mitigate the risk of rising input prices, if research can produce less resource-intensive processes and materials uses. There is an opportunity for Germany to continue to position itself as one of the world's top sources for sustainable fashion.

ODEEH Tim Sonntag

HOW SUSTAINABLE AND DIGITAL TRANSFORMATION SUCCEED AT THE SAME TIME

Provided by Nicole Stein, Tech Entrepreneur and Researcher, Virtual Fashion and Digital Value Creation at studioMM04

Sustainability and digitalisation have been widely identified as clear macro trends in the fashion industry. However, digital innovations are not necessarily inherently sustainable. Indeed, a lot of recognised activities in the context of sustainability, such as eco-fashion brands or upcycling movements, are often low-tech efforts. Conversely, many digital technologies actually require elevated resource and energy demands and can even negatively affect waste management.[48]

Online shopping is a prime example of digital activity in the fashion industry, yet it is far from sustainable. Germany's fashion e-commerce (clothes and shoes) achieved a staggering €18.7 billion revenue in 2019, outperforming categories like electronics.[49] The ongoing growth of eCommerce in the fashion segment and related technological innovations are a great example of both evolving digital operations and the connected struggles for sustainability. Yet the transportation phase alone in the textile value chain is responsible for 5% of the fashion industry's emissions[50]—and rising with the accelerated growth of online shopping.

In consequence, discussing sustainability and digitalisation separately does not help to achieve the long-term goals of the fashion industry, but widens the gap between economic efficiency and growth ambitions on the one side and environmental impact and social concerns on the other.

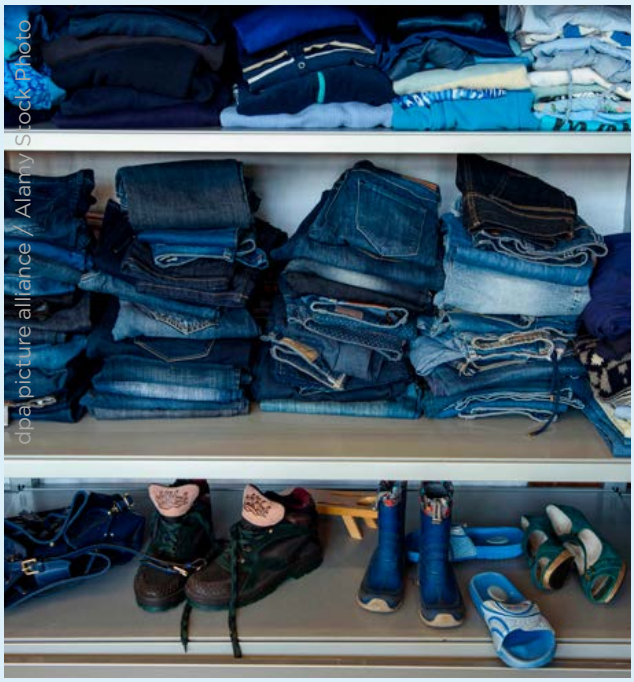
Digital transformation and technological innovation create opportunities for new sustainable business models based on circular economy principles.[51] A circular economy is a systemic approach that requires adaptation throughout the value chain to preserve natural resources, re-introduce waste via recycling, and initiate change in consumer behaviour.[52] Digital technologies serve as an enabler for the implementation of a circular economy as they support the necessary data capture and analysis throughout the value chain.[48] Data's relevance to sustainability is evident when considering the complexities of value chains. Technologies such as AI can support logistics and the sorting of goods, for instance, but also predict demand by combining historical and real-time data.[53] This predictive feature of AI

karelnoppe/Shutterstock.com

[48] ECERA, *Digital circular economy – a cornerstone of a sustainable European industry transformation*, 2020
[49] Statista, *Umsatz im Online-Modehandel in Deutschland in den Jahren 2006 bis 2019*, 2020
[50] Joint Research Centre (Ispra, Italy), *Environmental improvement potential of textiles (IMPRO-Textiles)*, 2014
[51] Futuring, *Policy recommendations and strategy to re-industrialise Europe*, 2018
[52] European Environment Agency, *Paving the way for a circular economy: insights on status and potentials*, 2019
[53] Banks et al, *Artificial intelligence and the circular economy – AI as a tool to accelerate the transition*, 2019

can support the implementation of circular economy principles and facilitate decision-making processes regarding production, inventory, and waste management.

Sustainability and digitalisation must be considered as symbiotic: this will help identify ways to make the digitalisation of fashion sustainable, and for sustainable fashion to be successful in a digital world. The German fashion industry is advised to make use of this excellent opportunity and position itself as a frontrunner at the intersection of sustainability and digitalisation.



One major challenge remains the lack of an established notion of sustainability—not only in the fashion industry but also in academia and political discussions. This lack of an accepted definition hinders large-scale implementation and reduces science-based targets to hardly-enforceable theories. Neglected aspects such as social impact and cultural and artisan value are worth exploring and have the potential to influence the understanding of sustainability and its acceptance in both industry and civil society. In this context, the German fashion industry can actively shape a refined understanding of sustainability and to develop a competitive but relevant edge by educating a new generation of experts on the synergies of sustainable and digital fashion.

Virtual fashion has the potential to reduce textile production

One new area of the fashion industry is "virtual fashion" or "digital clothing", which relates to digital apparel design, material simulation, and creating garments for digital models or "avatars".[54] This new area is expected to grow rapidly to ultimately reach 1% of the entire fashion industry's annual output.[55] But virtual fashion is more than a gimmick for gamers or technology innovators: it has the potential to support sustainability efforts.

More than half of the fashion industry's harmful effects on the environment are attributed to textile production.[50] In particular, energy used during the processing of raw materials and manufacturing of textiles is one of the largest environmental impacts of the production process[56] and as such, virtual fashion is a promising technological opportunity to reduce the industry's environmental impact. For instance, actual textiles are used in the existing garment prototyping process, resulting in supply and budget constraints. The fashion industry could overcome these by allowing designers and brands to test different fabrics virtually, reducing cost and waste in the early development process. Furthermore, it could use virtual fashion can be used to address overproduction by enabling the consumer to experience garments through realistic simulations using their individual measurements.[57] This enables real-life stock to be minimised and production to reach on-demand efficiency.

As researchers emphasize, merging virtual and real-life contexts is key to the successful application of virtual reality.[58] Virtual fashion can become a key trend to decrease both production volumes and the size of consumers' wardrobes, and offers various applications in commerce and communication, such as on social media. Applying digital innovations to the fashion industry is the perfect way to harness its creativity and passion while securing its sustainable future by reducing both waste and pollution.

[54] Sayem, *Virtual fashion ID: a reality check*, 2019
[55] Now Fashion, *Virtual fashion from gaming to the runway*, 2020
[56] European Environment Agency, *Textiles and the environment in a circular economy*, 2019
[57] Volino et al, *From early virtual garment simulation to interactive fashion design*, 2004
[58] Sherman and Craig, Understanding virtual reality – interface application and design, 2003

5. LONG-TERM ISSUES FOR THE FASHION INDUSTRY

Beyond the short-term flow of new trends in the fashion industry, two fundamental trends are emerging:

- greater demand for sustainable apparel manufacturing and supply chain transparency; and
- a greater emphasis on innovative new materials and production technologies, including more eco-friendly textiles and more energy-efficient processes.

In this chapter, we look at these issues in more detail, using evidence gathered from our interviews with industry experts and from published literature.

"Innovation in sustainability concepts will be the future driver of success within the sports wear industry. Compared to the past, sustainability and design need to go more hand in hand as the consumer won't compromise on style."

Heiko Desens, Global Creative Director & Innovation, Puma

"Awareness of sustainability issues is growing, but it comes back to that point of how much we are willing to invest."

Inga Griese, Senior Editor Style, ICON magazine

5.1 SUSTAINABILITY

Sustainable apparel sourcing at a large scale is this season's "must have" according to fashion industry chief purchasing officers,[59] with sustainable materials and supply chain transparency ranked as the most important factors to consider.

Germany has a history in sustainable fashion. The company Hess Natur is often cited as being a global pioneer of organic cotton in the 1970s, and as a spokesperson for the Confederation of the German Textile and Fashion Industry noted, "the social and ecological standards of the German textile and fashion industry are among the highest in the world."[60]

German consumers report being concerned about the impact that the fashion industry has on the environment: in 2018, 82% of those surveyed agreed that it is important that fashion brands tackle climate change, and 88% thought that fashion brands should tackle environmental protection.[61] However, that concern does not necessarily translate into behaviour: only 33% of Germans considered the environmental impact of a clothing item before deciding whether or not to purchase it.[62] In 2020, Germans reported that they would be willing to pay more for a sustainably-produced white cotton t-shirt than a basic one, but only approximately €4 more, which as Vogue puts it, "signals a lack of awareness around the costs involved" in producing sustainable garments.[63] In fact, German fashion shopping habits reveal a preference for cheaper, "fast fashion" products: the country is the largest market for H&M, an international fast fashion retailer.

There are signs however that these shopping and consumption habits may be changing, with the COVID-19 health crisis appearing to have a significant impact on fashion purchasing behaviours. Nearly two thirds (64%) of German and UK consumers surveyed[64] reported that they had decreased their spending on fashion as a result of the crisis, including 40% noting a "large" decrease in spending. Whether or not this change in behaviour will continue for the longer term remains to be seen, but the intention is there: once the crisis is over, 57% expect to repair damaged clothing rather than buying a replacement; 65% expect to buy more high-quality items that last longer; and 71% expect to throw out fashion items less often.

[59] McKinsey & Co, *Apparel CPO Survey*, 2019
[60] Die Welle, *Fashion's eco-sins: In search of sustainable clothing*, 2018
[61] Fashion Revolution, *Consumer Survey Report*, November 2018
[62] *Ibid.*
[63] Vogue Business, *How much more would you pay for a sustainable T-shirt?*, 2020
[64] McKinsey & Co, *Survey: Consumer sentiment on sustainability in fashion*, 2020

The stakeholders that we interviewed drew similar conclusions: German consumers say they want more sustainable products but are unwilling to purchase them unless they are attractive, desirable and reasonably priced. However, our respondents noted that attitudes to sustainability have started to change among businesses in the German fashion industry. This trend is expected to continue as younger consumers, for whom sustainability may be of greater concern, place additional pressure on the industry to transform.

Examples of sustainability-focused initiatives already being implemented by businesses include:

- using more sustainable materials, such as fabric made from recycled plastic and organic cotton;
- reducing waste by ensuring leftover textile is used for other purposes rather than being discarded;
- magazines promoting sustainability through articles on vintage fashion, recycling and repairing;
- companies producing their own electricity and reducing water usage, and
- reducing the size of new collections and changing collections less frequently.

Respondents also discussed longer-term sustainability trends. These included the idea of on-demand manufacturing: rather than producing a large amount of clothing and then trying to sell it, on-demand manufacturing would allow consumers to customise their purchases to a greater extent than is now possible, at the expense of having to wait longer for it to arrive. Currently these production methods are likely to be more expensive than existing techniques, in part due to smaller production batches, although this could change if volumes increase. Some companies are already looking into this globally: for instance, it was widely reported in 2017 that Amazon had a patent approved for an on-demand apparel manufacturing warehouse.[65]

Respondents also suggested that sustainability in the fashion industry must mean people buying much lower volumes of clothing. Designers will need to respond to this change to survive, potentially by reducing the number of collections and changing existing fashion cycles. Fashion industry analysts expect new business models to emerge in response to this trend, such as clothing rental services for leisure and sportswear.[66]

A further issue raised by our interview respondents was whether the globalised nature of the fashion industry was the best way forward, given the emissions caused by transporting heavy shipments over long distances. The question was raised about whether a trend towards supporting more localised supply chains will start to emerge.

[65] Fashion United, *Future of Fashion: Production - sustainable, high-tech and on-demand,* 2019
[66] Forschungskuratorium Textil, *Perspektiven 2035,* 2020

5.2 TECHNOLOGY AND INNOVATION

There are many ways in which technological innovation intersects with the fashion industry, whether through new design approaches enabled by the latest software; innovations in textile and material manufacturing technology; or the way that fashion customers can interact with retailers. Each of these themes is growing increasingly central to the industry, for instance as customers demand a more digitally-integrated sales experience, or as trends towards sustainability necessitate new materials. Our interviewees highlighted the most important drivers of innovation in the German fashion industry as being "the urgent need for sustainability", consumer expectations, and cost pressures.

"Germany has an excellent reputation, especially for technical fabrics and for fibres."

John Cloppenburg, CEO, Peek und Cloppenburg

In 2018, global fashion industry executives identified technology-related issues as the most important factors they face,[67] and some analysts now expect the focus of global fashion R&D to be increasingly on the materials science required for developing new fibres, textiles and finishes.[68] Germany is a significant contributor to global research in this area: in a review of 31,000 scientific papers published between 2016 and 2019 under the key word "textiles", Germany produced more than any other European country, and was fourth in the world behind China, the US and India.[69] Breaking these results down by individual organisation shows that while the institutions with the five largest publication numbers were all in mainland China or Hong Kong; RWTH Aachen University and Dresden University of Technology were in 6th place and 7th place respectively.

One particular sub-set of fashion textile innovation is in the area of "smart textiles" or "electronic textiles"—an area that is expected to grow rapidly. There are three commonly-used categories of smart textiles:

- "passive smart", which use sensors to record data on the user's environment, with uses in sports clothing for instance, or in medical applications;
- "active smart", which also contains actuators to react to stimuli, such as to change colour, waterproofness, or insulation and heating properties;
- "ultra smart", which react and adapt, learning as they go through artificial intelligence.[70]

A common theme that came up in our interviews was how Germany is already an innovator in this area and so is well placed to benefit from this growth trend.

[67] McKinsey & Co., *The State of Fashion 2019*
[68] McKinsey & Co., *The State of Fashion 2020*
[69] Forschungskuratorium Textil, *Perspektiven 2035,* 2020
[70] International Journal of Engineering Technologies and Management Research, *Smart Fabrics-Wearable Technology*, 2017

Another key technology trend noted by respondents is that of 3D fashion design and manufacturing. This is a trend that has started to emerge over the last few years, brought to the world's attention at a 3D fashion show in 2016, which was part of that year's Platform Fashion event in Düsseldorf. The show, presented by car manufacturer Lexus and local start-up Voxelworld, included pieces by designers from around the world created with the use of computer-aided design software and 3D printers.[71] This new technology is expected to "revolutionise the fashion industry,"[72] because of much more rapid design, visualisation and prototyping of new pieces of clothing at lower prices. Ten years ago, a high-quality 3D printer might have cost close to €100,000; by 2018 this cost had fallen to €5,000, making it much more feasible for start-ups to produce prototypes in this way. 3D printing at a commercial scale, otherwise known as "additive manufacturing", can help to reduce waste as products are built up rather than being cut out of existing material. 3D technology can also translate into the consumer-facing side of the industry in the form of "virtual try-ons" and fit predictors, which may also help to reduce waste by helping customers to order the right size garment first time.

5.2.1 Fashion industry technology spillovers

There are examples of the global fashion industry pioneering new technology that later gets taken up by other sectors. For instance, our interview respondents noted that the global fashion industry made the shift towards online retailing early on, with other industries following behind.

Other examples include the patenting in 1955 of hook and loop fasteners by Swiss engineer George de Mestral under the trade name Velcro, with the original vision for use in clothing. The product and technology are now used in many applications across industries around the world.[73]

More recent innovations include the rise of the social media influencer. Influencers are now used for advertising by companies across a wide range of consumer goods, but the fashion industry was particularly suited to being an early adopter of this trend, since it is a visual industry and has always been given direction by "influencers" of all kinds. As Dr. Natascha Radclyffe-Thomas at the British School of Fashion puts it, "the advent of social media democratised fashion in several ways, including access to content creation and who gets to be a fashion critic".[74]

This began in the early 2000s with the rise of fashion blogs (*Women's Wear Daily* declared 2006 as the year "the blogs took over" at New York Fashion Week),[75] and grew much more quickly once Instagram was launched in 2010. Today, the influencer economy is a multi-billion-dollar industry. However, despite projections of brands spending $15 billion (approx. €12.5 billion) on influencer marketing globally by 2022,[76] there are signs that influencer engagement rates dropped significantly in 2020.[77]

[71] 3Ders.org, *Voxelworld's 3D printed runway show takes German fashion event by storm*, 2016
[72] Forbes, *3-D Printing Poised To Revolutionize The Fashion Industry*, 2018
[73] Velcro Ltd, *History of Velcro brand And George De Mestral*
[74] Vice.com, *Goodbye to the Influencer Decade, and Thanks for Nothing*, 2019
[75] Emily Dean Hund, *The Influencer Industry: Constructing & Commodifying Authenticity On Social Media*, 2019
[76] Business Insider, *Influencer Marketing: State of the social media influencer market in 2020*, 2019
[77] Forbes, *Is influencer marketing on the decline?*, 2020

DIGITALISATION IN THE FASHION INDUSTRY

Provided by Marte Hentschel, CEO, Sqetch, Berlin

Despite its reputation for fast-changing styles, the fashion industry itself suffers from an aversion to systemic change after decades of falling prices and increases in the speed of production cycles.

Today's consumers demand products that are constantly being improved, which is why it is fundamental for fashion companies to invest in innovative technologies and to work closely with their supply chains in times of profound change. This particularly applies to German fashion companies where, for over three decades, the focus has largely been on cost reduction and streamlining processes instead of sustainable innovation. Being able to anticipate changing customer needs and their impact on the textile value chain has therefore become a defining competitive advantage.

The good news is that uptake of digital technologies has enabled German fashion companies to open up to new business opportunities, reform outdated processes, and create new experiences for customers. Innovations often enter the market as novelties with the potential of arousing new customer interest, but can become state-of-the-art within a few weeks.

Two factors are required to ensure digitalisation is implemented successfully. The first is services, platforms, systems, and components that can be used to provide sophisticated new functions that can be accessed easily. The second is to ensure that IT systems are constantly developed and integrated into new and expanding digital infrastructures in order to catalyse the modernisation of the core business. Good examples of this are the way that the development of cloud solutions, such as Software as a Service and Platform as a Service, have changed the way we work in the fashion industry over the past few years, increasingly transforming fashion companies from retail to service businesses.

Digitalisation goes beyond the basics of a homepage and the use of enterprise resource planning systems. Rather, it describes business models based on digital products and services that target their R&D resources towards the development of new applications and business opportunities. This raises challenges that can often only be mastered through collaboration, which makes it necessary to use open source networks to exploit processes, data, and innovations.

Wavebreakmedia Ltd UC82/Alamy Stock Photo

Shortcomings in internet speed, IT security, and employee IT skills are still central obstacles to further digitalisation in the German fashion industry. With regard to data protection, data security and liability risks, legal regulations as well as measures that help to develop skills in limiting risks are necessary. In the area of IT skills, there is a need for action in the training of IT specialists but also the training and further education of other employees, especially against the backdrop of changing qualification requirements.

Boosting sustainability

These days the consumer's need for trust in the authenticity and creative originality of products plays a decisive role in purchasing decisions.[78] Technologies such as blockchain can offer security and transparency here, and enable brands to communicate their values, but also optimise supply chains for sustainability.

Automation and data analysis have enabled a new generation of fashion players to achieve agile product development and contract manufacturing. The next step would see vertical brands respond faster to trends and consumer habits to achieve just-in-time manufacturing and reduce overproduction.

In view of the great dependency on global commodity flows, short production cycles in small series would lead to moving product operations closer to consumer markets.

The potential of virtual product development and sampling using augmented reality, micro-factories, and the use of artificial intelligence and predictive analytics in the fashion industry can play a pioneering role in sustainability, and become Germany's distinguishing model for the future. New applications such as immersive technologies can help bridge the gap to transform corporate social responsibility into consumer experiences, increasing customer satisfaction and loyalty in this fast-moving business. The revolution will also attract talent, which together with training and qualification, can help reverse the brain drain and decline in German manufacturing since the 1980s.

Fashion companies need to innovate by offering profitable value-added services and focus on new technologies, whether through acquisitions, investments or internal R&D players who diversify their business models. They need to invest in technology across the entire value chain with the aim of increasing efficiency and streamlining the customer experience. Digitalisation is central to achieving success across this broad range of IT upgrading, business management innovation, and increased sustainability but increased corporate commitment and political action are both needed to achieve it.

[78] McKinsey & Company, *State of Fashion*, 2019

6. RECOMMENDATIONS AND CONCLUSIONS

During our interviews, experts and stakeholders in the German fashion industry suggested a number of ways in which policymakers and industry associations could support the industry's future growth. We summarise these recommendations in this final section of the report.

"The fashion industry is an enormous economic factor. Therefore, the need to set economic and other positive framework conditions for the fashion industry must be taken seriously. What we have so far in this respect is the merit of the Fashion Council - and projects like this study are the way forward."

Dr Christian Ehler, Member of the European Parliament

6.1 PROMOTE AND CELEBRATE THE GERMAN FASHION INDUSTRY AT HOME AND ON THE WORLD STAGE

Interviewees felt that Germany's fashion industry is under-represented globally, with a low level of visibility, especially given the relatively large size of the industry. In part, this is seen as due to the fashion industry not being recognised as a cultural asset and as such, lacking the broad-based promotion that other fashion locations such as France, Italy and the UK have had for decades.

Interviewees suggested that symbolic support and public commitment to the fashion industry could be given by:

- state officials, government ministers, or the current President and First Lady highlighting German brands by wearing them to international events;
- ministers attending fashion industry trade fairs;
- inviting fashion industry representatives to join business delegations;
- providing financial support for German companies to visit trade fairs and fashion shows abroad; and
- better promoting German fashion week.

These measures would raise awareness of the German fashion industry internationally and would also help to celebrate the industry domestically, as well as promoting local brands to German consumers.

6.2 PROMOTE GERMAN FASHION SCHOOLS AND RAISE AWARENESS OF CAREERS IN THE FASHION INDUSTRY

Although around 1,000 students a year have been enrolling in Germany's 40 or more fashion schools in recent years,[79] our respondents suggested that further support is needed to make these institutions more attractive to overseas students. Further, Germany would benefit from the creation of a flagship global training brand on a par with London's College of Fashion or Central Saint Martins, New York's Fashion Institute of Technology or Paris' ESMOD International. Linked to this was a suggestion that there should be a focus on making textile courses at Germany's biggest technical universities more exciting and interesting for potential applicants.

Respondents also felt that young people were not aware of the spectrum of possible careers available in Germany's fashion industry. They suggested that more should be done to get them interested and excited in design engineering and fine arts, in the same way that industrial and automotive engineering is promoted and highlighted to school children. Such an initiative could be carried out by both the government and the industry itself.

[79] Deutschland.de, *Study in Germany: Fashion,* 2018 and Destatis *statistics on students* dataset.

6.3 PROVIDE SUPPORT AND GUIDANCE FOR HELPING FASHION INDUSTRY BUSINESSES TO BECOME MORE SUSTAINABLE

As discussed in this report, increased requirements are expected to be put on fashion industry businesses around the world to become more sustainable, both through government regulation and as consumers increasingly favour brands who act in sustainable ways.

There is the beginning of a trend among German fashion businesses towards improving their sustainability practices, and the government has introduced some sustainability-related projects. One example is the Green Button, introduced by the Federal Minister of Economic Co-operation and Development, which can be applied to products meeting 26 social and environmental standards. Despite programmes like these, our respondents almost universally reported that greater support and guidance is required from the national government in the area of achieving sustainability.

Respondents' suggestions for the type of help and support needed included:

- financial incentives (such as through the tax system) to produce sustainable innovations and the promotion of industry-academic collaborations in this area; and
- setting clearer requirements, similar to the proposed Supply Chain Act (legislation that would enforce good working conditions for the global workforce of German companies).

6.4 INCREASE INTERDISCIPLINARY COOPERATION

Respondents noted that aside from support from the government, the industry could promote growth through greater collaboration. At its most simple level, this would mean greater communication between different areas of the industry.

Suggestions for how this could be facilitated included the creation of a digital "platform of excellence" on which businesses across different sectors of the fashion industry can gather and exchange ideas. Such a platform could also be used to help incubate start-ups and drive innovation, acting as a central point to connect business with new ideas to potential investors.

By working together and cooperating more in this way, respondents suggested that it may be possible for Germany's high number of small and medium-sized companies to compete more effectively with the larger global brands of other countries.

6.5 INCREASE SUPPORT FOR DOMESTIC FASHION MANUFACTURING

Respondents suggested that more could be done to promote Germany as a place to manufacture clothing and textiles and support businesses that choose to locate facilities there—helping to slow or reverse the trend of offshoring. A variety of government support mechanisms could be useful here, including promotion of the Made in Germany brand with regards to fashion and tax incentives for locating production facilities within Germany.

Linked to this, as more of the production of German-designed clothing is outsourced or offshored, the education programmes that in previous decades provided skilled German clothing manufacturing workers have diminished. As a result, companies suggested that it is harder for them to find the right workers within Germany. To maintain the high status of items that are truly "Made in Germany", respondents felt that support may be needed for these education programmes to continue, including help with driving demand for this education.

6.6 FOCUS ON FASHION INDUSTRY CLUSTERS OR CENTRES OF EXCELLENCE

"Berlin is this great melting pot of people who come from different cultures, from different countries. That is something that feeds and inspires creativity. Learning from each other, being part of a community, looking after each other."

Christiane Arp, FCG Chairwoman

Much has been written in economic literature about the benefits of businesses in a particular industry clustering together in a geographical location. Lots of employers in one industry in one area create a critical mass that attracts the skilled workers necessary for that industry, since a range of employment options exist. This critical mass helps give the businesses greater strength when seeking support or investment (including FDI, or foreign direct investment[80]), and creates competition, which can lead to greater innovation.[81]

The German fashion industry, and textiles manufacturing in particular, is spread widely across the country. One respondent noted that it may be beneficial for the industry to focus resources on a number of centres where fashion technology research is strong (such as Aachen, Berlin, Dresden, and Munich) rather than spreading investment across all 16 states. This could help to drive further investment and FDI in these areas and make them attractive and exciting places to draw in fashion industry talent from around the world.

[80] IMF, *Clusters as a driving engine for FDI*, 2005
[81] British Council, *Why do businesses cluster together?*, 2017

6.7 INCREASE USE OF DIGITAL TECHNOLOGY ACROSS THE INDUSTRY

As customers become more demanding in terms of the availability and efficiency of online retail, German companies will need to invest to avoid losing market share to foreign companies.

A key theme among respondents was that while there are examples of German fashion retailers that have a strong position in online retail, overall the sector lags behind that of some other countries. Respondents note that Germany is rarely a first mover in this space and is taking time to catch up with existing digital retail technologies. Respondents suggested that companies should make greater use of innovations such as virtual dressing rooms, and improve online communications with customers.

6.8 CONCLUSION

Germany has a large and successful fashion industry that boasts a strong reputation and whose products are popular both in its domestic market and in countries around the world. It also has an international reputation for quality, reliability, good value, and a competitive advantage in driving global innovation in fashion and textiles.

However, the industry must adapt to ensure it keeps up with opportunities in emerging markets and changing demands from consumers, particularly in relation to sustainability. This report has summarised a range of measures proposed by industry stakeholders to ensure that German fashion sustains and further expands it economic contribution in future.

This report also highlights the economic contribution that the industry makes, supporting 770,000 workers and a €28 billion contribution to GDP directly in 2019, equivalent to 2% of total employment and 1% of economic output. Across the direct impact, the industry's supply chains and the spending of its workers, the German fashion industry supports total employment of 1.3 million and a GDP contribution of €66 billion.

Offenblende

APPENDIX 1: INTERVIEW PARTICIPANTS

Fig. 21: List of interviewees by fashion industry area

Brands

- Heiko Desens, Global Creative Director & Innovation, Puma
- Ingo Wilts, Chief Brand Officer, Hugo Boss
- Johanna Kühl, Co-Founder, Kaviar Gauche
- Frederick Westermann, Managing Director, Roy Robson
- Jürgen Leuthe, CEO, Luisa Cerano
- Martina Buckenmaier, CEO, RIANI
- Peter Gross, CEO, Création Gross GmbH & Co. KG
- Nina Knaudt, Co-Founder, Rianna and Nina
- Annette Roeckl, Founder, Roeckl
- Gerd Oliver Seidensticker, Managing Director, Seidensticker Group
- Adrian Runhof, CEO, Talbot Runhof
- William Fan, Founder, William Fan
- Dieter Holzer, CEO, Marc O'Polo
- Jörg Ehrlich, Owner and Creative Director, Odeeh

Fashion fairs

- Jörg Arntz, CEO, Premium Group
- Olaf Schmidt, FCG Executive Board Member and Vice President, Messe Frankfurt
- Magdalena Schaffrin, Co-Founder, Neonyt

Media & PR agencies

- Alfons Kaiser, Journalist, Frankfurter Allgemeine
- Bianca Lang, Editorial Management, Brookmedia
- David Fischer, Founder, Highsnobiety
- Melissa Drier, Journalist and Consultant
- Christiane Arp, FCG Chairwoman
- Mandie Bienek, FCG Executive Board Chairwoman and Founder, Press Factory
- Grit Thönnissen, Editor, Tagesspiegel
- Manuela Kampp-Wirtz, CEO, Burda Style
- Manuel Almeida Vergara, Editor & Columnist, Frankfurter Rundschau
- Inga Griese, Senior Editor Style, Icon Magazine
- Marie-Louise Berg, FCG Executive Board Member and Founder, Berg Communications Berlin
- Chris Stricker, CEO, Haebmau Communications

Retailers

- André Maeder, CEO, KADEWE
- Jan Möller, Area Manager Beauty & Product Management, Otto
- Michael Kliger, CEO, Mytheresa
- Daniel Terberger, CEO, KATAG
- John Cloppenburg, CEO, Peek und Cloppenburg

Others

- Elgar Straub, Managing Director, VDMA Textile Care, Fabric and Leather Technologies
- Claudia Hofmann, FCG Executive Board Member & Creative Fashion Consultant
- Sebastian Feges, Head of Sales and Marketing, Efka Frankl & Kirchner Gmbh & Co KG
- Max Vögler, Vice President Global Strategic Networks, Elsevier
- Marc W. Lorch, CEO, Dr. Zwissler Holding AG
- Holger Max-Lang, President, Northern & Eastern Europe, Middle East, Lectra Deutschland GmbH
- Karl-Hendrik Magnus, Senior Partner & Leader Operations in Apparel, Fashion & Luxury, McKinsey
- Prof. Dr. Phil., Dipl.-Des. Marina-Elena Wachs, Industrial Designer and Professor, Hochschule Niederrhein University of Applied Sciences
- Marte Hentschel, CEO, Sourcebook GmbH
- Jürgen Müller, Founder and CEO, SUITS Executive Search

APPENDIX 2: DETAILED MODELLING METHODOLOGY

In this appendix we set out the detailed steps we took to estimate each impact given in this report.

Estimating total spending on fashion products

The starting point for estimating the economic impact of the German fashion industry was estimating the amount spent by consumers on fashion products in Germany. The main source of data for this was Eurostat's annual *final consumption expenditure of households by consumption purpose* dataset. This provides spending disaggregated into high-level categories such as overall clothing and footwear for 2019, consistent with the German national accounts.

However, for this study we wished to provide further disaggregation of products than this. To do this, we used data from the *German survey of income and expenditure* (known as the EVS), published by Destatis. This dataset includes a more detailed breakdown of German consumers' weekly expenditure, using categories such as men's clothing, women's clothing, jewellery and watches, etc. We calculated the share of these detailed categories within the higher-level categories, and applied these shares to the higher-level figures used in the *final consumption expenditure of households* dataset.

Estimating the direct GVA and employment impacts of fashion retail

Consumer spending on fashion products, as estimated above, provides the input data for working out the direct impact of fashion retail. We assumed that consumer spending on fashion was equivalent to the revenue received by fashion retailers. From that, we removed VAT, using the German VAT rate of 19%.

We then applied assumptions taken from Eurostat's *structural business statistics* database (SBS) to this revenue net of VAT to estimate the economic impact of retail. The SBS contains information on the GVA contribution, revenue and employment of a detailed range of industries in Germany. This information enabled us to calculate the ratio of revenue to GVA in the retail sector (both physical and online), as well as the ratio of GVA to employment headcount. By applying these ratios to our revenue estimates, we were able to find the direct GVA and employment impacts of this segment of the fashion industry.

Estimating the direct GVA and employment impacts of fashion wholesale and the manufacturing of fashion products

We took GVA and employment figures from the SBS to estimate the direct impact of fashion manufacturing[82] and fashion wholesale.[83] Because data disaggregated by industry do not provide detail on product type, we used our estimates of spending by product to disaggregate these figures into the different product types. For example, we applied the menswear's share of clothing expenditure to the total GVA contribution of the *wholesale of clothing and footwear* sector to find the direct wholesale GVA impact for menswear.

The latest SBS data available at the time of writing were for 2018 and had to be adjusted to reflect the industry in 2019. To do so, we applied 2019 detailed sales and employment growth rates from Destatis for wholesale and manufacturing subsectors to our 2018 results.

[82] We used the sectors *"manufacture of wearing apparel"* and *"manufacture of footwear"*, as well as portions of *"manufacture of luggage, handbags and the like"* and *"manufacture of jewellery and related articles"*.
[83] We used the sectors *"wholesale of clothing and footwear", and "wholesale of jewellery and watches"*.

Estimating the direct GVA and employment impacts of the manufacturing of fashion textiles and fashion advertising

Similar to our approach for retail, we used revenue to GVA and employment headcount ratios derived from the SBS to estimate the economic impact of the manufacturing of fashion textiles and fashion advertising segments. However, we needed a different approach to calculate the revenues used as the first set of input data.

To find the revenues of these sectors, we first estimated the procurement spending breakdown of the manufacturing of fashion products and wholesale sectors using input-output (IO) tables from Eurostat. These detail how much different domestic industries purchase from each other, as well as the size of their imports, exports and GVA contributions. This made it possible to estimate how much domestic and foreign fashion product manufacturers and wholesalers purchase from textiles manufacturers. It also made it possible to estimate how much fashion manufacturers, wholesalers and retailers purchase from advertising companies.

Because the procurement spending of one industry is a proxy for the revenue of another, we assumed that these procurement numbers were equivalent to the total fashion-related revenue coming from the two segments being analysed. We then followed the steps described previously for retail to estimate direct GVA and employment.

Estimating the direct impact of fashion magazines

Fashion Council Germany provided a list of the 11 most important fashion magazines, for which we estimated the economic impact. We estimated sales revenue using data from IVW (*Informationgemeinschaft zur Feststellung der Verbreitung von Werbeträgern e.V.*), which provides circulation estimates disaggregated by retail sales, subscription sales, electronic sales, as well as copies used in reading circles. We multiplied these circulation estimates by listed prices for these different formats to estimate total sales revenue. Fashion magazines also gain a significant amount of revenue from selling advertising space. We used data provided by Nielsen on advertising revenue for each of these publications.[84]

To estimate the economic impact of this revenue, we applied revenue to GVA and employment headcount ratios derived from the SBS for the *publishing of journals and periodicals* sector.

Estimating the direct impact of fashion education

Based on official data collected by Destatis, in 2019, there were 5,998 students in *textile design* and *textile and clothing technology* courses in Germany.[85] Through FCG discussion with academics and analysis of data on university class sizes, we make the assumption that average class sizes are 20 students. Using this data point allows us to estimate that there were 300 academic staff involved in teaching those courses that year. We then used data on average gross earnings in the higher education sector[86] to find the total earnings supported by fashion education, which we used as a our estimate of economic contribution for the sector.

[84] Accessed via PZ-online.de
[85] Destatis, *Institutions of higher education; statistics of students* database
[86] Destatis, *Gross earnings* database

Estimating the indirect and induced impact of the fashion industry

To calculate the indirect and induced economic impact of the fashion industry, we first estimated a breakdown of each segment's procurement spending using "input-output" tables for Germany, which detail how much each sector of the economy buys from every other sector. In this case however, we had to control intra-industry expenditure to avoid double-counting. To do so, we performed the following adjustments:

- we removed the value of goods purchased for resale by retailers and wholesalers from their total procurement spending. This made sure that we did not double-count revenue for the same item when it is purchased in turn by wholesalers, retailers and consumers; and
- for each segment, we removed procurement spending directed towards manufacturers (both of fashion items and textiles) and advertisers operating in the fashion industry.

The input-output tables also had information on each industry's employment costs and on the types of products consumers spend their wages on. This enabled us to estimate the total wage payment of each of the fashion industry's segments, and the wage spending breakdown of the employees receiving those wage payments. Following the same method mentioned above to remove fashion spending from total manufacturing and advertising spending, we stripped out consumer fashion spending from these breakdowns, to avoid double counting.

The procurement and wage spending breakdowns were then used as inputs into our global economic impact model to calculate the indirect and induced impacts of the fashion industry.

Estimating total tax payments

We estimated labour taxes (income tax and social security contributions) by estimating average salaries in the fashion industry and applying German taxation rates to this income, before multiplying by total employment. We used a similar approach for estimating the indirect and induced tax impact: we used official data on average wages by industry, applied the tax rates to these incomes, and multiplied by indirect and induced employment in each industry.

We estimated the tax impact for other taxes such as corporation tax by calculating average effective tax rates at the country level. By applying these ratios to the corresponding revenue numbers we calculated in previous steps, we found the fashion industry's indirect and induced tax contribution.

In this report, we also estimated VAT payments from fashion consumers and from the employment support by the fashion industry's direct, indirect and induced impacts. VAT on fashion products was estimated using ratios of VAT to revenue calculated from the *structural business statistics*, which we applied to the revenue estimated for fashion products. The share of VAT paid by workers on other consumer goods and services (excluding fashion) was estimated using average national rates.

APPENDIX 3: GERMANY'S LARGEST FASHION COMPANIES

For reference, we include a list of the top 75 German fashion brands and retailers in 2019. This is an expansion of the tables given in Fig. 7 and Fig. 8 earlier in the report.

Fig. 22: Top 25 German fashion brands by revenue, 2019[87]

Rank	Company	Brands	Revenue, 2019, €bn
1	adidas Group	adidas, Reebok etc.	23.6
2	Puma	Puma, Cobra	5.5
3	Hugo Boss	Boss, Hugo	2.9
4	C&A Deutschland	C&A, Canda, Clockhouse, Yessica, Rodeo etc.	2.2
5	Kik	Kik, Ergee	2.1
6	New Yorker	New Yorker	1.9
7	S. Oliver Group	S. Oliver, Comma, Liebeskind Berlin etc	1.3
8	Esprit	Esprit	1.1
9	Takko	Takko	1.1
10	Ernsting's Family	Ernsting's Family	1.1
11	Tom Tailor Group	Tom Tailor, Tom Tailor Denim, Bonita etc	0.8
12	Modern Creation Munich	MCM	0.8
13	CBR Fashion	Street One, Cecil	0.6
14	Gerry Weber International	Gerry Weber, Taifun, Samoon	0.5
15	Marc O'Polo	Marc O'Polo	0.4
16	Brax Leineweber	Brax, Eurex, Raphaela etc	0.3
17	Jack Wolfskin	Jack Wolfskin	0.3
18	Dr. Rehfeld Fashion	Broadway, Multiblu, Tom Tomson etc	0.3
19	Olymp-Group	Olymp, Maerz Muenchen	0.3
20	Mac Mode	Mac, Cambio	0.3
21	Winter Holding	Betty Barclay, Gil Bret, Vera Mont, Cartoon etc	0.3
22	Marc Cain	Marc Cain	0.2
23	Falke Group	Falke, Burlington	0.2
24	Schmidt Group	Chiemsee, Kappa, Colorado, Teddy's etc	0.2
25	Bugatti Holding	Bugatti, Eduard Dressler, Wilvorst etc	0.2

[87] Fashion Council Germany analysis of Textilwirtschaft Deutschland reports Textilwirtschaft Deutschland *Die Grössten Deutschen Modemarken 2019* and *Die Grössten Bekleidungseinzelhändler in Deutschland 2019*

Fig. 23: Top 25 German fashion retailers by revenue, 2019[88]

Rank	Company	Brands	Revenue, 2019, €bn
1	Otto Group	Otto, Baur, Bonprix, Heine Schwab, About You etc.	4.7
2	H&M	H&M, COS, Weekday, Monki etc.	3.2
3	C&A	C&A, Canda, Clockhouse, Yessica, Rodeo etc.	2.2
4	Zalando	Online shops and outlets	2.0
5	Deichmann	Deichmann, Snipes, Onygo, Soulbob, Ochsner	2.0
6	Schwarz Gruppe	Lidl, Kaufland	1.5
7	Tengelmann	Kik	1.5
8	P&C Düsseldorf	P&C Modehäuser, Anson's	1.4
9	HBC	Kaufhof	1.2
10	TJX Deutschland	TK Maxx	1.1
11	Karstadt	Karstadt	1.0
12	Inditex	Zara, Massimo Dutti, Zara Home, Pull&Bear and Bershka	1.0
13	Aldi Group	Aldi	1.0
14	Ernsting's family	Ernsting's family stores	0.9
15	Tchibo	Tchibo	0.9
16	Primark	Primark	0.8
17	Takko	Takko	0.7
18	Amazon	Online store	0.6
19	Breuninger	Breuninger	0.6
20	Klingel	Klingel	0.6
21	New Yorker	New Yorker and Ann Christine	0.6
22	The KaDeWe Goup	KaDeWe, Alsterhaus, Oberpollinger	0.4
23	Adler Modemarkt	Adler Modemarkt, Adler Orange	0.4
24	Bestseller	Jack & Jones, Vero Moda, Only etc	0.4
25	P&C Hamburg	P&C	0.4

[88] Fashion Council Germany analysis of Textilwirtschaft Deutschland reports Textilwirtschaft Deutschland *Die Grössten Deutschen Modemarken 2019* and *Die Grössten Bekleidungseinzelhändler in Deutschland 2019*

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To discuss the report further please contact:

Rob Harbron:
rharbron@oxfordeconomics.com

Oxford Economics
4 Millbank,
London
SW1P 3JA, UK

Tel: +44 203 910 8000

Corinna Hoyer:
Managing Director, Continental Europe

choyer@oxfordeconomics.com

Tel: +49 69 967 586 58

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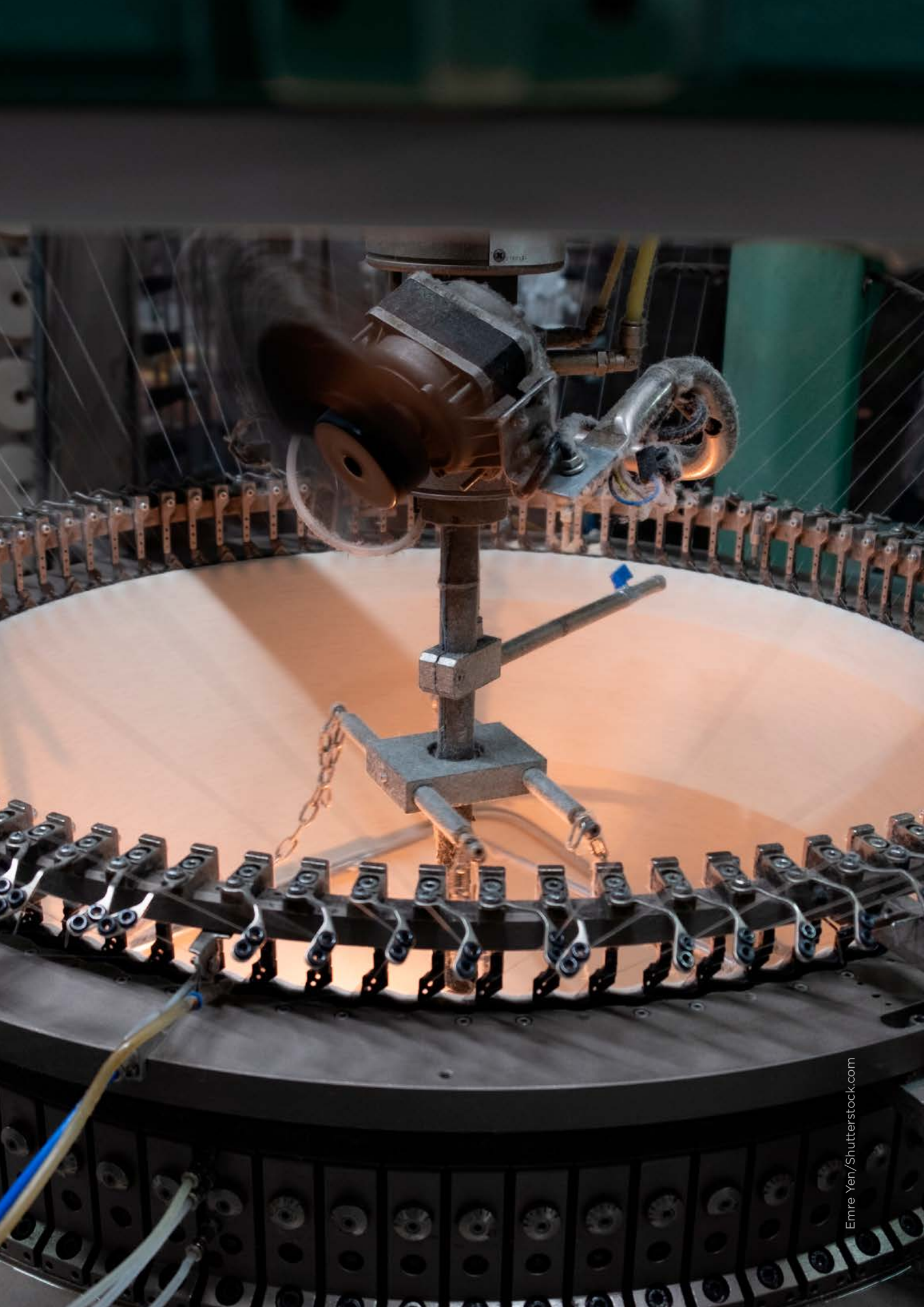

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OXFORD
ECONOMICS

Global headquarters
Oxford Economics Ltd
Abbey House
121 St Aldates
Oxford, OX1 1HB
UK
Tel: +44 (0)1865 268900

London
4 Millbank
London, SW1P 3JA
UK
Tel: +44 (0)203 910 8000

Frankfurt
Marienstr. 15
60329 Frankfurt am Main
Germany
Tel: +49 69 96 758 658

New York
5 Hanover Square, 8th Floor
New York, NY 10004
USA
Tel: +1 (646) 786 1879

Singapore
6 Battery Road
#38-05
Singapore 049909
Tel: +65 6850 0110

Europe, Middle East and Africa

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Asia Pacific

Singapore
Hong Kong
Tokyo
Sydney
Melbourne

Email:
mailbox@oxfordeconomics.com

Website:
www.oxfordeconomics.com

Further contact details:
www.oxfordeconomics.com/about-us/worldwide-offices