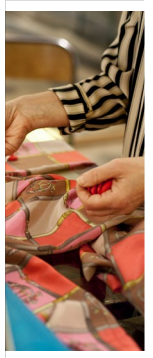


# Challenges and Opportunities of the Fashion Sector: What Future Awaits Made in Italy?



## Key Messages

*This document has been prepared as part of the activities of the Sectoral Strategies and Impact Directorate, with the coordination of Andrea Montanino and Simona Camerano. The authors are: Alberto Carriero, Federica Oliva, Azzurra Tavelli, and Riccardo Preziusi. The opinions expressed and conclusions are solely attributable to the authors and do not in any way engage the responsibility of CDP. The figures shown refer to the information available as of 13 November 2024. All rights reserved.*

- Italian fashion is synonymous with **excellence, creativity, and tradition**, a central sector of Made in Italy that sets trends and supports the national economy: 5.1% of GDP, 75 billion euros in value added, and over 1.2 million employees.
- Italy is the **world's leading producer of high fashion**, with 29% of suppliers to European groups and two-thirds of luxury players choosing our country for production.
- The success of Made in Italy fashion is based on three pillars: the **superior quality of materials and craftsmanship**, ensuring unparalleled excellence; the creation of **prestigious brands**, thanks to the talent of designers and strong distribution networks, both in Italy and abroad; the ability of fashion houses to focus resources on **innovative collections** and a brand heritage linked to the territory.
- Behind luxury and beauty, the industry must contend with **significant transformative phenomena** related to: i) adapting current business models to increasingly pressing ESG issues; ii) the growing **polarization of demand** toward luxury or fast fashion products; iii) reluctance in **generational transition**; iv) the recent **repositioning** of major clothing manufacturers within **global value chains**.
- Considering this context, **three challenges** emerge that simultaneously represent **development directions** to support the strengthening of the national fashion sector.
  - **Sustainability and social responsibility.** With 76% of luxury consumers attentive to **ethically committed brands**, the sector is called to comply with **increasingly stringent regulations** (from adopting eco-design criteria to banning the destruction of unsold goods), with large groups already at the forefront on these issues and SMEs still having **much ground to cover**.
  - **Consolidation**, essential in a sector in which over 79% of companies are represented by micro, small, and medium-sized enterprises. Investors and private equity funds promote aggregation strategies, but **the sector's potential remains partly unexpressed**.
  - Lastly, **innovation**, where Italy suffers from a **gap in digital skills**: chatbots, augmented reality, and blockchain are no longer a luxury but a **necessity to improve the shopping experience**.
  - Only by embracing sustainability, consolidation, and innovation can **Italian fashion** continue to inspire and lead the **world of style**.

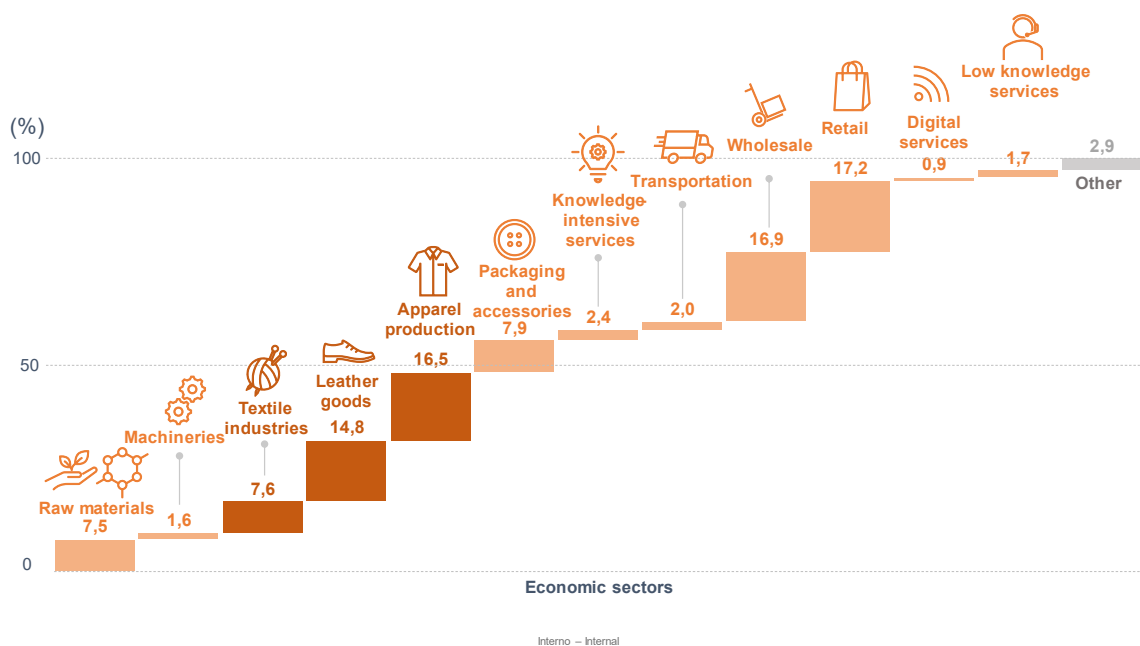
## THE 10 FIELDS OF ACTIONS OF CDP 2022-2024 STRATEGIC PLAN



## 1. The Structure of the fashion system and the current recent situation

- ▶ With an **added value of approximately 75 billion euros** and **1.2 million employees** (5.8% of the total), the Italian fashion sector is an **important component** of the national economy, contributing **5.1% to the GDP**<sup>1</sup>.
- ▶ The system includes **over 53,000 companies** (13% of Italian manufacturing), of which **79% are SMEs** that contribute to generating **one-fifth of the total turnover**<sup>2</sup>, demonstrating the articulation and diversification of a sector that encompasses **numerous production segments**<sup>3</sup>.
- ▶ These companies, having grown steadily to become **internationally recognized production excellences**, today stand as a true **economic and cultural pillar**, embodying the excellence of Made in Italy and influencing the sector globally with their **creativity and artisanal quality**.
- ▶ Due to its **long manufacturing tradition**, Italy has positioned itself as the **world's leading producer of high fashion**. About 29% of the suppliers of European fashion groups are based in our country, a figure that rises to two-thirds when it comes to luxury brands<sup>4</sup>.
- ▶ Nearly **40% of the total added value of the supply chain** is produced by the main sectors, namely **textile processing, leather-goods manufacturing, and clothing production**<sup>5</sup>. **Upstream processes**<sup>6</sup> account for **about 9% of the total added value**, whereas the

Figure 1 – Breakdown of the value added of the Italian fashion supply chain (% , 2022)



Source: CDP calculations based on Istat data (Permanent census of enterprises, 2023)

<sup>1</sup> CDP calculations on Istat data (Permanent Census of Enterprises, 2023). The agri-food and finance supply chains have been subject to statistical reprocessing to account for the contribution provided to the fashion sector by the agricultural sector and banking, insurance, and financial activities, which are excluded from the reference universe of the census survey.

<sup>2</sup> Elaborations on Infocamere and SACE data (Focus on *Sostenibilità e digitale, le chiavi di volta della Moda italiana nel mondo*, 2024) and AIDA data on 2022 financial statements.

<sup>3</sup> The sector is composed of three industries: textiles, clothing, and leather goods & similar items. The production chain

consists of thirty-seven industrial districts (about a quarter of all Italian territorial specializations) supporting major brands (especially luxury ones). These generate about 37% of the turnover with 18% of the employees.

<sup>4</sup> Mediobanca, February 2024.

<sup>5</sup> Activities related to Ateco codes 13, 15 e 14, respectively.

<sup>6</sup> They include the stages from the production of raw materials (natural and synthetic textile fibers) to the use of machinery and equipment for subsequent processing, including intermediate chemical processes (e.g., dyeing, finishing).

manufacturing of **accessories**<sup>7</sup> and **packaging materials**<sup>8</sup> accounts for nearly 8%.

- ▶ The remaining share of added value is almost entirely concentrated in **wholesale and retail sales** (34% in total), along with **transportation services, knowledge-intensive services** (e.g., quality control), **digital services, and less sophisticated services** (e.g., facility management, event organization; see chart 1).
- ▶ In 2023, Italian fashion exported approximately **65 billion euros** — equivalent to **10% of the national total export**<sup>9</sup> — with **over 55% directed toward non-EU countries**, highlighting the ability of Made in Italy products to establish themselves in international markets where consumer purchasing power is growing, such as the Middle East and East Asia.
- ▶ However, the early 2024 months have shown some **signs of change** with a **5.3% drop in exports**, equivalent to a loss of 1.8 billion euros in value<sup>10</sup>.
- ▶ Among the main causes:
  - a **fragmented geopolitical landscape** characterized by increasing tensions in the Middle East, in addition to those between NATO countries and the Russian-Chinese axis;
  - a trend of **declining domestic consumption**, with clothing and footwear consumption expected to decrease by 2.7% in 2024<sup>11</sup>;
  - A global **overproduction crisis** in the entire sector and a consequent **rebound effect**, triggered by the **decline in international trade** and the **slowdown in luxury in China**, estimated at +4% in 2024 (vs. +12% in 2023)<sup>12</sup>.

- ▶ The first to feel the impact have been the **large French luxury conglomerates** (LVMH, Kering), exposed to the Asian market for about 30% of their revenues, which, as shown by partial data for **2024**, have recorded **declining performance** (respectively -2% and -12% in profits vs. the first 9 months of 2023).
- ▶ **Contrasting trends** in the sector's evolution are confirmed by the performance of **Italian companies** in 2023 and the early months of 2024: despite the performance of major brands, which have shown **positive results** mainly driven by shopping from Asian tourists (e.g., Prada's revenue up 55% in Japan)<sup>13</sup>, the supply chain has shown signs of vulnerability.
- ▶ The reasons are more long-standing, and the **current situation** reflects a longer-term trend regarding the **sector's structure**.
- ▶ After several years of growth, in 2023, clothing experienced a slowdown, with **growth limited** to 0.7% compared to the previous year. This trend followed a **two-year period of strong expansion** (+20.7%) caused by inflation, which drove up sales prices.
- ▶ **Large companies** have managed to keep profits stable, whereas **smaller businesses** have suffered more. **Sector fragmentation** and **high competition** among small entities partly explain this difference.
- ▶ In **2024**, the **slowdown** became evident, with a 10% drop in revenues for the entire sector in the first quarter and 7% in the second<sup>14</sup>, affecting the main segments.
- ▶ **Forecasts for the end of the year** are difficult, with over 50% of micro and small enterprises expecting a 3.5% decline in revenue. However, in the **next five years**, growth opportunities will emerge due to exports and innovations in sustainability and supply chain optimization.

<sup>7</sup> They include inserts made of rubber, plastic, wood, metal.

<sup>8</sup> In paper and plastic.

<sup>9</sup> Calculations on SACE data (Focus on *Sostenibilità e digitale, le chiavi di volta della Moda italiana nel mondo*, 2024).

<sup>10</sup> Confartigianato note, September 2024.

<sup>11</sup> Family consumption update note, Confcommercio, August 2024.

<sup>12</sup> Slowdown due to the compression of savings following the inflation spike and real estate bubble, which reduced

purchases of "affordable luxury", source BCG. Recovery forecasts with an average annual growth of +11% by 2029, mainly driven by domestic consumption and local tourism, source PwC, November 2024.

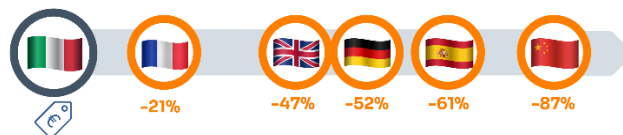
<sup>13</sup> CDP analysis on the 2024 half-year financial statements of LVMH, Kering, Prada, Brunello Cucinelli, and Moncler.

<sup>14</sup> Fashion Economic Trends data distributed by the Italian National Chamber of Fashion, September 2024.

## 2. Strengths and weaknesses of the supply chain

- ▶ The success of Made in Italy is based on **several key factors**:
  - a. **upstream in the supply chain**: The excellence of **materials and craftsmanship**, along with the provision of **tailored services for customers**<sup>15</sup>, define the unparalleled quality of Made in Italy;
  - b. **downstream in the supply chain**: The creation of **strong brands**, thanks to talented designers and cutting-edge fashion schools, and the development of **efficient distribution networks**, including mono-brand stores and franchises, allow for high competitiveness both in Italy and abroad;
  - c. **compared to international peers**: The relatively small size of product portfolios allows Italian fashion houses to **focus investments** on innovative collections and brands closely tied to their place of origin, thus strengthening the **link between tradition and innovation**.
- ▶ The **recognized quality of Italian textile and clothing products** is a crucial aspect.
- ▶ For the same destination market, product type, and quantity exported, **Made in Italy products command a higher price compared to major competitors**: in 2022, French products were sold at 21% less, British at 47% less, German at 52% less, and Spanish at 61% less; China has the highest price differential, with an 87% lower price (see chart 2).

**Figure 2 – Differences from Italy in the average export values in the textile-clothing sector**



Source: CDP calculations on CEPII-BACI data, 2022

- ▶ Regarding the high recognizability of brands, talented **Italian designers and fashion schools** (2 of the top 10 in the world are Italian<sup>16</sup>) associated with the brands are key elements that have strengthened their international positioning over the years. Another distinguishing factor has been the **smaller size of the portfolios** (i.e., the set of brands owned by the group) of Italian fashion houses compared to foreign ones<sup>17</sup>.
- ▶ With more focused product lines, Italian fashion houses can more effectively **optimize resources and investments on a limited number of items**, developing innovative collections and strengthening the **brands' ties to their place of origin**. It is indeed the fashion houses that continue to support the development of the Made in Italy brand, accounting for 25% of the most well-known Italian brands worldwide<sup>18</sup>.
- ▶ Despite the undeniable strengths, the Italian fashion sector presents some **elements of vulnerability, structural weaknesses, and conjunctural difficulties** highlighted even during the pandemic.

<sup>15</sup> For example: *quick response, stock service, co-design of collections*.

<sup>16</sup> *40 Best Fashion Schools in the World for 2024*, Investingchannel.

<sup>17</sup> Comparing LVMH (French) and Prada (Italian), it is observed that: the former owns about 75 fashion brands across 6 different sectors, while the latter owns only 2, namely Prada and Miu Miu.

<sup>18</sup> *Brand Finance Italy 100, 2024*.

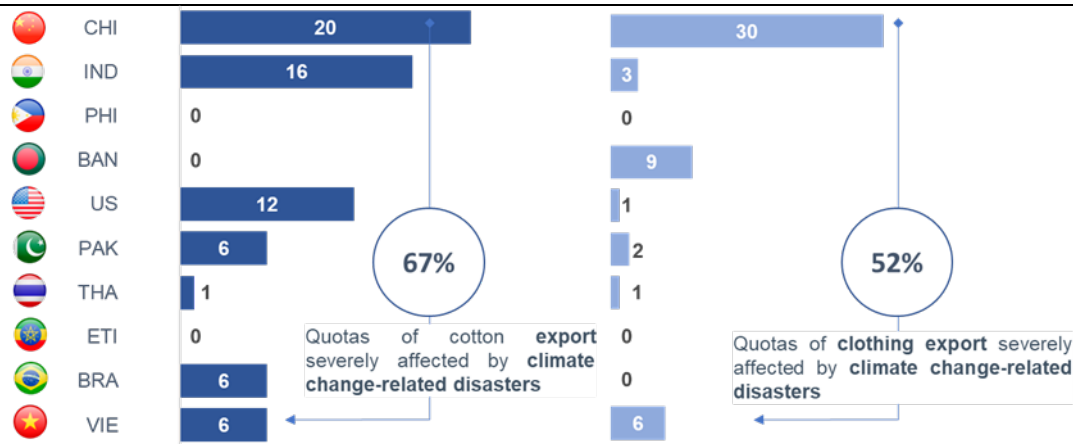
**(1) Adapting business models to climate change**

- ▶ Particularly important for the production dynamics of the fashion sector are the negative effects related to **climate change**.
- ▶ Extreme weather events are becoming more frequent and intense, and it is estimated that, without mitigation measures, **over 65 billion**

**dollars of global clothing exports will be at risk by 2030.**

- ▶ Currently, 67% of **cotton exports** and 52% of global **clothing exports** could be significantly impacted by extreme weather events (see chart 3).

**Figure 3 – Top 10 countries most affected by climate-related disasters and fashion sector exports** (number of people affected, 2000-2023; global share of cotton exported, %, 2021)



Source: CDP calculations on United Nations Office for Disaster Risk Reduction, World Trade Organization e McKinsey&Co data, 2023

- ▶ Players in the sector can respond to these challenges by activating **virtuous business models** that adopt green strategies—reducing carbon emissions—and using recycled or organic materials to improve transparency along the supply chain.

**(2) Orientation towards the luxury segment**

- ▶ There has been a **growing polarization** towards luxury segment consumers: in 2022, **only 2% of luxury buyers generated 40% of the sector’s total sales**<sup>19</sup>.
- ▶ This trend, confirmed in 2023, indicates an excessive dependence on big spenders, making the sector **vulnerable to potential fluctuations** in the purchasing behavior of this small elite. Brands are therefore focusing their strategies on this consumer segment, with an increasing focus on **personalization** as a key

tool to engage them and increase their spending.

- ▶ Luxury operators are particularly focusing on **revisiting codes, patterns, and forms** that have made their history to narrate their essence and emphasize the sense of exclusivity derived from their tradition<sup>20</sup>.

**(3) “Aging” of ownership and artisanal workforce**

- ▶ About 76% of Italian fashion companies with a turnover of over 20 million euros are **family-owned**, and 30% of these are **managed by entrepreneurs over 70**<sup>21</sup>. This figure, which exceeds the national average, highlights a **reluctance in generational transition**, a crucial element to ensure long-term innovation and competitiveness.

<sup>19</sup> Think Fashion, 2024.

<sup>20</sup> Summit Fashion Pambianco, 2024.

<sup>21</sup> Aub Observatory on Family Businesses (Aidaf, UniCredit, Bocconi), 2023.



▶ Aging also affects the artisanal workforce, with **over 7,000 technical figures** for the production of clothing and accessories disappearing each year, costing the fashion system 15 billion dollars<sup>22</sup>.

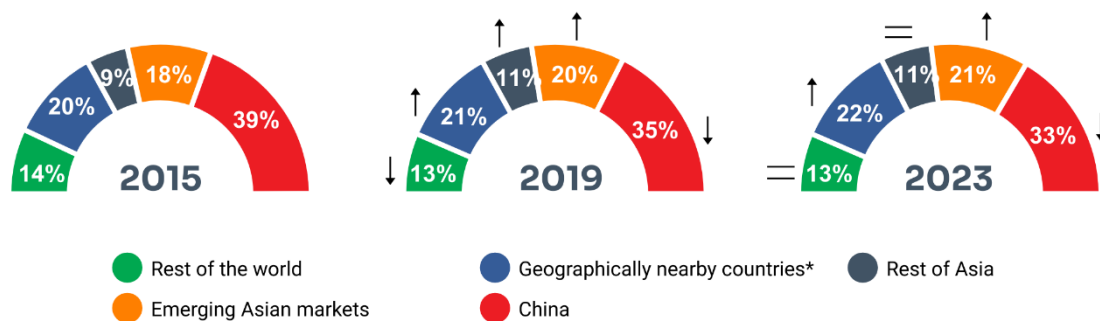
**(4) Repositioning within global value chains**

▶ In recent years, clothing companies have aimed to **bring supply chains closer**, with the goal of reducing delivery times, lowering shipping costs, and responding more quickly to market trends, particularly in fast fashion.

▶ However, the **results** of these nearshoring projects have been **uncertain so far**: in the **USA**, the share of imports from nearby countries, such as Central America and Mexico, has remained **stable** since 2019, while in the **EU**, there has been a **3-percentage point reduction** in imports from countries close to the Euro area.

▶ **Italy** seems to observe a reverse trend compared to the rest of the world, with **imports from neighboring countries increasing** by 2 percentage points compared to 2015, alongside a **reduction in imports from China** and an **increase in imports from Asian countries**<sup>23</sup>. This demonstrates that nearshoring is beginning to establish itself, especially from a business de-risking perspective (see chart 4). The **challenges** facing **Italian fashion supply chain** companies in the near future are linked to finding **new growth opportunities** that leverage the sector’s strengths, such as the quality of Made in Italy, while considering **global trends in sustainability, consolidation, and innovation**.

**Figure 4 – Italian imports of textile, clothing, and footwear products**



For Italy, the category “Geographically Proximate Countries” includes non-EU European countries, EFTA, the Middle East, and North Africa, while the category “Emerging Asian Markets” includes Bangladesh, India, Sri Lanka, and Vietnam. The European Union is not included as it accounts for the majority of the imports in question, and thus its valuation would not allow for the weight of other actors to be captured. Source: CDP calculations on World Bank data

**3. Three options to remain competitive**

▶ The **challenges** facing **Italian fashion supply chain** companies in the near future are linked to finding **new growth opportunities** that leverage the sector’s strengths, such as the quality of Made in Italy, while considering **global trends in sustainability,**

**consolidation, and innovation.**

**a) SUSTAINABILITY**

▶ In recent decades, the fashion sector has seen **exponential growth in demand and production**, often at the expense of efficient resource use, such as in the case of synthetic

<sup>22</sup> Confindustria Moda, 2023.

<sup>23</sup> This dynamic can be attributed to the relocation of Chinese production to other emerging Asian countries due to lower

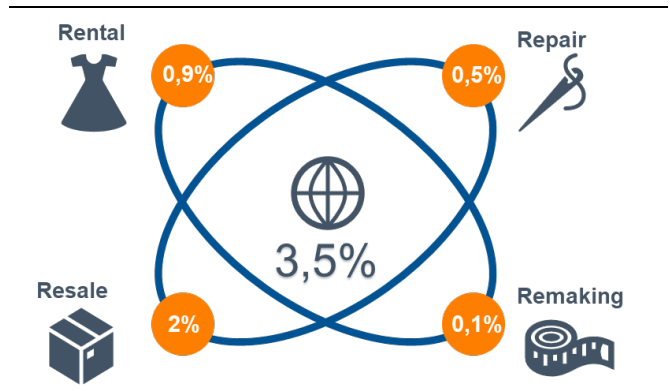
labor costs and the need to “bypass” regulatory obligations or sanctions affecting certain products.

fibers derived from fossil fuels.

- ▶ If these trends of overproduction and overconsumption continue, **clothing and footwear consumption is expected to increase by 60%**, from 62 to 102 million tons by 2030.
- ▶ These figures position the fashion industry as the second most polluting industry after oil<sup>24</sup> facing **increasing regulatory pressure**.
- ▶ In Europe, where the regulation on textile product sustainability will become mandatory by 2030, key regulatory changes include the introduction of a **digital passport** for each product, the obligation to **meet eco-design criteria**, the **ban on destroying unsold goods**, and **mandatory non-financial reporting** starting in 2026.
- ▶ In Italy, **large companies** already produce comprehensive reports and have **higher margins**, while **small and medium-sized enterprises** currently certify products and processes in **only 50% of cases**. The broader goal is to **improve transparency and sustainability** throughout the supply chain, addressing major environmental impacts such as raw material cultivation, textile production, and disposal. **Circular economy models**, though still marginal<sup>25</sup>, represent a key solution to promote reuse, longer product life, and the use of safe and recycled raw materials (see chart 5).
- ▶ Investing in **innovative solutions** such as regenerative agriculture and the use of recycled fibers could significantly reduce the industry's environmental impact.
- ▶ These innovations are also well received on the demand side, with more responsible consumption behaviors. Notably, the **second-hand market** has reached a global value of

70.8 billion dollars and is expected to grow at an average annual rate of over 7% from 2024 to 2032<sup>26</sup>.

**Figure 5 – Share of resale, rental, repair, and remaking in the global fashion market (%)**



Source: Ellen MacArthur Foundation "Circular business models redefining growth for a thriving fashion industry"

- ▶ In Italy, the transition to circular economy models is gaining ground, with the establishment of **EPR Consortia** and entrepreneurial initiatives for **waste recovery and recycling**.
- ▶ Currently, there are six main consortia active in the textile sector, aiming to support members in managing administrative practices and regulatory compliance, improving **separate waste collection**, and promoting **circular economy and waste prevention practices**.
- ▶ New developments are expected in the coming months with the introduction of **specific EU rules for EPR in the textile sector** and amendments to improve governance.
- ▶ Sustainability also encompasses **social responsibility**, a crucial factor in luxury brand purchasing decisions: according to the Vogue Business Index Spring, **76% of Italian consumers seek information** on brands' social responsibility<sup>27</sup>.
- ▶ The sector has responded to these stimuli,

<sup>24</sup> Andersen, *Moda, un settore in cerca di sostenibilità*, 2024. The fashion industry is responsible for between 4% and 15% of global CO2 emissions and consumes more than 20% of water for industrial uses, second only to agriculture. Additionally, 70% of textiles are made from petroleum derivatives (mainly polyester, amounting to 80 million tons per year), and only 1% of these are recycled, while the rest ends up in landfills (with decomposition times of up to a

thousand years). For this reason, clothing is the largest source of microplastics in the oceans (35%).

<sup>25</sup> Currently, 3.5% of the global market involves remaking, repairing, renting, and reselling clothing.

<sup>26</sup> Global Market Insight.

<sup>27</sup> Cube: Fashion takes shape, Vogue Business for Google, 2022.

embarking on a path initiated 10 years ago by the **Italian National Chamber of Fashion (CNMI)** with the adoption of the “**Sustainability Manifesto for Italian Fashion**”, followed recently by the “**Social Sustainability Report**”, highlighting the importance of ensuring **fair wages** and **adequate working conditions**, with 100% of workers in the involved companies covered by national collective agreements, ensuring proportionate and regularly updated wages.

## b) CONSOLIDATION

- ▶ **The fashion sector is polarized between high-end brands**, with solid performance and production specialization, **and lower-tier operators**.
- ▶ In this context, private equity has promoted **aggregation strategies and niche or sales platform acquisitions**. Over the past five years, European private equity operators have invested around 30 billion euros in 127 transactions, surpassing the number of deals in the US market, although with relatively smaller individual investments. 22% of European investments have focused on Italian companies, making our country the main destination for these funds<sup>28</sup>.
- ▶ In particular, the **consolidation** phenomenon has involved **subcontractors**, with strategies focused on three main areas: **aggregation of producers** (especially in luxury), **raw material components**, and **specific products** (such as footwear).
- ▶ These opportunities have been seized not only by international investors interested in buying family-run producers but also by **Italian players** with different objectives.
- ▶ Among these are **private equity funds** aiming to diversify their portfolios and **multibrand groups** focusing on **nearshoring or reshoring projects** to better control production and supply chains, reducing

disruptions and ensuring better working conditions.

- ▶ In the field of **Venture Capital (VC)** and new technologies, interest has turned towards **innovative products such as the provision of commercial services** (e-commerce, shared economy), financial or **tracking services** (cryptocurrencies, digital brokerage), and **technological services** (machine learning, artificial intelligence, augmented reality).
- ▶ However, in 2023, VC investments recorded a **45% decline due to restrictive monetary policies** and **increased risk associated with this asset class**.
- ▶ Asia and North America have continued to dominate the investment scene, with half of the operations in the last five years, and a **strong focus on Indian, South Korean, and Chinese brands**. European companies, on the other hand, have attracted 27% of the capital, with Italy lagging behind countries like France and the UK, where over 50% of investments are concentrated, along with Germany and Spain.
- ▶ In addition to extraordinary financial operations, **domestic consolidation in the sector can also occur through contractual ties** between consortia of companies aimed at achieving a specific industrial and/or commercial purpose.
- ▶ The **network contract** serves this function and allows companies to pursue a joint plan with other market players, enhancing **synergies**, developing new products, and increasing competitive capacity. However, these contracts are **not particularly exploited in the Italian fashion supply chain**. In 2023, **only 1%** of the over 4,800 companies that joined network contracts in Italy belonged to the specified supply chains<sup>29</sup> (see chart 6).

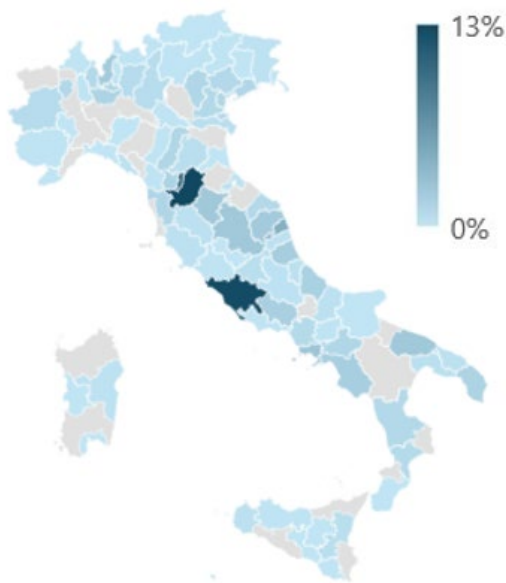
<sup>28</sup> Given a value of 100 for the deals made in these countries, and their number, Italy represents 48% of the value and 44% of the volume.

<sup>29</sup> Most were in services (44%), the agricultural sector (18%), and in commerce (10%).



- ▶ The objectives of these contracts also differ **within the same sector**. In the case of **manufacturing companies**, the content of the contracts focuses on **product innovations**, while for **companies active in retail**, the main purposes of the contracts fall on **optimizing warehouses** and inventories, collective use of **showrooms**, and strengthening **internationalization** processes and

**Figure 6 – Breakdown of network contracts in the fashion system (2010 – 2024, %)**



Source: CDP calculations on Business Register

### strategies for penetrating foreign markets.

#### c) INNOVATION

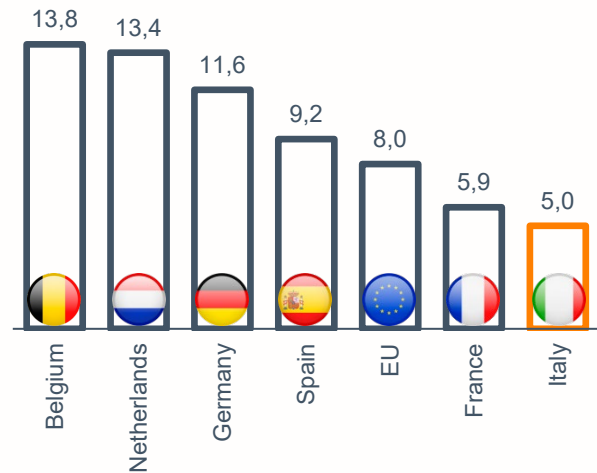
- ▶ **Artificial intelligence (AI)** and **digitalization** open up vast prospects in the fashion world: according to some estimate<sup>30</sup>, **investments in these areas**, especially in generative AI, **can increase the sector’s added value by about 8%**<sup>31</sup>.
- ▶ This is an opportunity that Italian companies cannot afford to miss, given the **higher level of digitalization in the fashion system**

<sup>30</sup> McKinsey & Company, 2023.

<sup>31</sup> According to Istat, in 2021 (the latest available data), the total added value of the clothing, textile industries, and leather goods production and packaging sectors was approximately 231 billion euros. With the innovation of artificial intelligence, this could reach 250 billion euros.

compared to the national manufacturing average (65% vs. 56%)<sup>32</sup>, although still lower than European peers in implementing AI-based solutions (5% vs. 8%) (see chart 7)<sup>33</sup>.

**Figure 7 – Enterprises using at least one ai-based solution (2023, %)**



Source: CDP calculations on Eurostat data

- ▶ This is partly due to the **deficit of “digital talents” in Italy**, i.e., individuals skilled in digital and AI fields, which would allow the sector to become more competitive globally<sup>34</sup>.
- ▶ Abroad, since 2015, major global luxury players (Kering, LVMH) have seen a proliferation of **Chief Digital Officers (CDO)**<sup>35</sup>, **responsible for digital innovation**, while large Italian fashion houses have only adapted later.
- ▶ **AI has multiple application possibilities** in fashion: from creating advertising campaigns or social content, to predicting consumption trends, design, and logistics.
- ▶ The two most disruptive areas of AI application in the sector today are **user/consumer experience** and **supply chain digitalization**.
- ▶ In the first case, this stems from consumers’ growing interest in **experiential goods or actual shopping experiences** (+10% and

<sup>32</sup> Mediobanca, 2024.

<sup>33</sup> CRIBIS, 2023.

<sup>34</sup> The European House-Ambrosetti, *Le 10 sfide per l’industria del Fashion & Luxury*, 2022.

<sup>35</sup> PwC, *Have we reached “peak” chief digital officer?*, 2019.

+15% compared to 2022)<sup>36</sup>, where the **physical and digital dimensions** are now **side by side**.

- ▶ For example, the use of **chatbots and virtual assistants for customer management**<sup>37</sup>, as well as **virtual reality and augmented reality** during the shopping experience, both online and in-store (e.g., digitized fitting rooms or RFID technology<sup>38</sup>) has become increasingly popular.

- ▶ Changes also affect **entire segments of the supply chain that are being digitized: design; analysis of consumption trends** with innovative solutions that, through specific software, allow the analysis of consumer preferences and, adopting a market-driven approach, the creation of potentially more sellable models; development of **smart factories** with **digital twin technologies**<sup>39</sup>; use of **blockchain and Non-Fungible Tokens (NFTs)**<sup>40</sup>.

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<sup>36</sup> Bain and Company, 2023.

<sup>37</sup> For example Kering e Shopify.

<sup>38</sup> Radio Frequency Identification (RFID) technology provides information on how garments are produced, shows available sizes and colors of items brought into fitting rooms, or enables self-checkout at the time of payment. These applications are directly related to the consumer experience, but RFID technologies have other uses as well.

<sup>39</sup> The digital twin is a virtual representation of a physical object or system, to which the "digital twin" is connected through a

series of sensors. This allows for useful information about the physical asset and intervention in case of issues or failures.

<sup>40</sup> Through obtaining NFTs, some brands allow customers to "redeem" the actual physical product and thus contribute to building the brand community. An example is Louis Vuitton's Treasure Trunks, a limited collection of NFTs that offer owners access to future products, unique experiences, and an exclusive customer community.

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