# FOLLOWING THE THREAD

Tracking value and finance through the apparel industry



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# **KEY TAKEAWAYS**

This report has four key takeaways:

- 1. Visibility in supply chains is going to be increasingly important for fashion retailers in the future. Can, for instance, a particular t-shirt be described as "green" if a brand doesn't know where the raw material is sourced or how it was processed during manufacture? To help shed light on the opaque supply chain, Planet Tracker has created an interactive dashboard comprising 3,897 apparel entities (public and private) across the apparel value chain.
- 2. The bulk of the industry's sales, profits and capital is at the retail node of the supply chain.
- 3. In contrast the environmental damage is focused upstream in the supply chain, notably at the fabric manufacturing node. Consumers, brands and investors in the countries where the largest proportion of textiles are consumed are largely shielded from the negative environmental impacts of the textile supply chain. Much of the work occurs out of sight, in other countries. The opaque nature of the supply chain also makes attributing responsibility and bringing pressure for change to bear challenging.
- 4. To have a sustainable fashion industry, this mismatch needs to close. Given the location of capital, this means retailers need to work with suppliers to improve their environmental footprint. We believe many of these investments can be profitable in and of themselves, as well as improving the industry's environmental footprint. Investors should push retail corporates to work with their suppliers. This will allow them to position brands to substantiate green claims about their collections, an area which is facing growing regulatory scrutiny.

# **EXECUTIVE SUMMARY**

The fashion industry has a dirty problem. The manufacture of apparel is associated with significant negative environmental impacts, including high consumption of water, release of toxins and significant greenhouse gas emissions. During use, the washing of clothes releases millions of microfibres which find their way into rivers and oceans. At the end-of-life, most clothing ends up in landfill or is incinerated, further contributing to pollution of the air, land and water.

Despite these issues, brands promote their "green" collections, seeking to capture spending by environmentally conscious consumers. The industry is also committed to achieving Net Zero by 2050.<sup>i</sup>

The challenge for the brands is that much of the negative environmental impact of the apparel they retail occurs further back up the supply chain and thus often outside of their direct control. Real change towards a more sustainable industry will require a holistic, whole supply chain approach coupled with innovation to drive improved circularity.

This report details Planet Tracker's work to create a unique proprietary universe of the apparel supply chain to elucidate how sales, profits and capital are spread across the different stages of the apparel industry.

By creating this universe comprised of close to 3,900 companies, we are able to compare the location of value and capital to the location of the major environmental impacts that occur in the manufacture, retail and use of apparel. The universe is available via an <u>interactive dashboard</u> on the Planet Tracker website.

No.	Metric	Metric Value
1	Number of Companies	3,897
2	Number of Countries covered	67
3	Total Market Capitalization - USD mn	1,812,762
4	Overall Revenues - USD mn	1,133,802
5	Total EBITDA - USD mn	144,619

*Figure 1* – A summary of our textile supply chain dashboard. Source: Planet Tracker

Our analysis underlines the significant disconnect between the location of the majority of the sales, profits and capital in the textile industry and the location of the most significant negative environmental impacts. While sales, profits and capital are concentrated in the apparel retailers (the fashion brands), the majority of the environmental impact occurs upstream in the supply chain.

To move to a truly sustainable industry, fashion retailers and brands must pivot to invest in their supply chain partners and we call for investors to pressure corporates to do this. We believe these investments can be profitable in and of themselves, as well as improving the industry's environmental footprint. This will allow them to position brands to be able to substantiate green claims about their collections and gain real benefits, at a time when regulators appear to be taking a keener interest in potential greenwashing. It is this investment in supply chain partners that will truly reveal the sustainability credentials of apparel companies.

# THE TEXTILE INDUSTRY'S ENVIRONMENTAL PROBLEM

The textile industry is not only a significant contributor to greenhouse gas emissions but is also a significant contributor to other forms of pollution.

The industry is estimated to produce<sup>1</sup> somewhere between 2-10% of global greenhouse gas emissions, according to research.<sup>ii</sup>

The manufacturing processes for textiles involve substantial water consumption and the use of toxic chemicals, which risk leaking into the environment.

Once sold, apparel is associated with the release of around 0.5 million tonnes of microfibres per annum which are released into waterways.<sup>iii</sup> Research into these microfibres is finding that they cause negative impacts to ecosystems and human health.

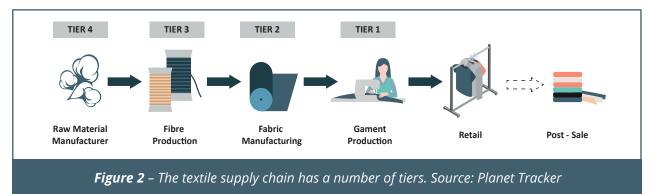
The industry also has a substantial waste problem. Three quarters of garments end up in landfill or are incinerated at the end of their lives, with only an estimated 1% of all used pieces being recycled into new garments.<sup>iv</sup>

With the increasing trend of consumption of textiles,<sup>v</sup> in part driven by fast fashion providing cheap, low quality items with a short life expectancy, it is questionable if the industry is really moving towards a sustainable footing. It is estimated that half of fast fashion items are disposed of after less than a year of use.<sup>vi</sup> This is driving demand for ever more clothing production, which remains reliant on virgin feedstocks and destructive manufacturing practices.

Recent Aii report "Taking Stock of Progress Against the Roadmap to Net Zero" – page 2 Taking-Stock-of-Progress-Against-the-Roadmap-to-Net-Zero.pdf (apparelimpact.org)

# WHY IS UNDERSTANDING THE SUPPLY CHAIN IMPORTANT?

The textile supply chain can be thought of as a series of tiers behind the retailers – see Figure 2. The post-sale part of the market is currently limited. Re-sale has seen growth in interest in recent years (see our blog <u>Second-hand IPOs - The Slow Down of Fast Fashion - Planet Tracker (planet-tracker.org</u>), but for items not being re-sold, only around 1% are recycled.



Tier one suppliers do the final assembly of garments; tier two produce the fabrics used; tier three produce the fibres which are woven to make the fabric; while tier four are the raw material suppliers.

For retailers, the supply chain is often highly opaque. They will typically know the garment makers supplying the finished product. However, these garment makers may outsource some work, meaning even relationships in Tier 1 may be unclear. Beyond the garment producers, visibility for a retailer usually becomes even less easy as a variety of suppliers may produce fabric used in a garment or supply the fibre or raw materials from which the fabric is made.

Consumers, brands and investors in the countries where the largest proportion of textiles are consumed are largely shielded from the negative environmental impacts of the textile supply chain. Much of the work occurs out of sight, in other countries. The opaque nature of the supply chain also makes attributing responsibility and bringing pressure for change to bear challenging.

However, with the improvement in tools to aid supply chain traceability, brands are increasingly able to know who their suppliers are. This means they can act to help them improve their environmental footprint. We believe that this investment can not only achieve a positive return in and of itself, but it also strengthens the ability of the brand to make sustainability claims about their products. Importantly, supply chain traceability also provides brands with a means to ensure fair labour standards in their products. Although the latter is a massively important issue in the Textile industry, we consider only the environmental impacts in this report.

In light of this lack of visibility throughout the value chain, Planet Tracker has created a map of corporate actors active across the manufacture and retail of apparel. We have allocated more than 3,800 entities to six nodes ranging from raw material production to post-sale of finished garments. The work allows us to examine how sales, profits and capital are spread across the textile supply chain. This can then be mapped against the environmental impacts that fall across these nodes.

#### Out of sight is increasingly not out of mind

Visibility in supply chains is going to be increasingly important for fashion retailers in the future. Recently, we have seen consumer regulators taking a more aggressive attitude on their assessment of corporate green claims.

In December 2022, the U.S. Federal Trade Commission (FTC) asked for comments on potential changes to the Green Guides for the Use of Environmental Claims (last republished in 2012) which set out how corporates can avoid breaking rules on deceptive advertising when making green claims<sup>vii</sup>. Areas on which the FTC asked for comments include terms such as "recyclable", "sustainable" and "net zero". The comment period closed on April 24<sup>th,</sup> 2023.

In February 2022, the European Commission put forward proposals to add the environmental and social impact of goods as areas where traders cannot mislead consumers. It also called for a ban on generic or vague environmental claims.<sup>viii</sup>

More recently, on March 22<sup>nd</sup> 2023, the EU proposed a directive focused on the regulation of green claims. The proposed directive will require much more robust proof of claims and that claims are checked by "an independent and accredited verifier".<sup>ix</sup> Additionally, on June 1<sup>st</sup>, the European Parliament agreed on its position on the Directive on corporate sustainability due diligence which will require companies to undertake due diligence on their own operations and that their supply chains, to end or mitigate negative impacts on human rights and on the environment.

Furthermore, the European Commission will revise the Textile labelling Regulation (planned for the 4th quarter 2023) to introduce specifications for physical and digital labelling of textiles, including sustainability and circularity parameters based on requirements under the proposed Regulation on eco-design for sustainable products<sup>x</sup>.

In July 2022, the UK's Competition and Markets Authority (CMA) launched an investigation into ASOS, Boohoo and Asda regarding sustainability claims about their clothing. This follows the CMA publication of a "Green Claims Code" in September 2021. The code sets out six hurdles for green claims to be acceptable:

- Claims must be truthful and accurate
- Claims must be clear and unambiguous
- Claims must not omit or hide important relevant information
- Comparisons must be fair and meaningful
- Claims must consider the full life cycle of the product or service
- Claims must be substantiated

#### Source: UK Competition and Markets Authority<sup>xi</sup>

The final point requiring substantiation is likely to often rely on good supply chain traceability. Can, for instance, a particular t-shirt be described as "green" if a brand doesn't know where the raw material is sourced or how it was processed during manufacture?

In March 2022, the UK CMA provided feedback to the UK government about potential future legislation to ease the transition to a low-carbon economy. Their recommendations included the suggestion of legislation to standardize definitions of commonly-used environmental terms and making misleading and/or unsubstantiated environmental claims a banned practice under consumer law.<sup>xii</sup>

As well as regulatory pressure, we have recently seen a number of legal actions brought by consumers against fashion brands they allege were mis-selling "green" collections.<sup>xiii</sup>

Region	Regulator	Regulations
U.S.	Federal Trade Commission	Green Guides for the Use of Environmental Claims
EU	European Commission rules implemented at national level	Proposed directive on green claims
U.K.	Competition and Markets Authority	Green Claims Code
		n around green claims. Source: Planet Tracker

#### Database methodology

The first step in the creation Planet Tracker's unique universe of the apparel industry was splitting the industry across six nodes, with the first four broadly analogous to the tiers of the textile supply chain set out in Figure 3:

**A** – **Raw Material Manufacturing:** Includes cotton farms and other types of textiles or fabric farms like hemp and wool. It also includes the raw materials for plastics-based textiles, including production of polyester, viscose, nylon etc.

**B** – **Fibre Production:** The production of the yarn or thread. Natural and synthetic based.

**C** – **Fabric Manufacturing:** The point where yarn is woven into fabric, either through weaving, or for non-woven fabrics. Also, any processes done to the fabric such as dyeing or wet processing in order to make the fabric ready to be turned into apparel.

**D** – **Garment Production:** The point where fabric is turned into clothing.

**E** – **Retail:** Both wholesale and retail. Point of sale. If the company is a brand, this is the core node.

F – Post-Sale: Any kind of reselling, recycling or waste processing.

Once these nodes were defined, Planet Tracker analysed financial databases to identify public and private entities within the textile space.

These entities were then assigned to the nodes we had set out using an algorithm that highlighted corresponding words in the business description of a company to a node within our universe (e.g., cotton within a business description as an indicator of raw material manufacturing). Where entities had more than one keyword it would be allocated to the node with the highest number of matches. For a list of all the keywords used in this process, please see the appendix to this report. Examples of corporates at each node are included in Figure 4.

Node	Example			
Raw Material Manufacturing	Hubei Yinfeng Cotton Co Ltd			
Fibre Production	Lenzing AG			
Fabric Manufacturing	Toyobo Co. Ltd			
Garment Production	Crystal International Group Co Ltd			
Retail	Gap Inc			
Post-Sale	Wangneng Environment Co Ltd			

*Figure 4* – *Examples of corporate entities at each node. Source: Planet Tracker* 

The initial allocations performed by the algorithm were then quality checked manually by an external consultant. A sample of the final allocations was then reviewed by Planet Tracker to check for errors. Duplicates and subsidiaries were also removed at this step.

Once the universe was populated, financial data for the entities was pulled from the financial data provider Refinitiv and our interactive dashboard created. For a more in-depth methodology, please see our separate <u>methodology report</u>.

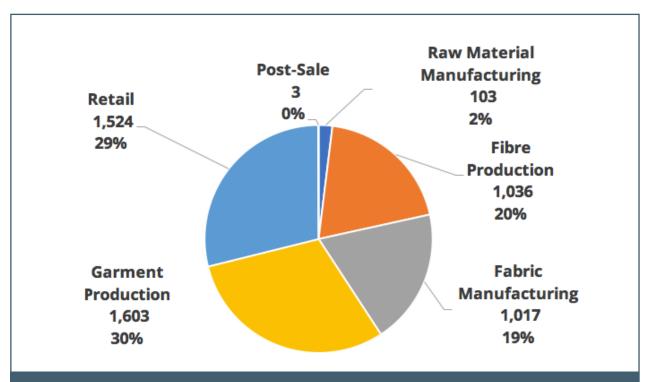


# WHAT WAS REVEALED

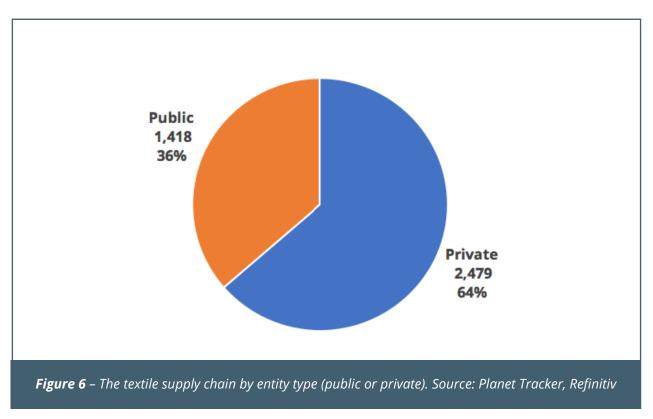
#### The makeup of the textile universe

The Planet Tracker universe comprises close to 3,900 entities. Looking at the split by node, most were allocated to the garment production node (30%), followed by retail (29%) and fabric production (20%) – see Figure 5.

We note that the Raw Material Manufacturing node, surprisingly, only includes 103 entities. This is likely due to a large number of very small-scale producers of textile raw materials, whose size resulted in them being below the level of the financial databases available which were used to build the universe.

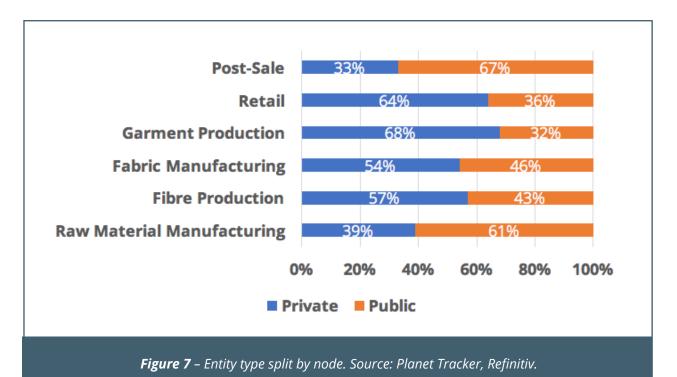


*Figure 5* – The textile supply chain by number of corporates. Graph displays node, number of corporates and percentage of corporates in the total textile supply chain. Source: Planet Tracker, Refinitiv

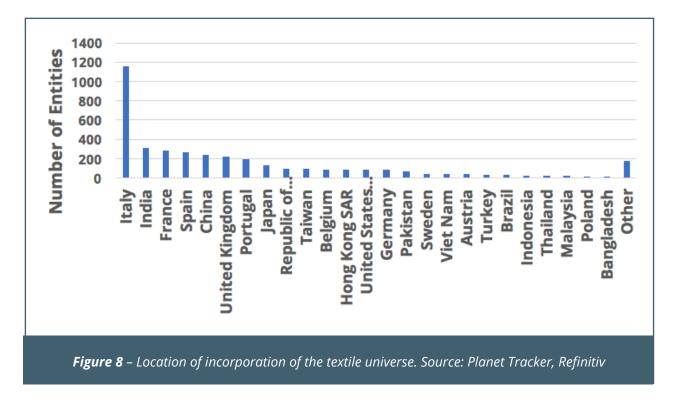


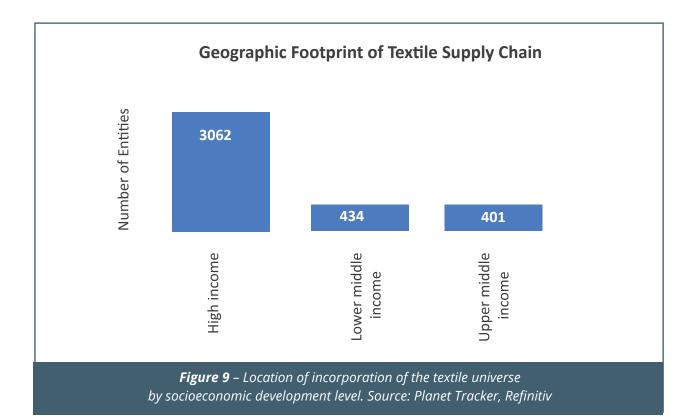
Within this universe 36% of companies are publicly listed – see Figure 6.

Breaking this down by node suggests raw material manufacturing has the largest proportion of public entities, whereas garment production has the smallest proportion. The high proportion of public entities in Raw Material Manufacturing is likely due to many private raw material producers not being captured in the universe as they are too small to be picked up by the financial databases used in the screening – see Figure 7.



Looking at the split of location of incorporation of the entities included in our database (Figure 8), Italy is by far the most common country of incorporation. The relative volume of entities in Italy is perhaps surprising. However, the country has long been associated with many leading fashion brands and is also well known for a substantial textile manufacturing sector. Note that incorporation is defined as the geographical location of the headquarters. We show the location of incorporation by socioeconomic level of the country in Figure 9.





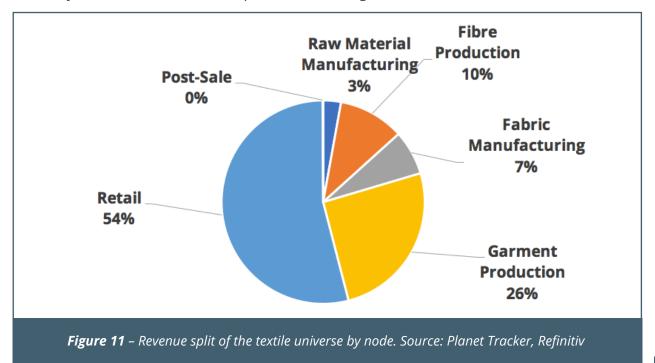
Across the value chain stages, it is only within Raw Material Manufacturing where Italy loses the prime spot as for geographical location, specifically to China – see Figure 10.

RAW MATERIALS	Entities Count	FABRICS	Entities Count	RETAIL	Entities Count
China	19	Italy	287	Italy	419
India	18	India	151	United Kingdom	147
Italy	11	China	69	France	122
Spain	6	Taiwan	57	Spain	90
United Kingdom	6	Portugal	51	India	83
Japan	6	Spain	45	Japan	83
Taiwan	6	Japan	37	China	72
Pakistan	6	Belgium	36	Hong Kong SAR	61
Germany	4	United Kingdom	33	United States of America	58
France		Pakistan	32	Portugal	5
FIBERS		GARMENTS	Entities Count		
Italy	303	Italy	579		
India	173	Portugal	127		
France	82	India	109		
China	73	United Kingdom	100		
Pakistan	52	France	98		
Spain	48	China	85		
Portugal	47	Spain	81		
Taiwan	33	Japan	44		
United Kingdom	31	Germany	44		
Japan	22	Republic of Korea	43		

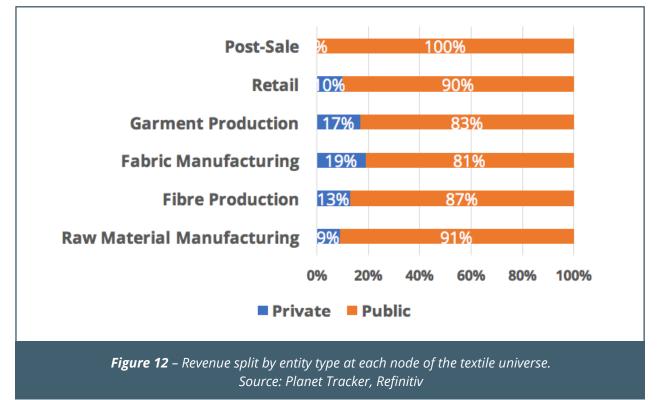
*Figure 10* – Location of incorporation by textile node. Source: Planet Tracker, Refinitiv

#### What about the financials?

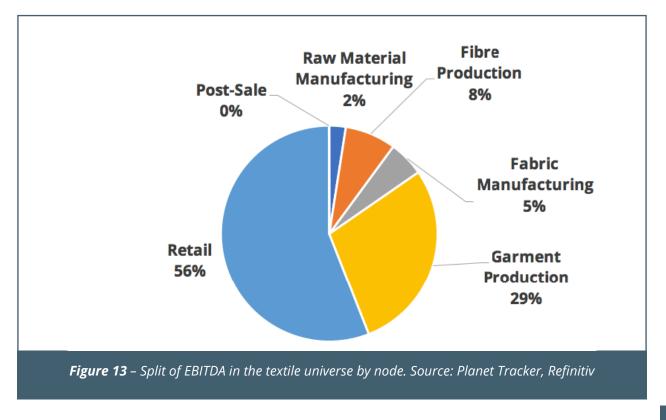
Moving on to the financials of the entities within our universe, over half of total universe revenue is assigned to the retail node. Garment production stands at around half of retail revenues, while fabric manufacturing and fibre production constitute the bulk of the rest, with very little in raw materials or post-sale – see Figure 11.



Looking at how the revenues split by each node between public and private entities shows a consistently strong weighting to public entities. This is in contrast to the actual number of entities split, where private ownership is more common. This difference is likely attributable to the fact that larger companies are more likely to be listed – see Figure 12.

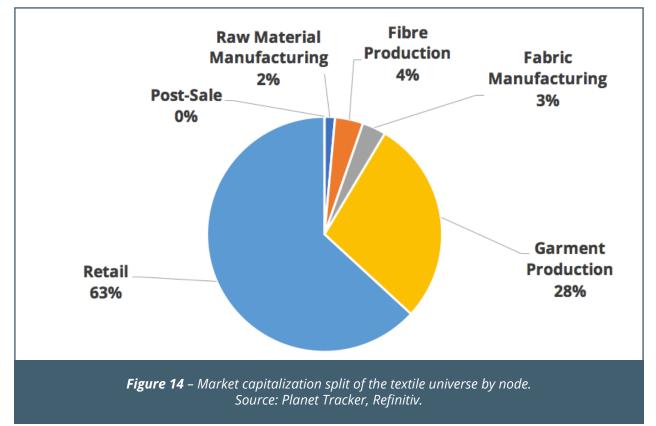


Similar to revenue, the bulk of earnings before interest, taxes, depreciation and amortization (EBITDA) within the universe is at the retail node (56%), with garment production picking up close to a third of overall EBITDA, and the rest allocated across fabric manufacture and fibre production – see Figure 13.

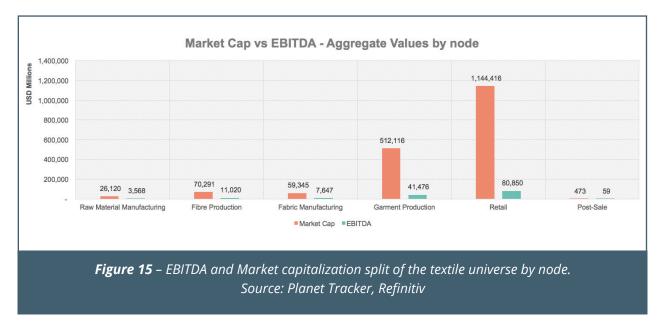


#### How is capital allocated across the textile universe?

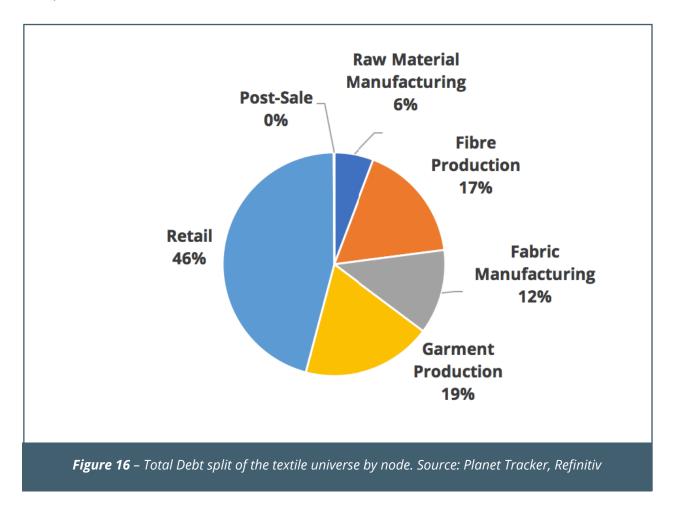
Moving on to look at the allocation of capital in the universe, as for market capitalization, retail dominance continues, with 63% of market cap residing in entities allocated to it – see Figure 14.



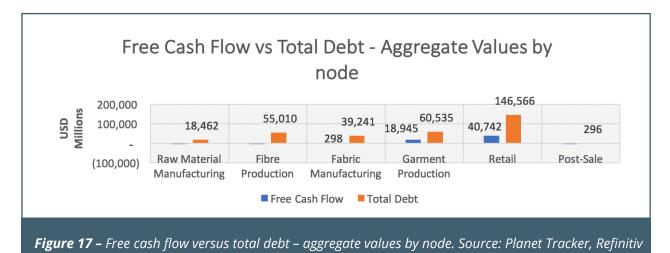
The weighting to the retail node seen in the market capitalization data is unsurprising given the weighting of profits to this node (Figure 13). We show the % split by market cap and EBITDA side by side in Figure 15.



Things begin to change when examining total debt, with less than half of the total debt at the retail node and a relatively even split of the remainder across fibre production, fabric manufacturing and garment production – see Figure 16. Surprisingly raw material manufacturing registers a fairly high proportion (6%) of Total Debt across the universe, as compared to its share of overall revenues.



Looking at debt versus Free Cash Flow (FCF) shows strongest FCF generation at the retail and garment production nodes. Earlier stages of the supply chain look less attractive with low levels of FCF, but substantial debt - see Figure 17.



#### **Environmental impact**

Having created a Planet Tracker textile universe, we can compare how the financial and capital allocation compares to the environmental data in the textile supply chain.

Good data on the total environmental impact of the textile industry is limited. Individual studies have examined different parts of the textile manufacturing industry, highlighting particular impacts. For instance, the need for irrigation for cotton<sup>xiv</sup> which can stress local water supplies and the negative impacts of pesticide use on the health of cotton farmers.<sup>xv</sup>

The top half of Figure 18 is based on environmental impact data from Quantis<sup>xvi</sup> which looks across the value chain of textiles from raw material to end of life. Their analysis does not include impacts from the use of textiles, for example from washing clothing. The redder the shading, the worse the environmental impact, while the greener hues show minimal environmental effects.

The most significant negative impacts within the textile supply chain are seen at the fabric manufacturing stage, in line with the analysis presented in Planet Tracker's earlier note: Dye Another Day which highlighted the large use of water and toxic chemicals at this stage in the manufacturing process. According to the Quantis data, there is very little impact associated with retail or post-sale. However, we note this dataset does not capture the negative consequences of the large volumes of textiles discarded each year in terms of litter and pollution from mismanaged waste. Quantifying this impact is difficult, but it should be borne in mind when considering the environmental footprint of the industry. We will update our analysis as better data becomes available on the impact of textile waste.

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	Raw Material	Fibre	Fabric	Garment		
	Manufacturing	Production	Manufacturing	Production	Retail	Post-Sale
Environmental Impact	t					
Climate Change	16%	28%	48%	7%	1%	1%
Human Health	21%	26%	44%	8%	1%	0%
Ecosystem Quality	30%	21%	39%	9%	1%	0%
<b>Resource Consumpti</b>	18%	25%	49%	7%	2%	0%
Freshwater Withdraw	31%	23%	38%	8%	0%	0%
Universe Split						
Revenues	3%	10%	7%	26%	54%	0%
EBITDA	2%	8%	5%	29%	56%	0%
Market Cap	1%	4%	3%	28%	63%	0%
Total Debt	6%	17%	12%	19%	46%	0%

*Figure 18* – Environmental impact of textiles versus the allocation of sales and capital. Source: Planet Tracker, Quantis, Refinitiv.

*Note: Shading – Increasing red shading indicates higher contribution to that measure as a percentage of the overall Planet Tracker Textile universe* 

The bottom half of Figure 18 shows the spread of financials and capital derived from our universe. The redder the shading the more significant that nodes is as a percentage of the overall metric across our universe. The concentration of sales, profits and capital is evident from the red shading of the retail node.

Comparing the two sections, there is a clear difference between which nodes have the highest environmental impact and those with the bulk of sales, profits and capital. The bulk of sales, profit and capital is found in the retail node, versus most environmental impact occurring earlier in the supply chain.

# CONCLUSION

There is a significant disconnect between the apportionment of most of the sales, profits and capital in our universe and the presence of the most negative environmental impacts. While most of the negative environmental impacts of apparel are associated with the manufacturing stages, most of the profits and capital are associated with the retail stage.

Although some fashion retailers do have some degree of backward integration, and so also act further up the supply chain, it is more common for these steps to be contracted out. This means that fashion brands have limited direct control of most of the negative environmental impacts of the industry.

This means that while retailers can act to move their own operations to a sustainable model, real change in the industry will only come when brands and retailers help drive action across the whole supply chain.

We call on investors to pressure retailers to invest in their supply chains to improve environmental impacts. Our own work detailed in our '<u>Easy Unpickings</u>' report showed that such investments can generate significant environmental benefits and pay back very quickly. We estimated that an average one-off investment of USD 455,000 produced annual savings of USD 369,500, meaning an average payback period of 13.8 months.

Retailers should act for two reasons:

Firstly, if the industry is to meet its net zero commitment, then significant change is needed now, in the near-term and this can only come from direct involvement by brands and retailers to improve the supply chain.

Secondly, regulators are increasingly scrutinising the sustainability claims of retailers. If brands want to chase sustainably-minded consumers, they must be able to show that their claims can be substantiated. This will require them to have better visibility of their suppliers to ensure they improve their environmental footprints.

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### ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries. Our mission is to create significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

# **TEXTILES TRACKER**

Textiles Tracker investigates the impact that financial institutions have in funding publicly listed companies across the Textiles, Apparel & Clothing sector. Fast Fashion has created cheap and abundant clothing globally, but the natural capital cost has been high, with toxic production practices, degradation of natural resources, massive and growing waste as well as labour injustice. By providing information and analysis on these problems, placing a value on them and quantifying the negative impact on profits and investor returns, Textiles Tracker will support and stimulate a transition to greater sustainability in the industry. Textiles Tracker identifies the nodes in the textiles supply chain that are creating the greatest damage, analyses their financial value, provides transparency of ownership and, through owners and investors, pressures for change in industry practices.

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