Spinning / Texturing
Weaving / Knitting
Finishing

INTERNATIONAL PRODUCTION COST COMPARISON 2023

INTERNATIONAL TEXTILE MANUFACTURERS FEDERATION
FÉDÉRATION INTERNATIONALE DES INDUSTRIES TEXTILES
INTERNATIONALE VEREINIGUNG DER TEXTILINDUSTRIE

ITMF

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Spinning/Texturing/Weaving/Knitting/Finishing

The world's primary textile industry is engaged in a continuing modernization and restructuring process, spurred by the advent of entirely new or more sophisticated textile technology together with increasing competition for markets and products. Originating in the industrialized countries, the process spread to newly industrialized and to developing countries, many of which have turned to the latest textile technologies as a means of ensuring their competitive position, especially in export markets. This trend has been clearly evidenced by the survey on world textile machinery shipments conducted by ITMF since 1974 (International Textile Machinery Shipment Statistics).

ITMF's International Production Cost Comparison, first published in 1979, tracks the impact of increasing capital intensity in the primary textile industry. This comprehensive study analyses **manufacturing costs across yarn, fabric, and finished fabric production**, breaking down various cost elements to highlight their relative importance and influence on total expenses. The publication serves as a benchmark for production costs in each textile segment, recognizing that real-world manufacturing involves diverse equipment ranging from highly capital-intensive machinery (as assumed in this study) to depreciated, old, or second-hand equipment, which creates significant variations in manufacturing costs across the industry.

In its latest edition, the publication has been expanded to also present the **carbon footprint** alongside the total cost of the finished products, covering the **entire value chain** for each product segment. This addition provides a more holistic view of production impacts, supporting the industry's increasing focus on sustainability and environmental performance.

It is important to note that the cost patterns in this report reflect only one element of the final sales price for yarns and fabrics—production costs. Other pricing factors such as overheads, incentive schemes, transport and insurance, and import/export duties are not covered here. Furthermore, competitiveness also depends on non-cost factors including quality, style, reliability, delivery speed, and flexibility, which fall outside this study's scope. Therefore, any international comparison of this nature can only approximate real market conditions. Additionally, fluctuating macro-economic factors—wage levels, inflation, interest and exchange rates, and tariffs—prevent calculation of production costs that remain valid over extended periods. The cost data presented are therefore valid at the beginning of the investment period, with their accuracy in later phases depending on subsequent macro-economic developments.

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Wiedingstrasse 9	Phone	(+41-44) 283 63 80
CH-8055 Zürich	Fax	(+41-44) 283 63 89
Switzerland	E-mail	secretariat@itmf.org
	Web	www.itmf.org

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Errata

Due to a mistake in calculation parameters, the 2021 edition of the IPCC (IPCC-2021) contained erroneous data for total production costs in the following processes:

1. CO - Knit - Single Jersey - Discontinuous (JET)
2. CO - Knit - Lapique - Continuous Open Width (COW)

Download the detailed correction file here.

Scope and Coverage

Geographical Coverage

Geographically, the study covers Bangladesh, Brazil, Central America (i.e., estimates based on partial data from El Salvador, Honduras, and Guatemala), China, Egypt, India, Indonesia, Italy, Korea Rep., Mexico, Pakistan, Türkiye, the USA, Uzbekistan and Vietnam. These countries/regions all actively participate in international textile trade as exporters and/or importers. The countries/regions are further referred to as countries.

Methodology

Every year, the machinery manufacturers mentioned in the acknowledgment are conducting numerous cost calculations for prospective clients around the world. Based on factors supplied by these clients, manufacturing costs are measured and used in the evaluation of investment projects. By using the same approach, ITMF's International Production Cost Comparison attempts to simulate reality within the limits outlined in the introduction. Cost factors for the participating countries are supplied by individual companies, consultants and textile trade associations. They are carefully reviewed by the machinery manufacturers cooperating in the study and represent average cost factors for the country concerned. The results are presented in a way that enables the reader to see the repercussions on the costing structure of diverging factors (e.g. labour or capital costs).

Product Coverage

The product base in spinning is a Ne 30 (Nm 50 / 20 tex) combed ring yarn made of 100% cotton of 1-1/8" staple length and a Ne 20 (Nm 33 / 30 tex) carded open-end yarn made of 100% cotton of 1-1/16'' staple length. In texturing, it is a 100% polyester POY 75 f72 den textured yarn. The cotton yarns are woven into a "print cloth" fabric of 27.6/27.6 threads per cm (ring yarn) and a ''print cloth'' fabric of 24.0/24.0 threads per cm (rotor yarn), and a textured fabric of 38.0/31.0 threads per cm. Fabric dimensions are 168 cm grey width (cotton ring and rotor yarn), and 177 cm grey width (textured yarn). In knitting, the fabric constructions are of the Single Jersey type, 192 cm unfinished width (cotton ring) and of the Lapique type, 224 cm (cotton rotor) and of the Interlock type, 190 cm unfinished width (textured yarn), resp. For finishing the products cover the cotton woven fabric (grey weight 190 g/m), the cotton knitted fabric Single Jersey (grey weight 230 g/m) and Lapique (grey weight 358 g/m) as well as the polyester knitted fabric Interlock (grey weight 209 g/m).

Mill Type and Size

The cost calculations assume that the cotton yarn is spun in a new mill equipped with 36'480 Rieter ring spindles producing 915 kg per hour and 3'072 Rieter open-end rotors producing 962 kg per hour (incl. cost of bale opening, blowing room, carding, draw frame, (combing), flyer, spinning and winding). In texturing we are considering a plant size of 10 set Barmag eFK Machines, each having 384 working positons and cam shaft winding. The average operation speed is 800 m/min at 95% efficiency with 5 kg final packages. In weaving, 200 Picanol air-jet looms OmniPlus-i Connect P-190 are used to produce 22.5 meters of print cloth (ring yarn) per machine and hour (94% machine efficiency). 150 air-jet looms of the same type produce 24.6 meters of print cloth (rotor yarn) per machine and hour (94% machine efficiency) and 60 air-jet looms of the same type produce 20 meters of print cloth (rotor yarn) per machine and hour (95% machine efficiency). For knitting, Single Jersey (Lapique), 17 (13) circular knitting machines of Mayer & Cie, type Relanit 3.2 II, 30 inch diameter, gg 24, 96 feeders, with an output of 25.3 (31.4) kg per machine and hour (85% machine efficiency) are assumed, while for knitting Interlock, 8 circular knitting machines of Mayer & Cie, type OV 3.2 QC, 30 inch diameter, gg 28, 96 feeders, producing 10.7 kg per machine and hour (85% machine efficiency), are needed. In finishing, the continuous open width process route for cotton woven fabric is

composed of 2 singeing machine, 1 BENNINGER bleaching machine, 1 BENNINGER mercerizing machine, 2 BENNINGER hotflue, 1 BENNINGER PAD steam, 1 stenter frame, 2 sanforizing machine, 4 inspection tables with a production of 69'120 meter per day. The continuous open width process route for cotton knitted fabric is composed of 2 slitters, 1 BENNINGER Trikoflex pre-treatment range, 1 stenter frame, 2 BENNINGER CPB dyeing stations, 1 BENNINGER Trikoflex washing range, 1 belt dryer with infeed stenter, 2 compactors, and 4 inspection tables with a production of 20 tons a day. The discontinues process route for cotton knitted fabric entails 6 BENNINGER FabricMaster hydrodynamical jets, 2 slitters, 1 belt dryer with infeed stenter, 2 compactors, and 6 inspection tables with a production of 15 tons a day. The discontinues process route for polyester knitted fabric entails 2 slitters, 1 BENNINGER Trikoflex washing range, 1 stenter frame, 4 BENNINGER FabricMaster hydrodynamical jets, 2 rope opener, 1 belt dryer with infeed stenter and 6 inspection tables with a production of 15 tons a day. (s. details below each cost factors table on p. 9-16).

Efficiency Standards

Rates of output are assumed to be identical for all 15 countries concerned. The different efficiency standards prevailing in the countries have been taken into consideration by varying the number of workers required to obtain the output levels indicated.

Reference Period

The calculations are based on cost factors that prevailed in the 1st quarter of 2023. Cotton/polyester prices are those of the last week of February 2023.

Exchange Rates

In view of rapidly changing currency relationships, especially in reference to the US dollar (USD), production cost factors are surveyed in domestic currencies, and converted to USD for ease of comparison. Average exchange rates for Q1/2023 were employed, as outlined below:

Bangladesh	1 USD =	106.01	Taka
Brazil	1 USD =	5.19	Real
China	1 USD =	6.84	Yuan Renminbi
Egypt	1 USD =	30.51	Egyptian Pound
El Salvador	1 USD =	8.74	El Salvador Colon
Guatemala	1 USD =	7.81	Guatemala Quetzal
Honduras	1 USD =	14.86	Honduras Lempira
India	1 USD =	82.26	Indian Rupees
Indonesia	1 USD =	15’240.65	Indonesian Rupiah
Italy	1 USD =	0.93	Euro
Korea, Rep.	1 USD =	1’274.95	Won
Mexico	1 USD =	18.60	Mexican peso
Pakistan	1 USD =	271.09	Pakistani Rupee
Türkiye	1 USD =	18.87	Turkish New Lira
Uzbekistan	1 USD =	11’339.58	Uzbekistan Som
Vietnam	1 USD =	23’566.17	Dong

All values for Cost Factors, Manufacturing Costs and Total Costs are expressed in USD