ETENE Sectoral Report

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Banco do Nordeste

TEXTILE INDUSTRY

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1 INTRODUCTION

This report depicts the recent performance of textile industry in Brazil, with an emphasis on Banco do Nordeste's (the federal development bank of Northeast Brazil) workspace, which includes the States of Northeast Brazil plus North of Espírito Santo and Minas Gerais States.

For the latter two, analyzes shall be made if data are available. The report shows information on the characteristics of textile industry and provides an overview and prospective analysis of the activity in the world and in Brazil, particularly in Northeast region.

2 TEXTILE INDUSTRY DESCRIPTION

Textile and garment production and distribution chain ranges from textile fibers production to finished and ready-made goods, including distribution and marketing services.

Textile industry in production chain comprises spinning (threads), weaving and knitting (fabrics) and processing (dyeing, stamping, laundry etc.). Textile industry is supplied by raw materials, composed by natural fibers, cotton and flax for instance, synthetic filaments (petroleum derivatives such as polyester, polypropylene, nylon and acrylic) and artificial ones (from organic materials such as viscose and acetate rayon, originated from cellulose).

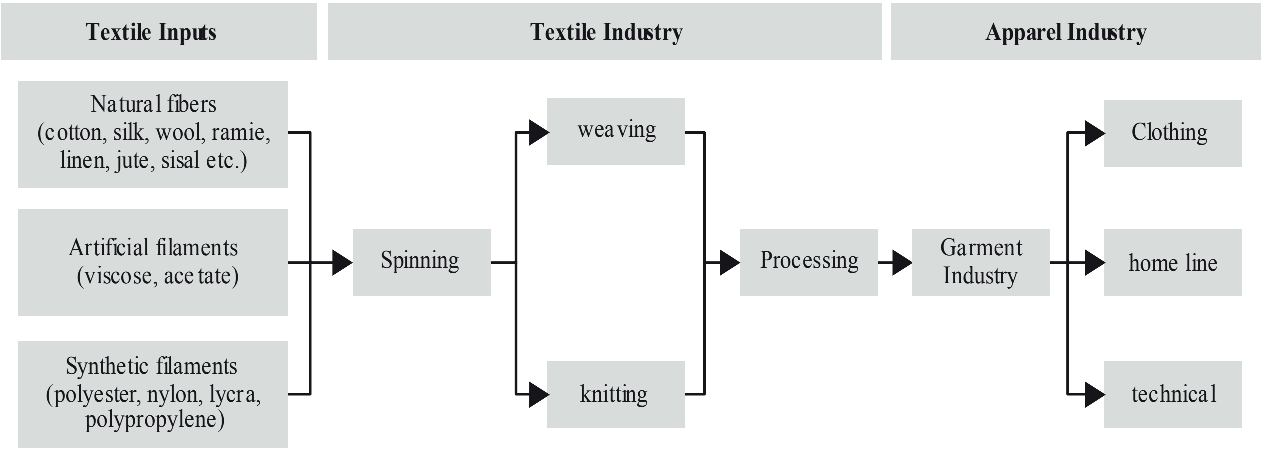
A further link are the manufacture activities of clothing and accessories, which comprise the production of apparel parts, professional clothing and accessories such as ties, hats, caps, belts and handkerchiefs.

This analysis covers textile activities of those contained in CNAE 2.0 (National Economic Activities Classification), such as, in addition to of aforesaid products, bedding, bathing and kitchen wares, pillows, duvets, pillows, curtains and sleeping hammocks.

Productive process of textile chain begins with raw material (fibers and filaments) being processed in spinning mills, going to flat weaving mill or to knitting and at last to finishing.

Each of these steps has their own characteristics and has discontinuity between them. Thus, the result of each stage is the main input to the following. Each of the main links is subdivided into several related operations but also independent from each other. The independence of the main phases and stages inherent in each of them stems from the fact that each step prepares an intermediate product, although in conditions predetermined by the production system. Figure 1 shows a configuration of production flow in textile and apparel industry.

Figure 1 - Textile and apparel chain production flow



Source: Adapted from Costa e Rocha (2009).

The discontinuity of operations allows flexibility in production organization and the existence of firms with production scales and different technological upgrade levels. The basic technology of production process is incorporated into equipments, without no access problems. The technological evolution occurred in the production process of textile industry comes from advances made in production inputs, especially in development of new synthetic fibers, as well as in machinery and equipment used throughout the process, which characterizes the textile industry as incorporator of developed technology from other industries.

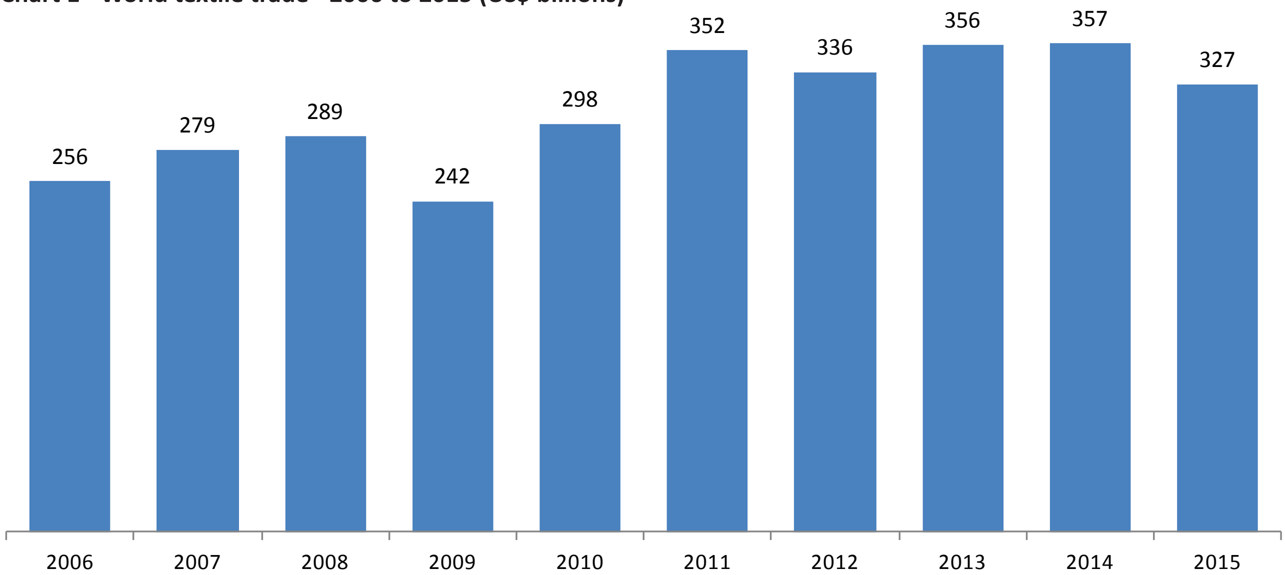
A striking feature of textile sector is the high degree of verticalization, especially in spinning and weaving, spinning and knitting and knitting and garment links, as well a small number of companies which have all the chain links integrated vertically. As an example of large verticalized companies that operate in Northeast region, we can cite Vicunha and Coteminas.

3 WORLDWIDE OUTLOOK

3.1 World Market

World's textile industry has constantly evolved, including their international exchanges. The world trade of textile fiber - natural and chemical (synthetic /artificial products) - increased by 27.7% between 2006 and 2015, last data available, with average growth of 2.76% per year, from US$ 256.0 to US$ 327.0 billion (Chart 1).

Chart 1 - World textile trade - 2006 to 2015 (US$ billions)



Source: Made by BNB/ETENE from LAFIS (2017) data.

3.2 International Trade

According to Lafis report (LAFIS, 2017), from a list of countries producing textiles and clothing in 2015, Asia stands out, concentrating around 70% of world production. China alone owns 54% of world's textile production and 49.7% of garment according to 2013 data. Secondly from the list comes India, with 7.1% and 7.9% market share in textile and clothing industry, respectively. Brazil appears in fifth position of the largest textile producers and fourth of clothing production, with 2.7% and 2.5% market share, respectively.

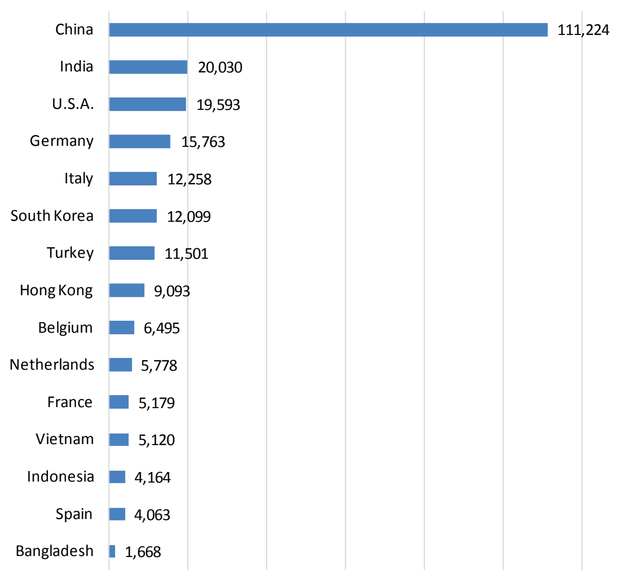
Brazil, despite being among the five largest producers (2013 data) and be representative in textiles and clothing consumption, its insertion in global trade is greatly reduced. Brazilian 2015 imports was as the 25th highest in ranking, totaling US$ 5.5 billion. In exports, the performance is even lower, being only the 40th position in ranking of exporters. In general, Brazil's market share in textiles and clothing trade is equivalent to about 0.3% of total trade between countries.

China, including Hong Kong and Macao, is by far the largest exporter of textile products, including fibers. Secondly, there is India, followed by the United States and Germany in 2015 (Chart 2).

Concerning world imports from industry textile, the United States leads the way. Other great importers of textile products are China, Vietnam and Germany (Chart 3).

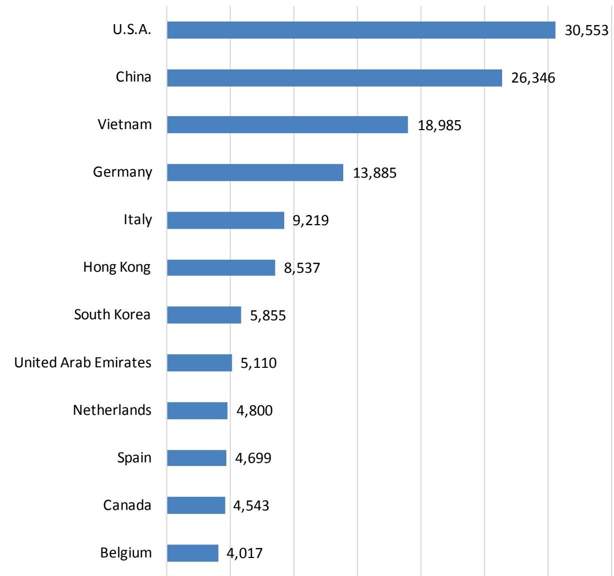
Due to Brazil's small share of textile industry, it can be said that the country is not in a position to influence prices on world market. Thus Brazil should preferably work in niche markets, due uneasy price competing with producers from India, and mainly from China, in most products.

Chart 2 - 15 countries with the largest world textile products exports - 2015 (US$ millions)



Source: Made by BNB/ETENE from LAFIS (2017) data.

Chart 3 - 12 countries with the largest world textile products imports - 2015 (US$ millions)



Source: Made by BNB/ETENE from LAFIS (2017) data.

4 BRAZIL AND NORTHEAST REGION'S OUTLOOK

4.1 Importance of textile industry in Brazil and Northeast's economy

Brazil's textile industry, whose industrial transformation value, an added value measurement, corresponded to R$ 16.3 billions in 2015 current prices, represented 1.5% of overall industrial transformation value and 3.6% of the country's transformation Industry staff, according to IBGE (2017c) and MTE (2017). Northeast has greater representativeness, 2.3% of regional industrial transformation value and 4.6% of regional manufacturing jobs.

Being a link in textile production chain, textile industry generates demand for textile raw materials, including cotton, and it also means an input used in garment industry which generates employment and income in these activities and in others, indirectly.

4.2 Distribution of textile industry in Brazil

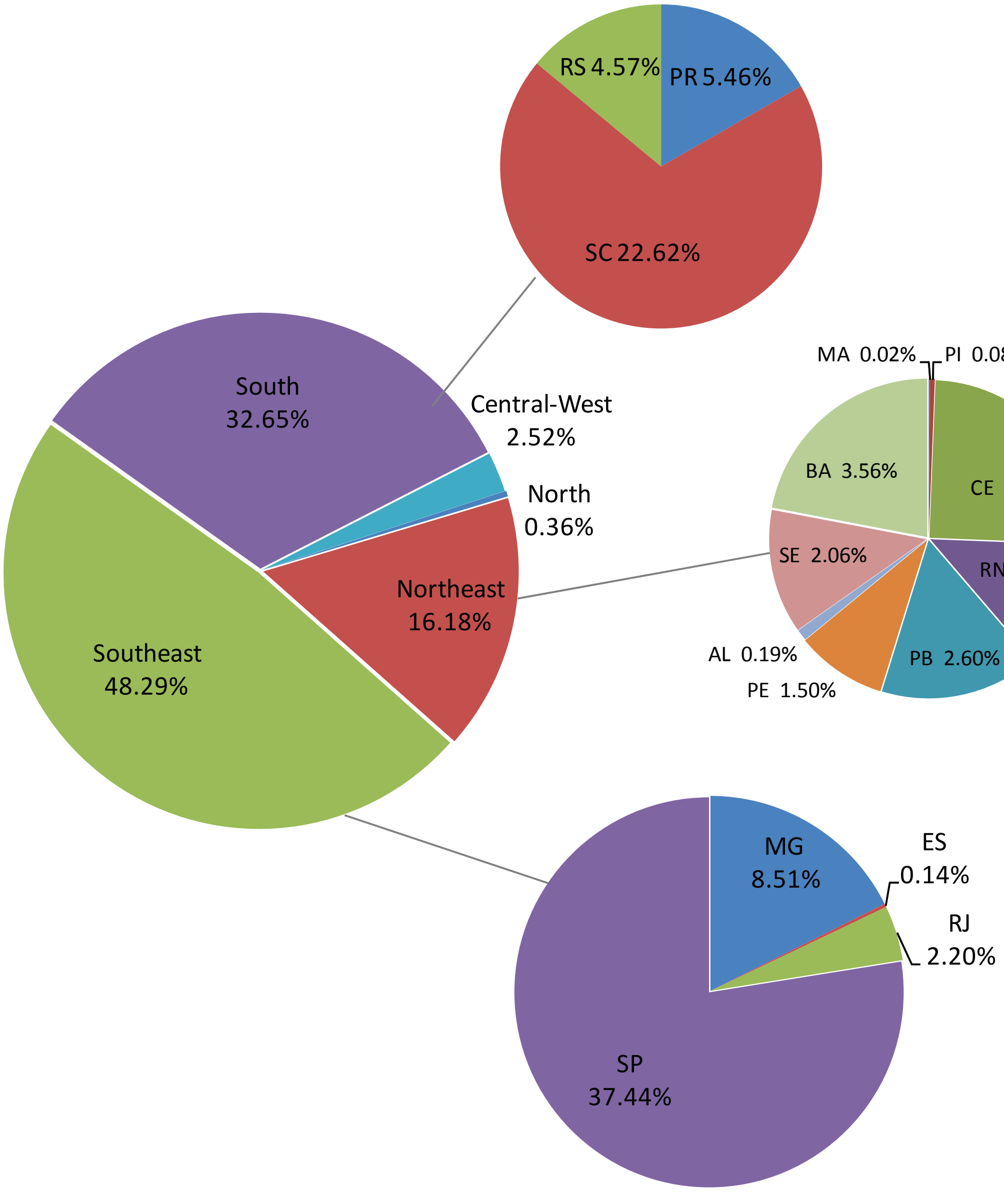
4.2.1 Gross value of industrial production

Gross value of industrial production, which includes the consumption of goods and services of Brazil's textile industry corresponded to almost R$ 40 billions in 2015 current prices, according to latest information published by IBGE (2017c). This is equivalent to 1.6% of Brazil's gross value of industrial production.

From R$ 40 billions above, Southeast and South together represents around 80.9%, while Northeast got 16.2%. Central West (2.5%) and North (0.4%) are not very representative in this industrial activity (Chart 4).

Among States, São Paulo (37.4%) and Santa Catarina (22.6%) are the main producers. In Northeast, the most representative States in industry are Ceará (4.0%), Bahia (3.6%), Paraíba (2.6%) and Rio Grande do Norte (2.1%).

Chart 4 – Textile industry – Regions and States share in Brazil's gross value of industrial production – 2015 (%)



Source: Made by BNB/ETENE from IBGE (2017c) data.

4.2.2 Formal labor

Southeast (49.3%) and the South's (29.5%) share of employed formal labor in Brazil's textile industry confirms the assertion that the industry is focused on these two regions by 2015 (Table 1). Northeast shares 17.3% of formal jobs in textile industry.

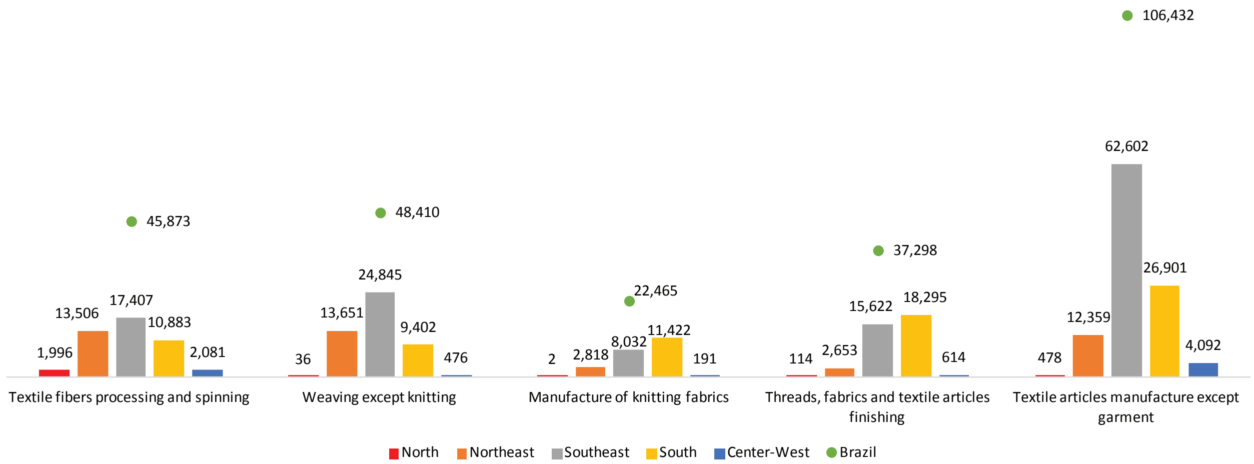
According to Chart 5, among groups of activities of textile industry (corresponding to CNAE 2.0), Northeast is proportionally strong in the segment of processing and spinning of textile fibers, with 30% of the region's textile formal jobs in this activity, Weaving except knitting (30%) and Manufacture of textile articles except garment (27.5%).

Table 1 – Textile industry - formal employment in Brazil and its regions and percentage share in 2015

	North	North-east	South-east	South	Center-West	Brazil
Nr. formal jobs	2,626	44,987	128,508	76,903	7,454	260,478
Share (%)	1.0	17.3	49.3	29.5	2.9	100.00

Source: Made by BNB/ETENE from MTE (2017) data.

Chart 5 - Textile Industry - formal jobs by Group - Brazil and regions - 2015



Source: Made by BNB/ETENE from MTE (2017) data.

The Brazilian Micro and Small Business Support Service - SEBRAE adopts size classification of industrial enterprises according to number of employees, whereas:

Micro – up to 19 employees;

Small – from 20 to 99 employees;

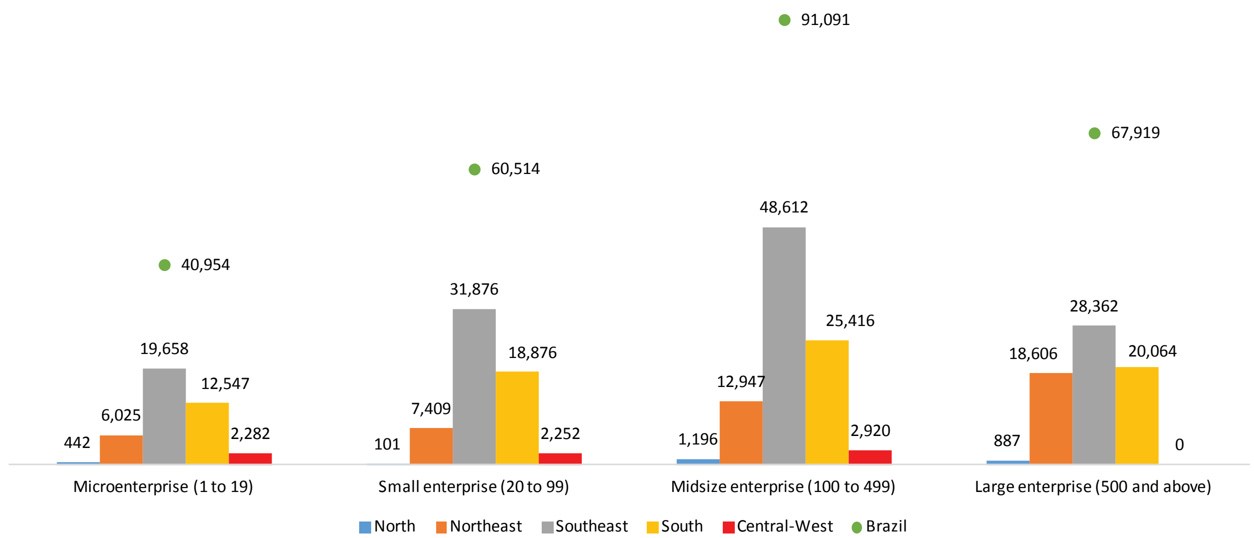
Midsize – from 100 to 499 employees;

Large – 500 or more employees.

Based on SEBRAE classification, in 2015, the medium and large firms respond altogether by 61.0% of the 260 thousand formal jobs of Brazilian textile industry, while micro and small enterprises are responsible for 39.0% of total (Chart 6).

From 44,987 jobs generated in 2015 in Northeast's textile industry, 29% came from midsize and 41% from large companies. In Brazil, from the existing 67,919 jobs in large companies in textile industry, 27% of these were in Northeast.

Chart 6 - Textile Industry - formal jobs by enterprise size - Brazil and regions – 2015



Source: Made by BNB/ETENE from MTE (2017) data.

Among main textile agglomerations in Brazil, Vale do Itajaí (SC), Metropolitana de São Paulo (SP) and Campinas (SP) stand out. Together, these three mesoregions account for 36% of textile industry jobs. In Banco do Nordeste's workspace, the main textile cluster is in Metropolitana de Fortaleza (CE), which gathers 12.4 thousand formal employees. Also standing out are clusters located in mesoregions of Mata Paraibana (PB), Leste Potiguar (RN), Norte de Minas (MG), Leste Sergipano Sergipe (SE), Agreste Pernambucano (PE) and Metropolitana de Salvador (BA) (Table 2).

Spatial location of industry clusters can best be seen by Figure 2 and Figure 3 which depict the number of jobs in Brazil's mesoregions. As observed in Table 2, focusing

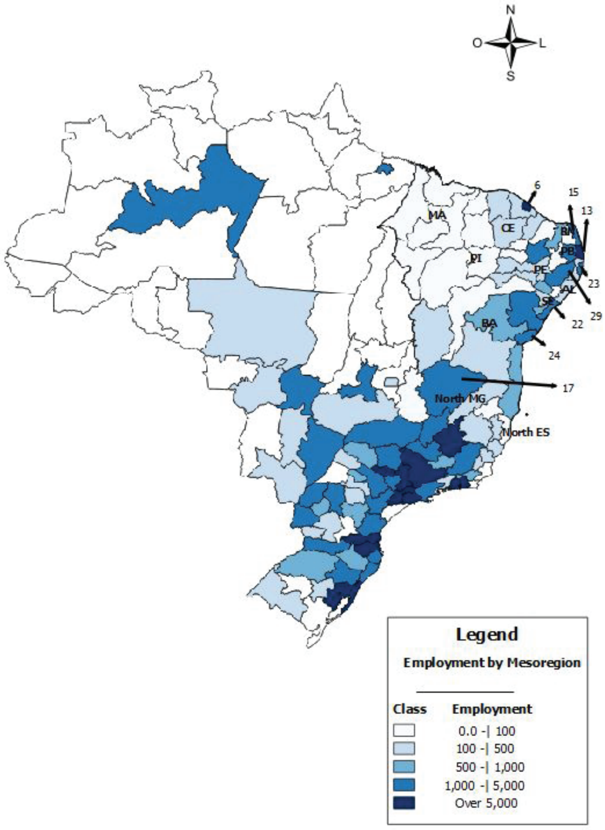
Northeast, only Metropolitana de Fortaleza and Mata Paraibana mesoregions had more than 5,000 jobs in textile industry in 2015.

Table 2 – Brazil - Mesoregions with more than 2,000 Employment in textile Industry in 2015

Geografic Mesoregions	State	Employees
01 - Vale do Itajaí	SC	34,734
02 - Metropolitana de São Paulo	SP	30,110
03 - Campinas	SP	29,083
04 - Norte Catarinense	SC	13,182
05 - Metropolitana de Fortaleza	CE	12,419
06 - Macro Metropolitana Paulista	SP	10,187
07 - Araraquara	SP	8,531
08 - Sul/Sudoeste de Minas	MG	6,324
09 - Metropolitana de Belo Horizonte	MG	6,110
10 - Metropolitana de Porto Alegre	RS	5,821
11 - Metropolitana do Rio de Janeiro	RJ	5,109
12 - Mata Paraibana	PB	5,077
13 - Piracicaba	SP	4,691
14 - Leste Potiguar	RN	4,445
15 - Norte Central Paranaense	PR	4,255
16 - Norte de Minas	MG	4,226
17 - Zona da Mata	MG	4,166
18 - Oeste de Minas	MG	3,955
19 - Metropolitana de Curitiba	PR	3,872
20 - Itapetininga	SP	3,245
21 - Leste Sergipano	SE	2,940
22 - Metropolitana de Recife	PE	2,907
23 - Metropolitana de Salvador	BA	2,847
24 - Centro Goiano	GO	2,834
25 - Sul Catarinense	SC	2,567
26 - Noroeste Paranaense	PR	2,489
27 - Vale do Paraíba Paulista	SP	2,149
28 - Agreste Pernambucano	PE	2,126
29 - Nordeste Rio-grandense	RS	2,061
30 - Others	-	38,016
TOTAL	-	260,478

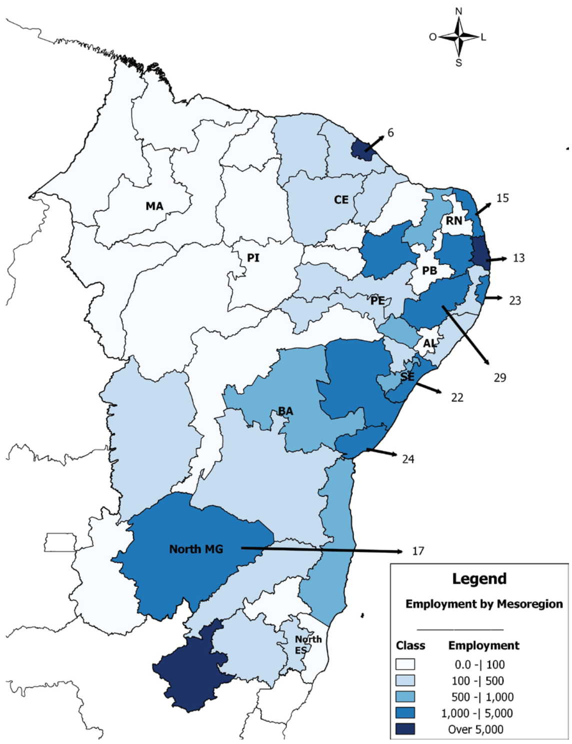
Source: Made by BNB/ETENE from MTE (2017) data.

Figure 2 – Brazil - Textile industry employment map by Mesoregion in 2015



Source: Made by BNB/ETENE from MTE (2017) data.

Figure 3 – Banco do Nordeste's workspace – Textile industry employment map by Mesoregion in 2015

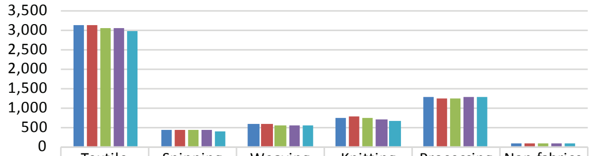


Source: Made by BNB/ETENE from MTE (2017) data.

4.2.3 Brazil textile firms in activity

The number of textile firms in Brazil has grown since 2000, when 2,471 companies had been under operation, up to 2,707 in 2005, 3,014 in 2010 and 3,045 companies in 2014. However, in 2015 there was an absolute decrease, going down to 2,983 textile companies. It can be observed in Chart 7 that among the textile segments, those with the greatest retraction were spinning and knitting firms, between 2011 and 2015.

Chart 7 – Brazil: Productive units in textile industry, total and by segment - 2011-2015



	Textile	Spinning	Weaving	Knitting	Processing	Non-fabrics
2011	3,118	438	586	740	1,266	88
2012	3,118	440	579	764	1,247	88
2013	3,045	433	557	740	1,227	88
2014	3,045	416	558	695	1,288	88
2015	2,983	391	550	682	1,272	88

2011 2012 2013 2014 2015

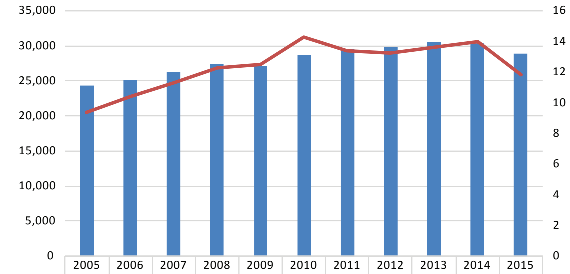
Source: Made by BNB/ETENE from LAFIS (2017) data.

4.3 Textiles and garment consumption in domestic market

Brazilian domestic market showed, between 2005 and 2015, continued growth in per capita consumption of textile and apparel products, but declined in 2015, reaching 11.1 kg/inhab. (Chart 8). However, per capita consumption of textile products in Brazil is still far short of those in developed countries, and it can be presumed that domestic demand may still grow significantly. It should be noted that textile products have high income elasticity, meaning they are sensitive to changes in population purchasing power.

Textile products consumption in Brazil has increased well above population growth. Besides as it is observed since 2005, variation in consumption per inhabitant of textiles and garment goods has matched in average, almost the same variation of average income.

Chart 8 – Brazil – Average nominal income (R$/inhabitant) and consumption (Kg/inhabitant) of textiles and clothing goods - 2005-2015

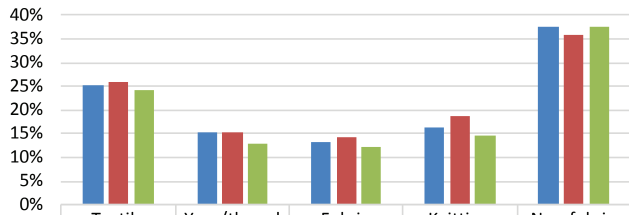


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average income	24,402	25,074	26,298	27,339	27,020	28,763	29,599	29,887	30,512	30,282	28,876
Consumption/inhab.	9.4	10.4	11.3	12.3	12.5	14.3	13.4	13.2	13.6	14.0	11.8

Source: Made by BNB/ETENE from LAFIS (2017) data.

Chart 9 shows the proportion of textile products imports in domestic consumption. The average of textile imports/textile consumption in Brazil was around 25% for the period 2013-2015. Non-fabric segment had the highest percentage of imported, around 37% of Brazilian consumption. In fact, the segment with the lowest level of imports was fabric, about 13%. It is important to stress that almost all the segments had decreasing import shares during the period under analysis.

Chart 9 – Brazil - percentage share of textile products imports in the consumption of textile products - 2013-2015



	Textile	Yarn/thread	Fabric	Knitting	Non-fabric
2013	25.3%	15.3%	13.3%	16.2%	37.6%
2014	25.9%	15.3%	14.4%	18.9%	36.0%
2015	24.3%	12.8%	12.4%	14.8%	37.6%

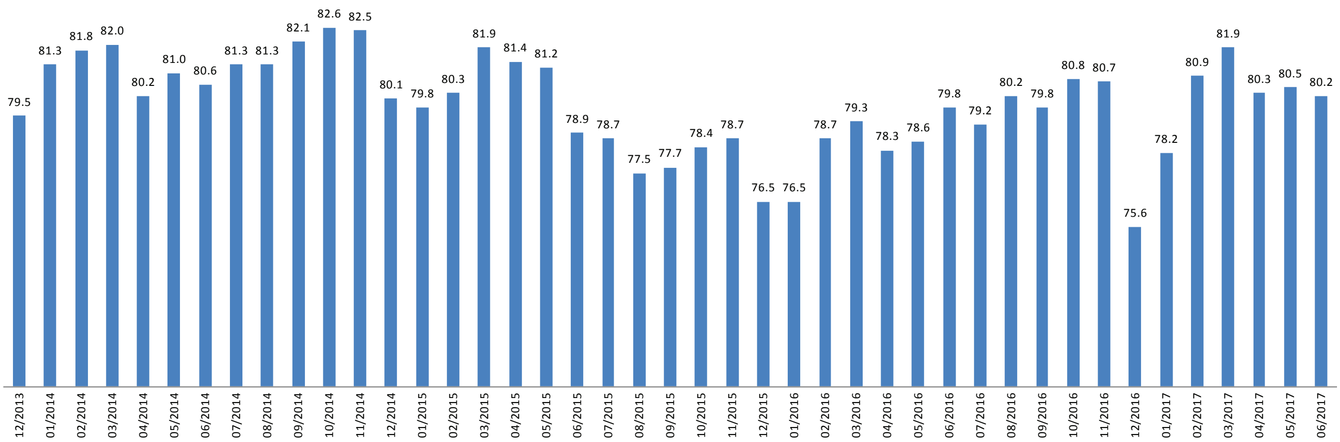
2013 2014 2015

Source: Made by BNB/ETENE from LAFIS (2017) data.

4.4 Level of installed capacity utilization

Utilization of installed capacity of Brazilian textile industry (Chart 10) had declined discontinuously between October 2014 and December 2015 and since then, it has begun recovery, confirming also recovery of textile physical production in the period. In December 2016, textile industry reached the lowest level. Thereafter, it has shown recovery and it is expected that in future such level of capacity utilization will remain, allowing for opening of new industrial plants.

Chart 10 - Installed capacity utilization of Brazil's textile industry - (average %) - December 2013 to June 2017

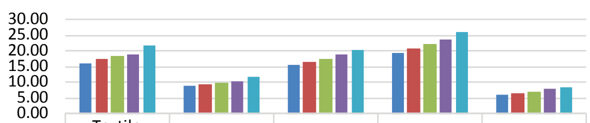


Source: Made by BNB/ETENE from CNI (2017) data.

4.5 Average prices

Average production prices of domestic textile industry had ascending performance between 2011 and 2015. For textile industry, the average annual growth rate in the period was approximately 8%, yarn 7.4%, fabric 6.6%, knitting 7.4% and non-fabric 9%.

Chart 11 – Brazil - Average prices of segment products and of textile industry - 2011-2015 (R$/kg)



	Textile industry	Yarn	Fabric	Knitting	Non-fabric
2011	16.16	8.65	15.60	19.44	6.06
2012	17.36	9.23	16.64	20.88	6.55
2013	18.12	9.73	17.53	22.25	7.09
2014	18.83	10.34	18.70	23.64	7.78
2015	21.86	11.49	20.13	25.85	8.56

2011 2012 2013 2014 2015

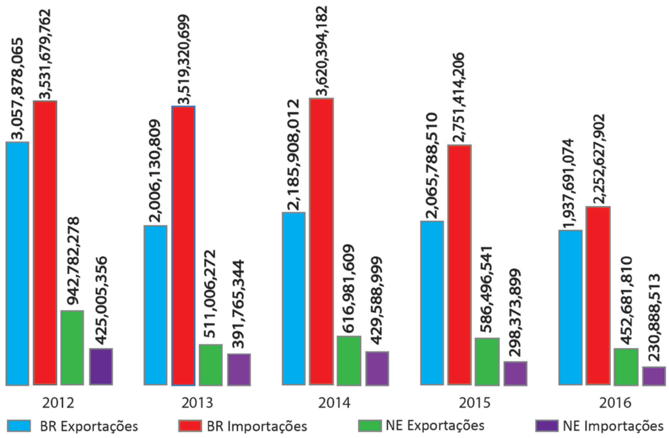
Source: Made by BNB/ETENE from LAFIS (2017) data.

4.6 Textile Foreign Trade

From 2012 until 2016, according to Chart 12 that foreign balance trade of Brazil's industrial textile products has had successive deficits, being the largest ones in 2013 and 2014. On the other hand, Northeast has reached successive surpluses, whose apex happened in 2012, when it reached approximately US$ 518 millions.

Decrease in Brazil's textile products exports and at the same time increase of its imports reveals loss of competitiveness vis-à-vis foreign manufacturers, caused, in part, by the appreciation of Brazilian currency, although there are structural problems (such as logistic) in domestic and regional textile industry that make it difficult for the country's producers to play competitively in foreign and domestic markets.

Chart 12 – Textile products exports and imports from Brazil and Northeast from 2012 to 2016 - US$ 1.00



Source: Made by BNB/ETENE from FUNCEX (2017) data.

5 PROSPECTIVE ANALYSIS

5.1 Industry prospects – Lafis's report

According to textile and garment industry report from Lafis (LAFIS, 2017), after two years of GDP decline, projections for 2017 point to a year of slight economic growth (0.3%/2016).

Lafis's outlook for 2018 indicates a favorable economic scenario, as more robust and continuous. For this year, it is expected that the reduction of unemployment and the increase of wage mass give back household purchase power that had been lost in previous years. Thus, Lafis expects that the economy shows consistently growing (+1.6%/2017). The industrial sector should have a good performance in 2018 by presenting growth of 2.2% compared to 2017. This expansion should result, above all, of good performance of transformation industry, which is at a very low level of capacity utilization.

After a long time period of GDP below its potential, Lafis expects that in the long term the GDP will have a very close performance to potential GDP, showing expansion of 2.9%, 2.6% and 2.7%, in 2019, 2020 and 2021, respectively. It is certain that Lafis projections point to Industry growth in the period analyzed, however, it is perceived that the rhythm of this trajectory has a declining rate of increase. The hypothesis for this trend is based on the possibility of that the industry still continues to suffer from some problems of the so-called "Brazil's Cost". Therefore, Lafis does not believe that until 2021 problems as an insufficient logistic infrastructure system to drain production as well as a slow and complex tax system will be fully overcome.

For textile and garment sectors in 2017, it is expected a slight increase in sales, but not yet a good recovery of the sector's revenues. The impacts of the economic recession and the unemployment rate in Brazil will still tend to have some impact on household consumption. This year, since there will be gradual resumption of domestic demand, the industry should face pressure of imports, since Real has appreciated against US Dollar, imports with more affordable prices end up captivating consumers which in the crisis end up looking for lower prices.

In current scenario, it can be seen improvement of economic conditions which will encourage consumption from the second semester, as a reflection of substantial reduction in basic interest rate of the economy by Central Bank, among other microeconomic measures, which should reduce the cost of credit in the country. It is worth noting that the Federal government decision, which authorized the release of the FGTS funds from the inactive workers, should contribute to the reduction of households' indebtedness. Thus in 2017, given the projection of low growth of Brazilian economy, textile industry revenues should increase by 4.6%.

For 2018, a still uncertain scenario is projected due to elections, but it should already show some improvement in macroeconomic indicators and possibly in textile and garment industry data, according to the weak basis of comparison. In addition, it is expected that domestic market will have a willing consumption. It is also expected that textile and garment industry will be better structured and more competitive after the long period of crisis, which should boost growth in 2018.

In that year, fall in inflation rate should help return of families' purchasing power, which allows real wage gains, despite high unemployment rate. From the point of view of supply, period of crisis should generate productivity gains in textile companies, which tend to invest in technologies and diversify portfolio with new products, collaborating for a potential fall in costs and final price on long run, besides creation of new products that captivate consumers.

Given this scenario and betting on a more consistent performance of the Brazilian domestic market recovery only in 2019, Lafis projects growth in textile and garment sector sales growth by 6.3% in 2018.

For long run, the prospects are for growing industry revenue, according to Lafis's outlook for main macroeconomic variables to Brazil. 2019 should be marked by the highest growth of the country's mass wages and greater expansion of trade and therefore industry should benefit from this increase. In addition, it is estimated that businessmen and consumers' confidence are higher due to dissolution of post-election economic political uncertainties of 2018. In this way, business environment becomes more stable, which may increase the propensity of families to make new debts raise the value on clothing annual spending. Lafis estimates growth by 8.0% for textile and garment industry revenue in 2019.

For 2020 and 2021, Lafis estimates continuity the acceleration of economic activity, lesser unemployment rate level, which should boost industry sales. On the other hand, there should be relief of imports barriers, since it is estimated appreciation of Real against dollar, which can increase consumption of imported goods from industry, with more attractive prices for domestic market. Finally, the respective projections for revenue growth in 2020 and 2021 are 5.6% and 4.9%.

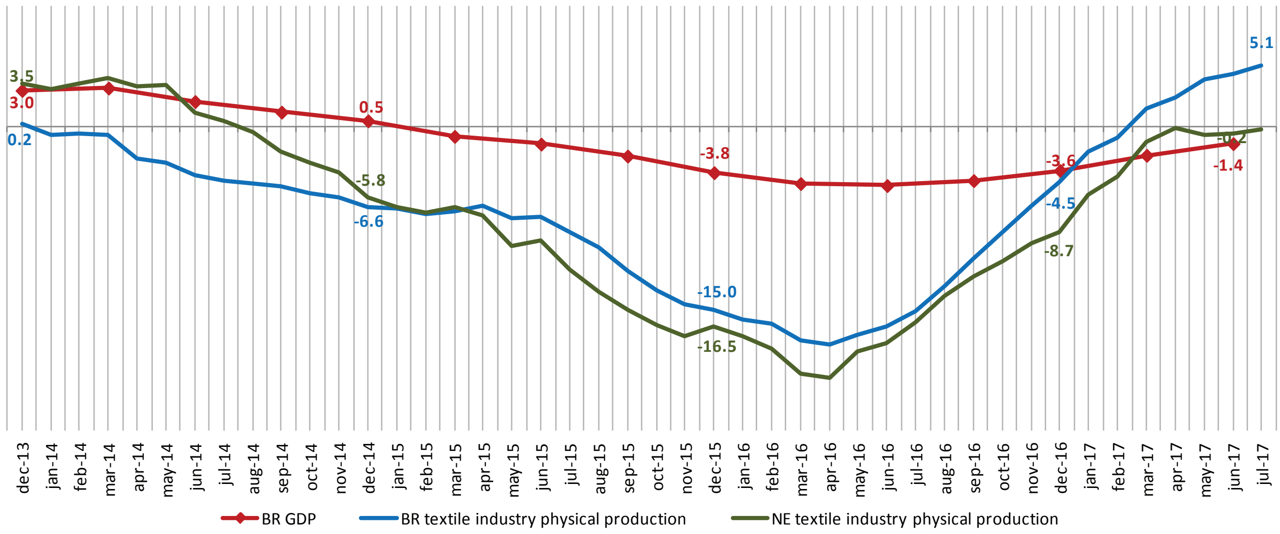
5.2 Comparative trends in textile industry for Brazil, Northeast and selected States

An important issue is to understand is the trend of textile production in Brazil, Northeast, Ceará and Pernambuco and what other variables have affected their performance such as economic growth rate, exchange rate and textile exports and imports.

Graph 01 shows comparisons between performance of Brazil's GDP and textile production in Brazil and Northeast and possible trends for future. Of the observed, one can infer the existence of positive correlation between these variables, that is, the changes in growth rate of Brazil's economy are followed by textile production growth rate both in Brazil and in Northeast. Since Brazil's economy moving towards recovery and growth in 2017, it is expected that domestic and regional textile industry follow this trend, as can be seen from the graph.

It is also observed that Brazil's textile industry had been in recession since January 2014, coming out of it in March 2017, when considering accumulated 12 months. Northeast's textile industry had begun its decline in August 2014 and until July 2017 had not yet obtained growth rate.

Graph 01 – Growth rate of Brazil's GDP (BR GDP) accumulated in last 4 quarters and Brazil and Northeast's textile industry physical production accumulated in last 12 months (Base: same period as before) - (%) - December/2013 to July/2017

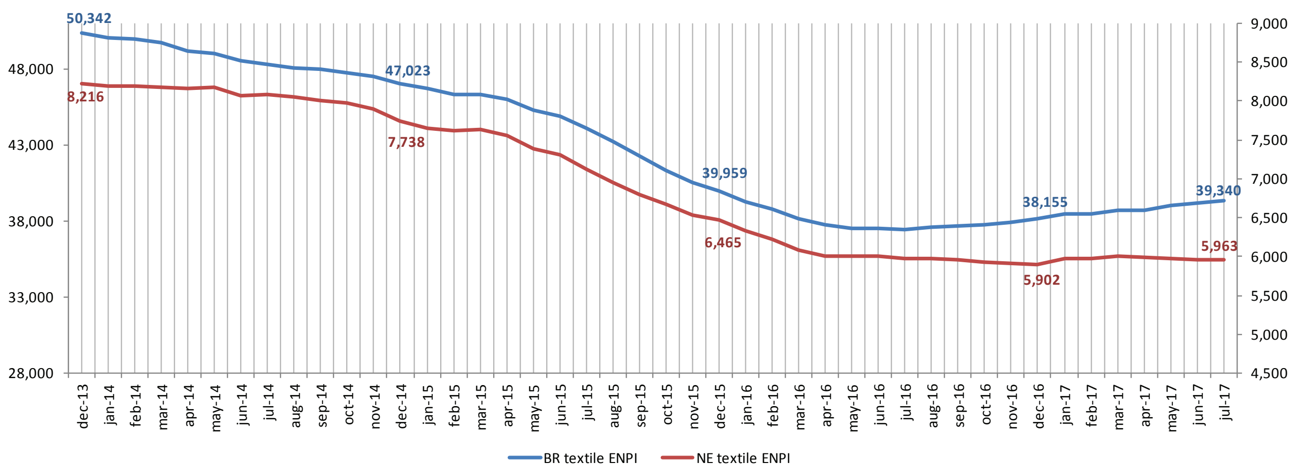


Source: Made by BNB/ETENE from IBGE (2017a) and IBGE (2017b) data.

The last provided gross value of textile production in Brazil and Northeast by IBGE are from 2015, of almost R$ 40 billions and R$ 6.5 billions, respectively. Aiming to achieve the value of Brazil and Northeast's textile production from December 2013 to July 2017 and taking as reference the published values of December 2015, graph 02 presents an estimate in Reals (R$) of the level of industrial textile production for them monthly, here nominated as ENPI textile. The ENPI values for the other months of the period than December 2015 are proportional to average of last 12 months of physical production indices of Brazil and Northeast's textile industry.

In the period under observation, Brazil and Northeast's textile industry productions have been falling since the beginning of 2014. Focusing Brazil, from R$ 50.3 billions in 2013, its production ended up to R$ 39.3 billions in July 2017. Northeast's textile industry, from R$ 8.2 billions went down to R$ 5.9 billions in December 2016. Since then, both productions has continued to recover.

Graph 02 - BR textile ENPI, based on index of physical production of Brazil's textile industry and NE textile ENPI, based on index of production of Northeast's textile industry - R$ millions of 2015 - reference in average of last 12 months indices - December/2013 to July/2017

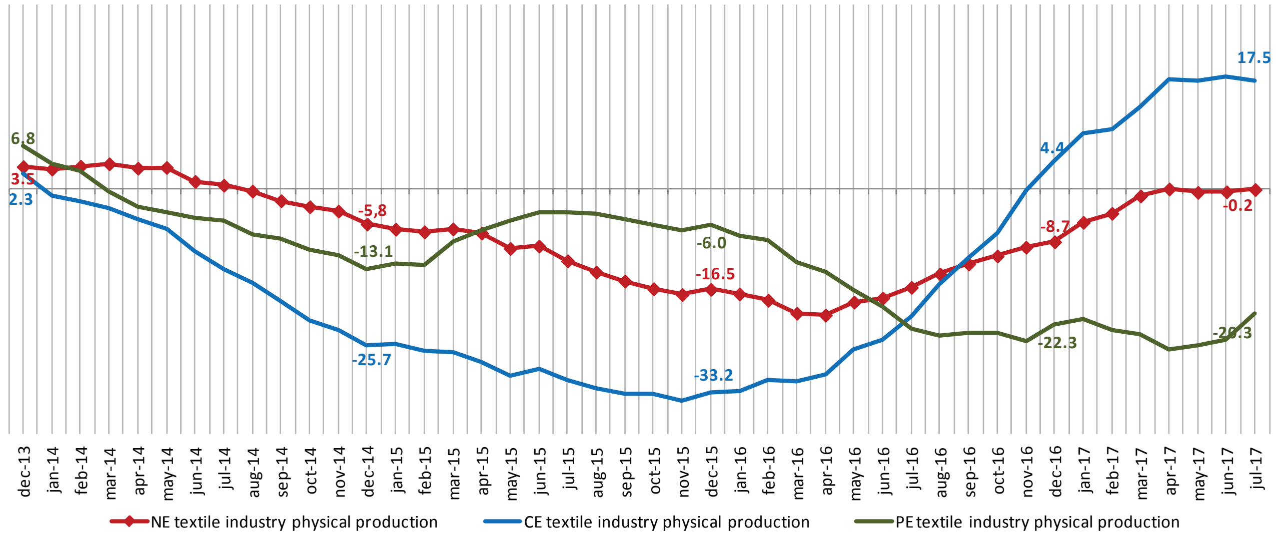


Source: Made by BNB/ETENE from IBGE (2017b) and IBGE (2017c) data. Note: 2015 gross value of IBGE's textile production was taken as reference. Brazil's textile industry production level estimate (BR textile ENPI); Northeast's textile industry production level estimate (NE textile ENPI).

Analogously to Graph 01, Graph 03 shows performance of textile production in Northeast, Ceará and Pernambuco States and possible growth trends. It is verified that the production of Ceará's textile industry had had negative growth rates since January 2014 and in November 2015 it had begun to decrease the falling rate, coming out of recession in December 2016 and achieved growth rate in July 2017 by 17.5%, a high growth rate. Pernambuco's textile industry started its production fall in March 2014 and since then has not yet been able to recover, with negative growth rate (-20.3%) in July 2017. Ceará's performance has helped Northeast's while Pernambuco's, on the other hand, has pulled it down.

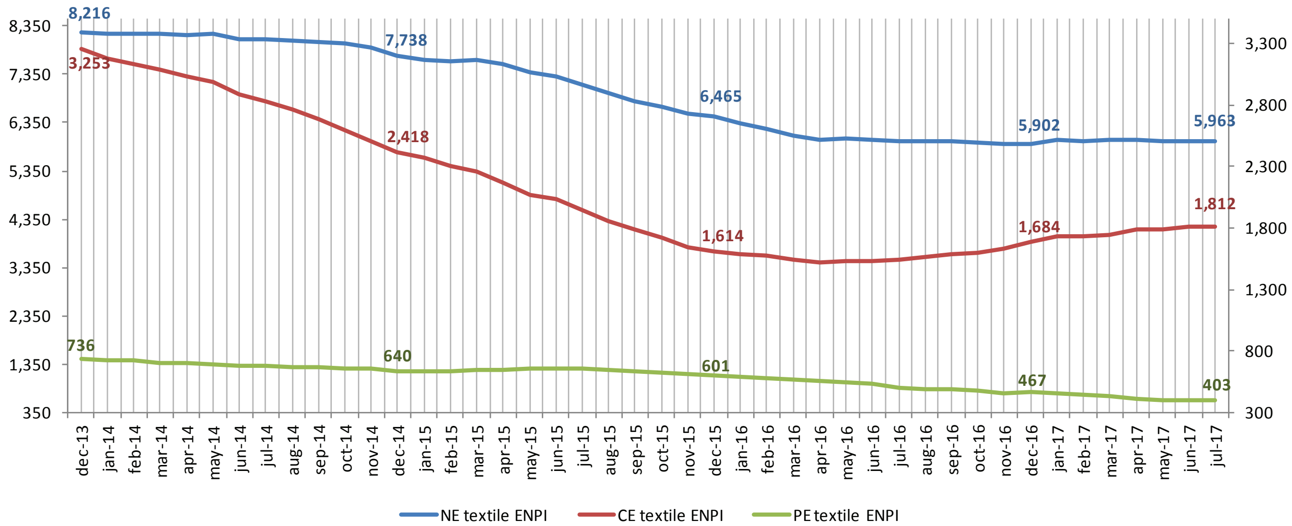
In the period under analysis, according to Graph 4, since beginning of 2014 that Northeast, Ceará and Pernambuco's textile industry production had been falling in absolute values. Northeast's textile production, from R$ 8.2 billions decreased to R$ 5.9 billions in December 2016 and in July 2017 reached almost R$ 6 billions, Ceará's, from R$ 3.3 billions went down to R$ 1.5 billion in April 2016 and ended up to approximately R$ 1.8 billion in July 2017, and Pernambuco´s, from R$ 736 millions it has continued to fall, ending up by R$ 403 millions in July 2017.

Graph 03 - Growth rate of Northeast, Ceará and Pernambuco's textile industry physical production accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



Source: Made by BNB/ETENE from IBGE (2017b) data.

Graph 04 – NE ENPI textile, based on index of physical production of Northeast's textile industry, CE ENPI textile, based on index of physical production of Ceará's and PE ENPI textile, based on index of physical production of Pernambuco's - R$ millions of 2015 - reference in average of last 12-month indices - December/2013 to July/2017



Source: Made by BNB/ETENE from IBGE (2017b) and IBGE (2017c) data. Note: 2015 gross value of IBGE's textile production was taken as reference. Northeast's textile industry production level estimate (NE textile ENPI); Ceará's (CE textile ENPI); Pernambuco's (PE textile ENPI).

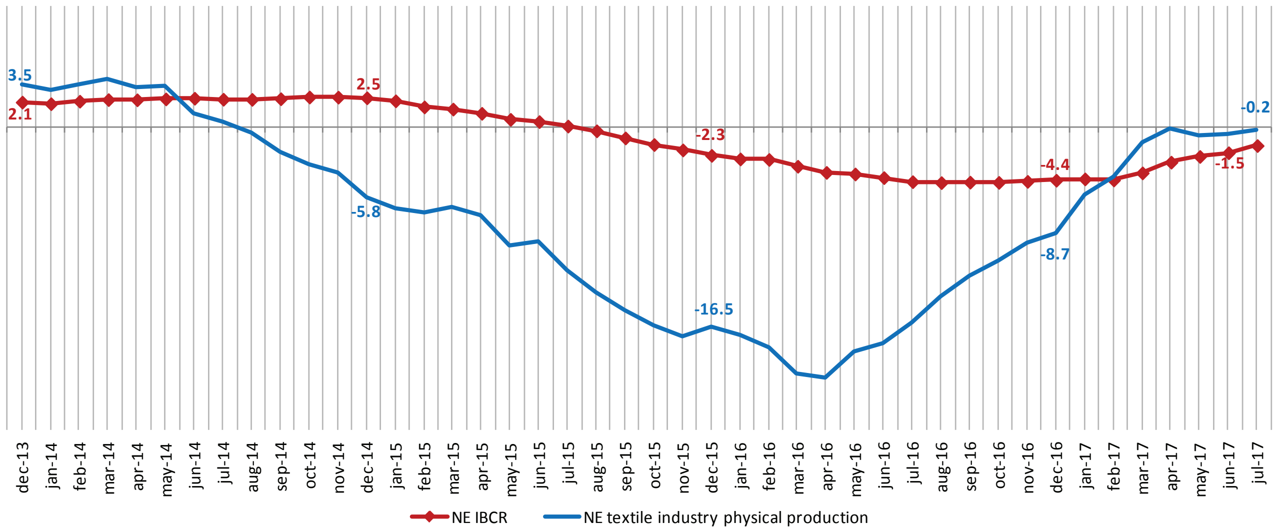
One of important issues is to know how much the economic activity performance of a country, a region or a State affect a particular economic industry, in this case under study, the textile industry. The Brazilian Central Bank (Bacen) publishes on its internet site the Central Bank's Economic Activity Index (IBC), which is an estimate of the Gross Domestic Product (GDP) of IBGE.

While IBGE presents official data of the Brazil's GDP quarterly and with two-month delay and Northeast, Ceará and Pernambuco States, yearly and with two-year delay, the economic activity indices by Central Bank are published monthly and with two-month delay for Brazil, Northeast, Ceará and Pernambuco States.

Consequently, the indices of economic activities by Central Bank serve as reference as most possible up-to-date information, mainly for Northeast and some of its States. Bacen estimates the measurement of Northeast and cited States via the Central Bank Index of Regional Economic Activity (IBCR).

Graph 05 shows that Northeast's economic growth influences the performance of the regional textile industry. In cumulative 12-month measurement, while Northeast's economy, according to Bacen estimates, got into recession in September 2015, Northeast's textile production had already fallen since August 2014 and both tend to grow (positive rates) in 2017.

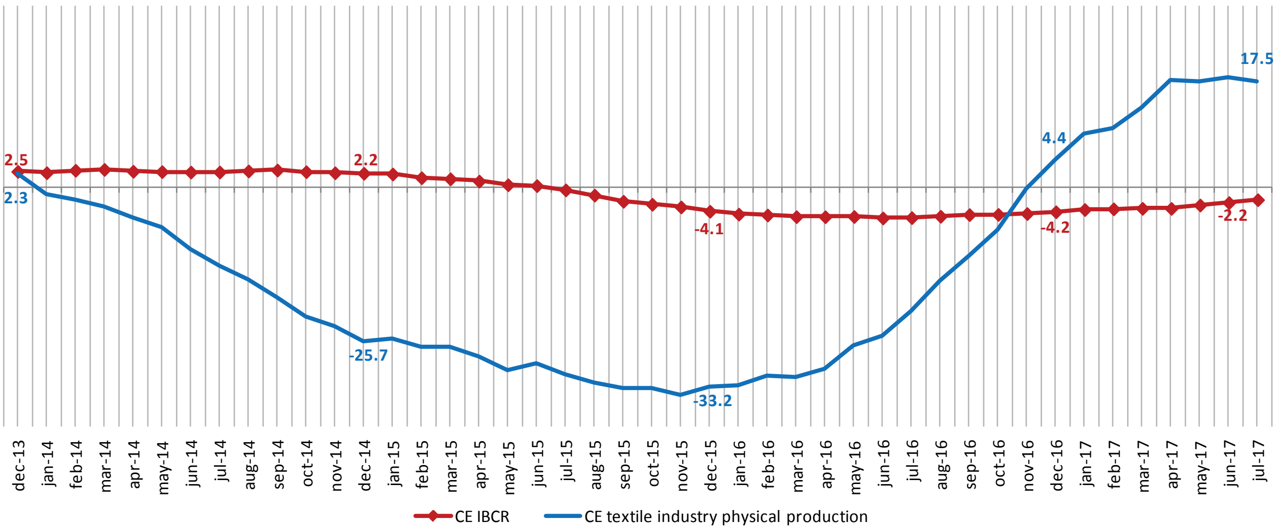
Graph 05 - Growth rate of NE IBCR and Northeast's textile industry physical production accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



Source: Made by BNB/ETENE from BACEN (2017a) and IBGE (2017b) data. Note: Northeast's Central Bank Index of Regional Economic Activity (NE IBCR).

Regarding comparison between performance of Ceará's economy and its textile industry production, we can see similarity between them, however, there is greater variability and range in textile industry. It has showed growth rates since December 2016 and reached a cumulative 12-month variation of 17.5% in July 2017 (Graph 06).

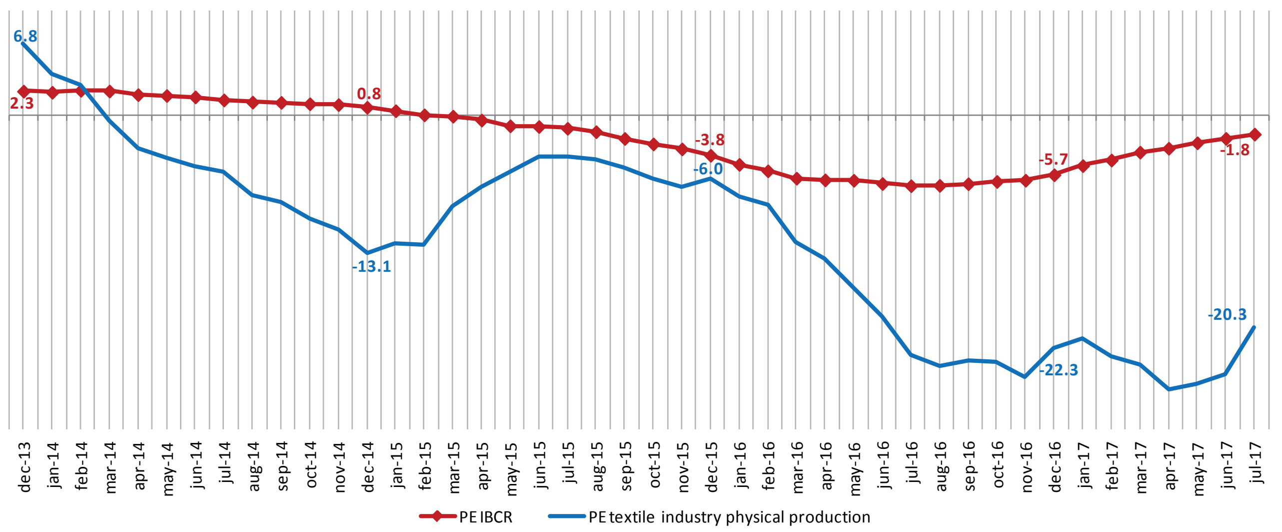
Graph 06 - Growth rate of CE IBCR and Ceará's textile industry physical production accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



Source: Made by BNB/ETENE from BACEN (2017b) and IBGE (2017b) data. Note: Ceará's Central Bank Index of Regional Economic Activity (CE IBCR).

Looking at Graph 07, in opposition to trajectories of Northeast and Ceará's textile industries, Pernambuco has obtaining, on ongoing basis, higher negative growth rates, despite its economy rehearsing lesser decline rhythm.

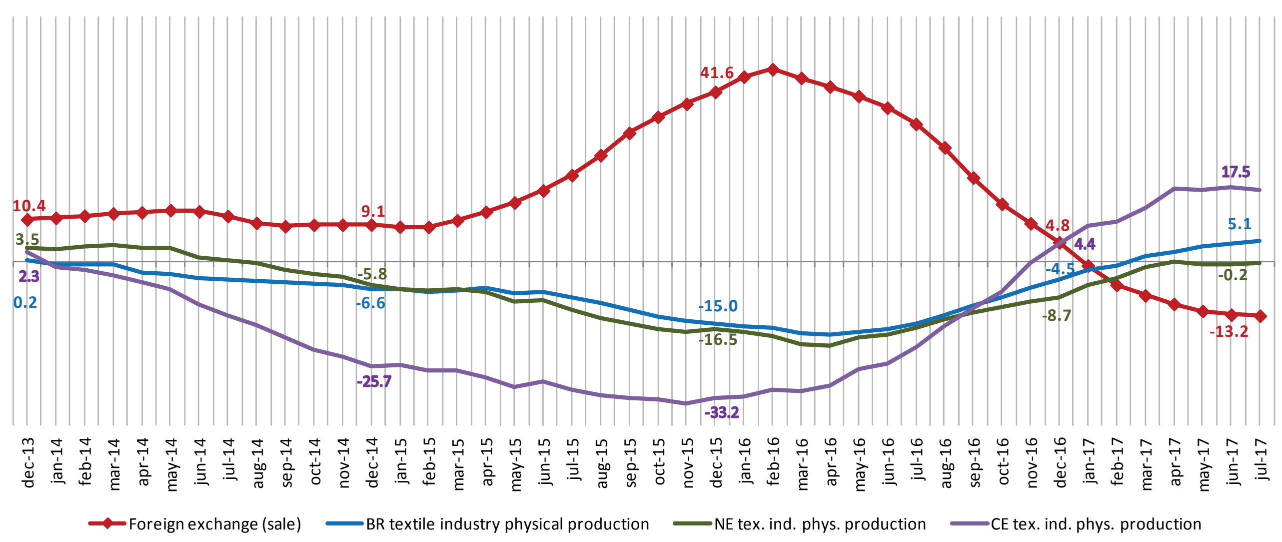
Graph 07 - Growth rate of PE IBCR and Pernambuco's textile industry physical production accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



Source: Made by BNB/ETENE from BACEN (2017c) and IBGE (2017b) data. Note: Pernambuco's Central Bank Index of Regional Economic Activity (PE IBCR).

As mentioned before, one of the factors that increase textile production costs are imported inputs, such as synthetic or artificial fibers or filaments and even cotton, not encouraging production. Thus the higher the exchange rate, that is, the higher the growth rate of foreign currency value, the higher the inputs costs, so is the cost to produce. Graph 08 shows that as high the exchange rate growth has risen since April 2015, there is a pronounced decline in Brazil, Northeast and far more Ceará's textile production. On the other hand, when it has fallen, that is an appreciation of Real (R$), since May 2016 it can be seen that textile production has begun to recover, even to grow as it is Ceará's instance since November 2016.

Graph 08 - Foreign exchange - US dollar (sale) and Brazil, Northeast and Ceará's textile industry physical production growth rates accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



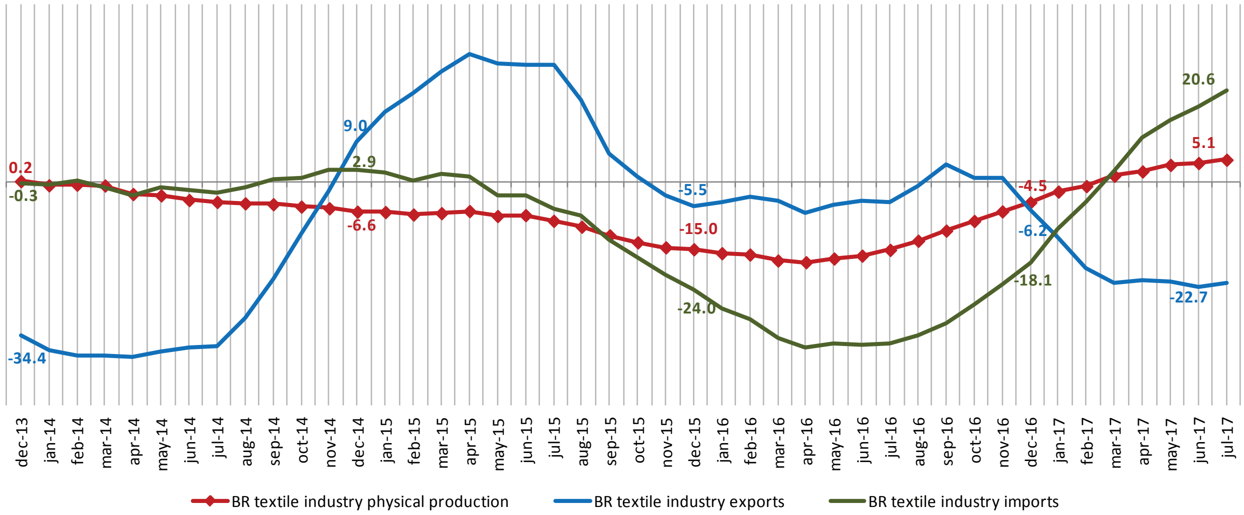
Source: Made by BNB/ETENE from BACEN (2017d) and IBGE (2017b) data.

An important issue is to understand how textile production is influenced by exports and imports of textile products. Looking at Graph 09, it is clear that textile imports to Brazil has a more intensive impact in production than its textile exports. Obviously the performance of exchange rate impacts on textile products imports, that is, the more valued the Real (R$), the cheaper to import inputs and then the greater Brazilian textile production.

The above conclusion applies also to Northeast. According to Graph 10, it can be seen that imports and textile production have a positive correlation, that is, the variations of both occur practically with the same sign, implying that imports help or hinder textile production in Northeast.

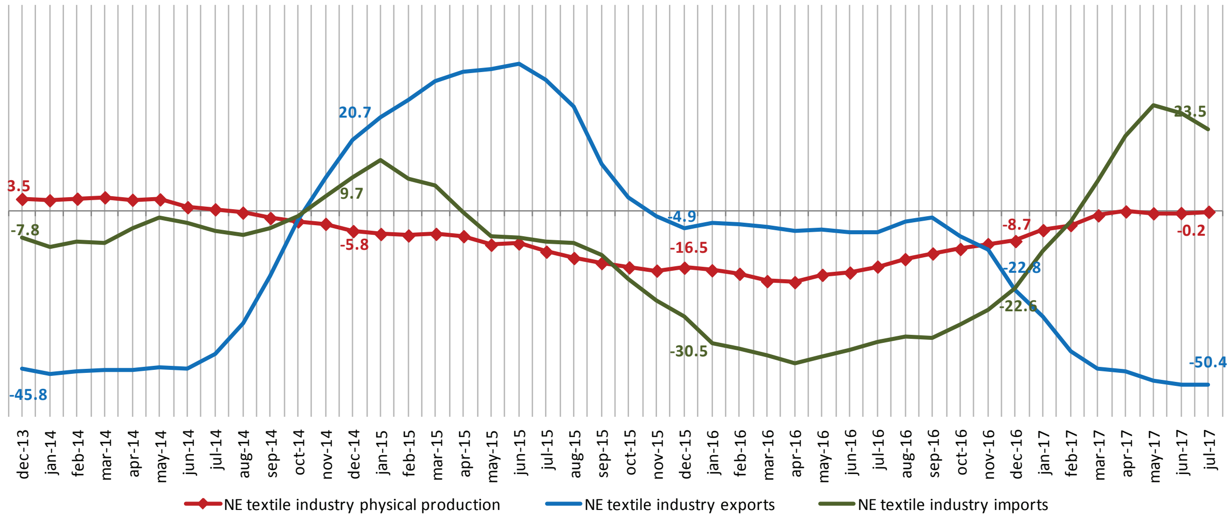
Graph 11 also indicates that Ceará's textile imports are related to the State's textile production.

Graph 09 - Brazil's textile industry physical production, textile products exports and imports growth rates accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



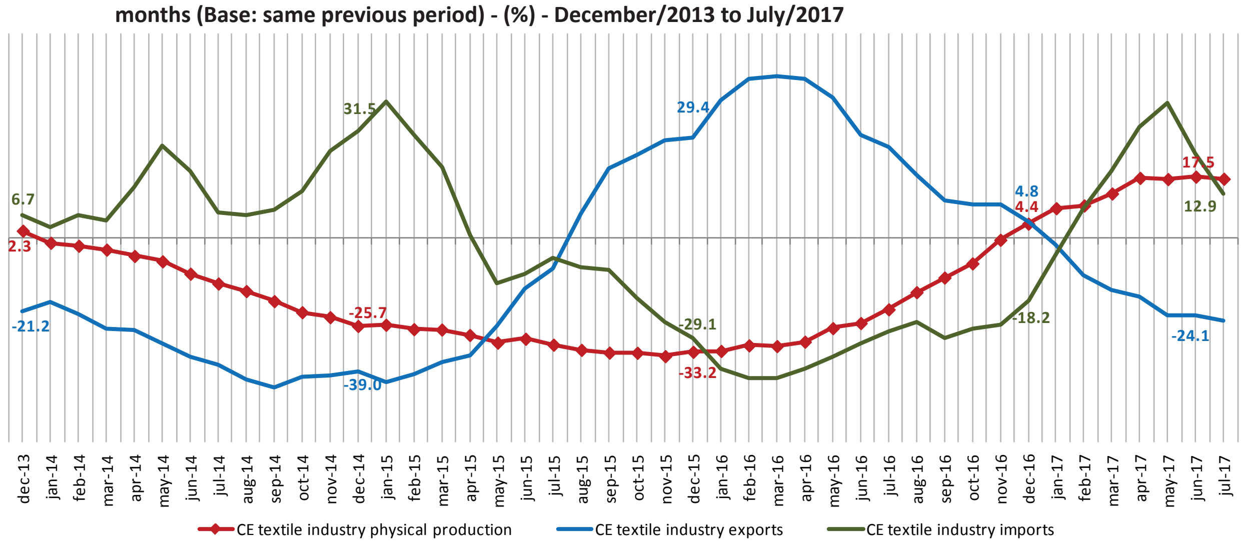
Source: Made by BNB/ETENE from FUNCEX (2017) and IBGE (2017b) data.

Graph 10 - Northeast's textile industry physical production, textile products exports and imports growth rates accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



Source: Made by BNB/ETENE from FUNCEX (2017) and IBGE (2017b) data.

Graph 11 - Ceará's textile industry physical production, textile products exports and imports growth rates accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017

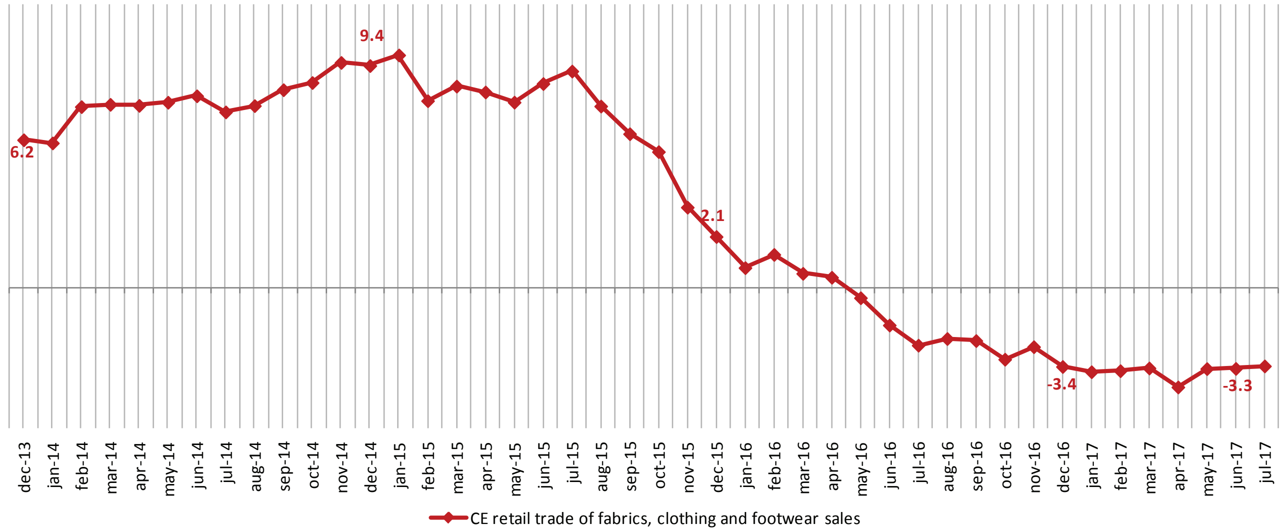


Source: Made by BNB/ETENE from FUNCEX (2017) and IBGE (2017b) data.

6 TEXTILE, GARMENT AND FOOTWEAR SALES IN RETAIL TRADE

IBGE does not have sales information in retail trade from textile industry exclusively, that is, only in aggregate way, nominated as retail trade of activity of fabrics, clothing and footwear sales. As shown in Graph 12, sales in Ceará State have been decreasing since May 2016, reaching negative growth rate of 3.3% and still showing no improvement in fall rhythm, but denoting stability.

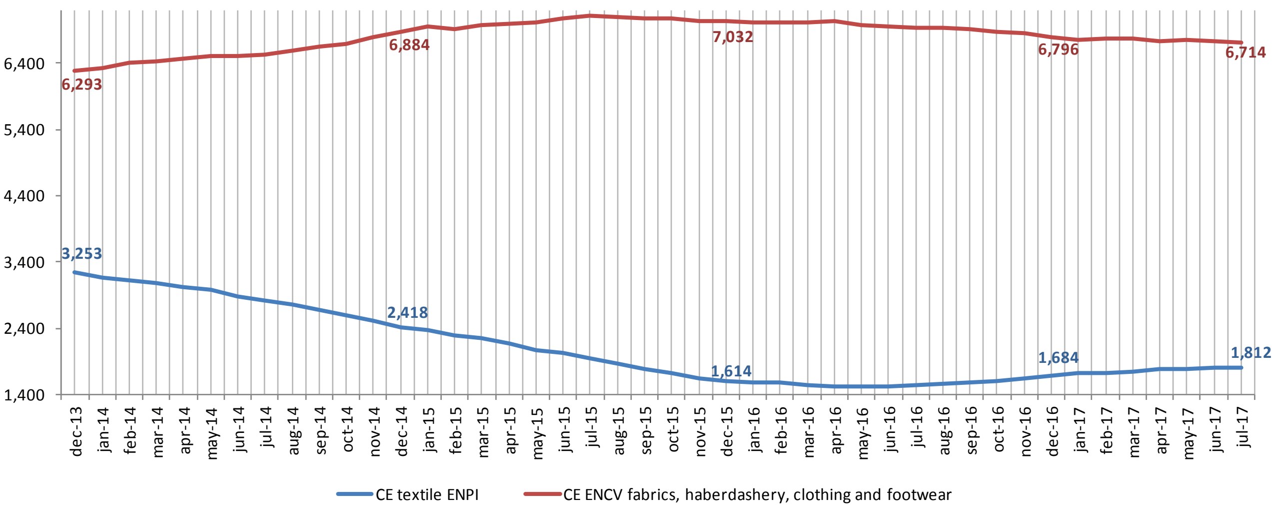
Graph 12 – Ceará's retail trade of fabrics, clothing and footwear sales growth rate accumulated last 12 months (Base: same previous period) - (%) - December/2013 to July/2017



Source: Made by BNB/ETENE from IBGE (2017d) data.

In order to obtain an approximation of market size focusing textile product consumption in Ceará State, Graph 13 shows Ceará's fabrics, haberdashery, clothing and footwear retail trade level estimate (ENCV). In July 2017, ENCV totaled R$ 6.7 billions, at 2015 current prices, while the estimate for textile production (ENPI) reached R$ 1.8 billion. Obviously, the difference between the two curves is neither roughly the potential market to be covered by Ceará's textile industry, but it gives some reference of market size, including for garment and footwear.

Graph 13 – CE textile ENPI, based on index of production of Ceará's textile industry and CE ENCV fabrics, haberdashery, clothing and footwear, based on index of Ceará's retail trade of fabrics, clothing and footwear sales - (R$ millions of 2015) - reference in average of last 12 months indices - December/2013 to July/2017



Source: Made by BNB/ETENE from IBGE (2017b), IBGE (2017c), IBGE (2017d) and IBGE (2017e) data. Note: 2015 gross value of IBGE's textile production was taken as reference; For ENCV, the reference was 9% of Gross Revenue from resale and commissions on sale allusive to wholesale and retail trade of Ceará 2014, updated by 10.67% 2015 IPCA; Ceará's textile industry production level estimate (CE textile ENPI); Ceará's fabrics, haberdashery, clothing and footwear retail trade level estimate (CE ENCV fabrics, haberdashery, clothing and footwear).

7 FINAL CONSIDERATIONS

In world context, market share of Brazilian textile industry is not relevant, accounting for 0.3% of world production, which classifies it as a price taker country. However, for Brazil, textile Industry is an important activity, since it represents 1.6% of the gross value of industrial production and 3.6% of transformation Industry jobs, as well as being an intermediary activity between production of raw materials (mainly cotton) and garment industry. In Northeast, it is more expressive, since it represents 2.6% of gross value of industrial production and 4.6% of the regional transformation Industry jobs. It is also considered a traditional industry in the country, particularly in Northeast.

In Northeast, the main textile firms are located in Metropolitana de Fortaleza, Mata Paraibana and Leste Potiguar mesoregions.

According to the presented trend analyzes, as economic activity of Brazil, Northeast and selected States grows, the textile industry, in general, tends to grow as well. Strong Real Currency influences on textile production performance, mainly in Ceará. This should be due to share of imported inputs in production process. As a result, it also explains the performance of textile imports.

For the future, it is expected that the conclusion of Transnordestina railway, which it will allow lower freight cost for produced cotton in Cerrados areas and the reduction of external dependence on supply of synthetic filaments, both will make Northeast's textile industry more competitive in domestic and foreign markets.

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