

Structural Changes in Industrial Sector of Bangladesh: 2012 to 2019

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Structural Changes in GDP (Output) Components

- The economic development of Bangladesh has been accompanied by a significant structural transformation over the past few decades-
 - Share of agriculture in output and employment has decreased
 - Share of manufacturing has increased
 - Share of service has remained more or less stable

- Specifically, the sectoral share of industry, consisting of four sub-sectors in the GDP at constant prices of Bangladesh has increased to about **37%** in 2021-22 from about **26%** in 2010-11-
 - Manufacturing
 - mining and quarrying,
 - electricity, gas and water supply construction

- This increase has primarily been driven by the growth in the manufacturing sub-sector-
 - Share of Manufacturing sector in GDP increased from about 18% to 24% during the same time.

Manufacturing Growth in Developing Countries

- As the country has made remarkable success in manufacturing growth, our understanding of this sector, particularly its distinctive characteristics are important.
- There has also been a renewed interest in studying the manufacturing sector in developing countries.
- Some country's industrial sector experiences a decline in productivity, employment, and output, despite still being in the early stages of economic development- **Premature de-industrialisation**.
- Hallward-Driemeier and Nayyar (2018) note that trend has not been homogenous across subsectors of manufacturing in Developing Countries.
 - For example, among the low- and lower-middle-income countries in Sub-Saharan Africa that experienced a decline in the manufacturing share of GDP between 1994 and 2015
 - The share of commodity-based processing such as food, beverages, and tobacco typically expanded.

Cont.

- Similarly, upper-middle-income countries in Latin America such as Peru and Ecuador also experienced an increase in the GDP share of commodity-based processing manufacturing.
 - Dasgupta and Singh (2007) describe India's deindustrialization differently-manufacturing employment is not expanding in the formal sector but is growing at a reasonably fast rate in the large informal sector.
- In contrast to these trends, the share of manufacturing in Bangladesh's economic output has risen.
- So, we want to explore some broader facts of structural composition of the manufacturing sector of Bangladesh.

Data (& Sample)

➤ We have used two rounds of Survey on Manufacturing Industries (SMI) data: 2012 and 2019.

- The surveys covered **8429** and **8533** establishments in 2012 & 2019 respectively.
- Couldn't use the 2005 microdata as several important variables were missing on the dataset we collected.

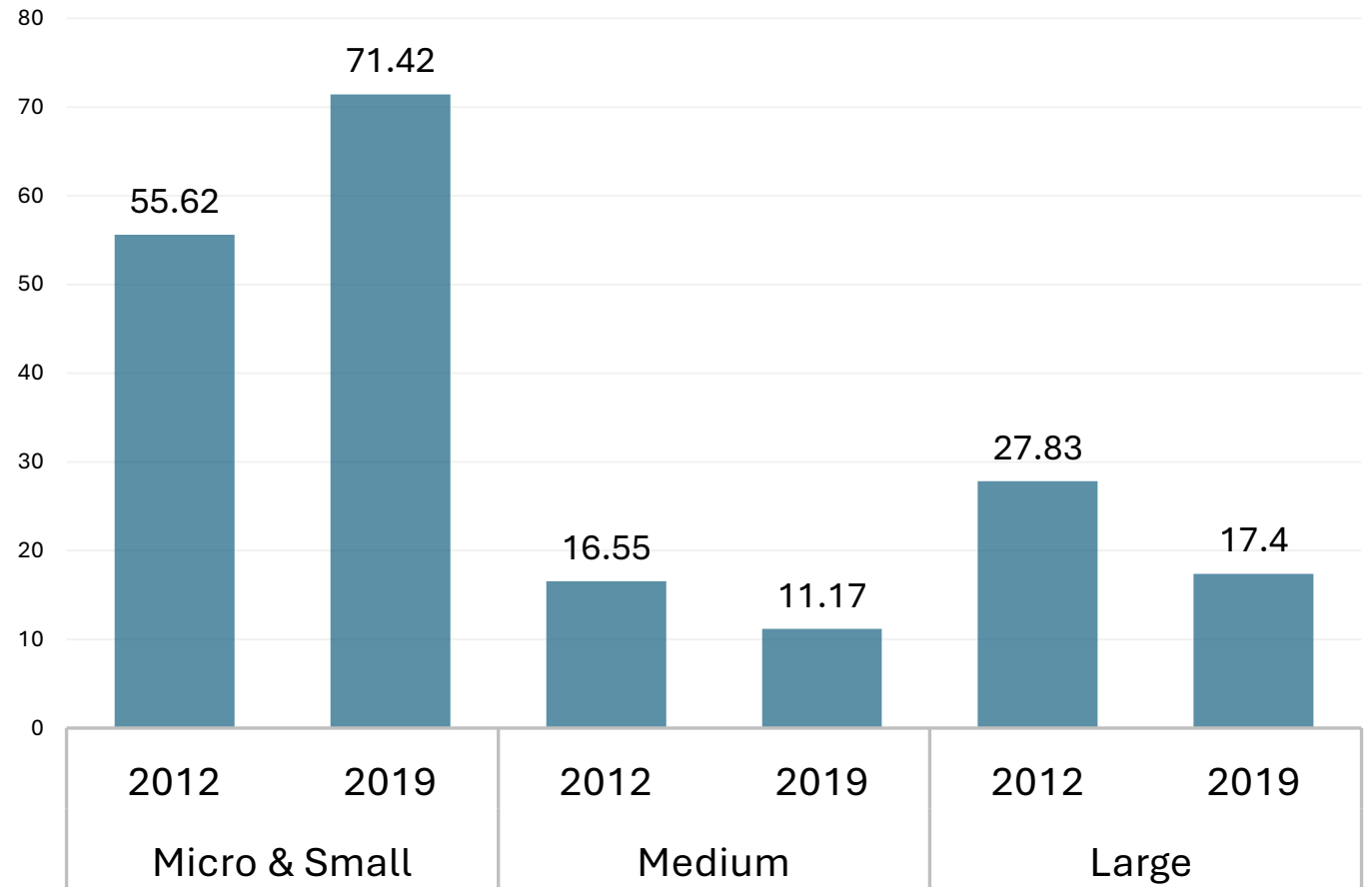
➤ Some features of this sample:

- Distribution is very similar in both rounds.
- For 2019 round we found the BSIC level for 8051 firms.
- Major drop in RMG sample size in 2019 compare to 2012

Sectors	No. of Firms in Sample (Microdata)		% of Firms in Sample	
	2012	2019	2012	2019
Food	2015	1970	23.91	24.47
Textile	1193	1769	14.15	21.97
RMG	2867	1143	34.01	14.2
Leather	101	194	1.2	2.41
Wood & Paper	164	187	1.95	2.32
Pharma	85	73	1.01	0.91
Rubber & Plastic	145	189	1.72	2.35
Electrical & Electronics	97	55	1.15	0.68
Light Engineering	302	297	3.58	3.69
Furniture	137	546	1.63	6.78
Others	1323	1628	15.7	20.22
Total	8429	8051	100	100

Size Distribution of Firms

- Share of Micro & Small firm increased.
- Share of Middle & Large firms dropped.
 - Reflects Missing & Withering Middle trend
 - Withering large firms



Size Distribution of Firms

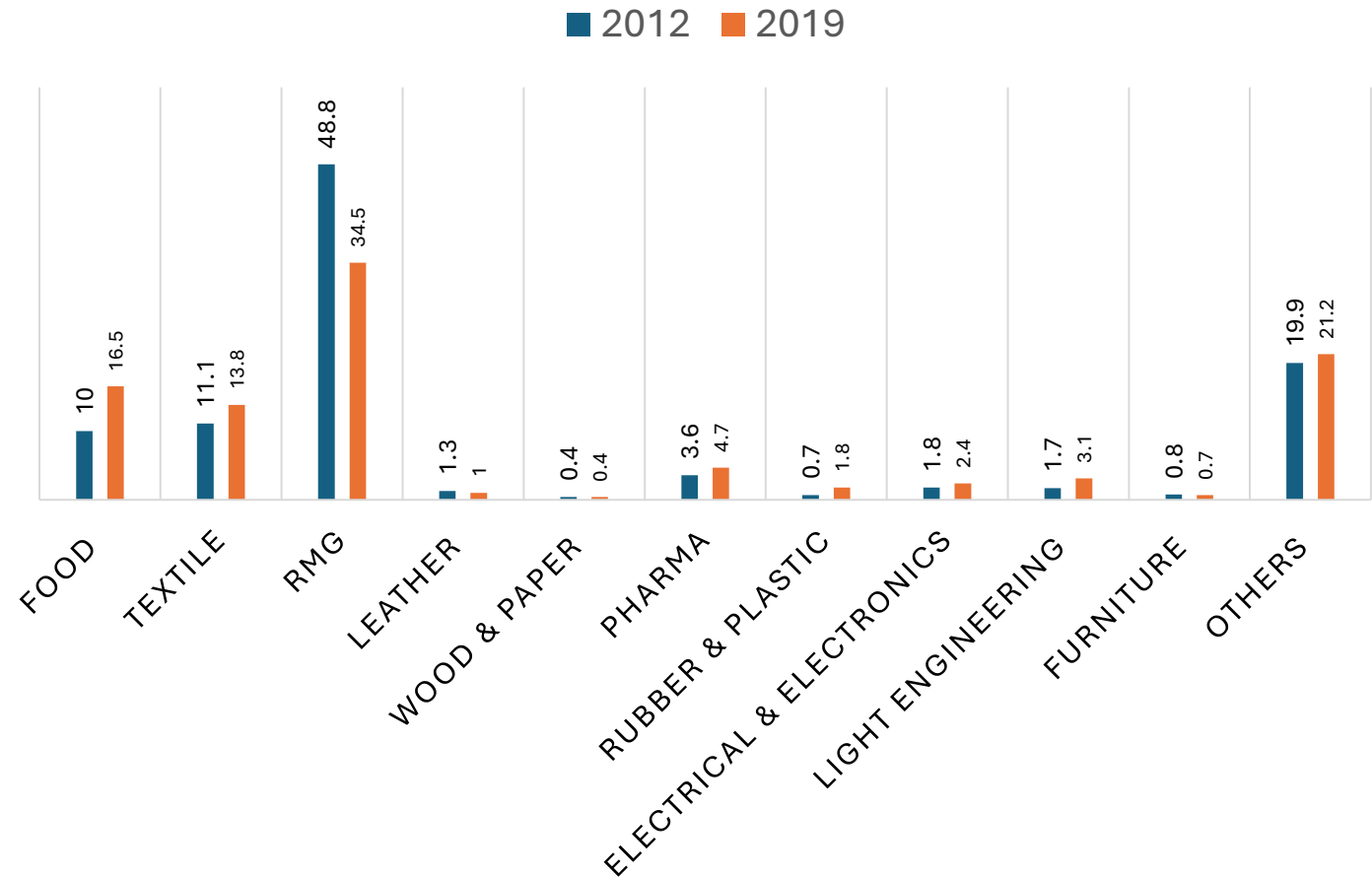
Sector	Micro & Small		Medium		Large	
	TPE 10-24 & 25-99		TPE 100-250		TPE 250+	
	<u>2012</u>	<u>2019</u>	<u>2012</u>	<u>2019</u>	<u>2012</u>	<u>2019</u>
Food	88.84	91.32	5.91	4.16	5.26	4.52
Textile	74.02	81.85	8.13	4.3	17.85	13.86
RMG	12.7	28.79	22.15	6.12	65.16	65.09
Leather	74.25	82.48	11.88	6.7	13.86	10.82
Pharma	35.29	45.2	28.24	19.18	36.47	35.62
Rubber & Plastic	84.14	83.07	9.66	10.05	6.21	6.88
Light Engg	97.39	94.44	2.62	3.09	0	2.47
Electrical & Electronics	80.41	60	7.22	9.09	12.37	30.91
Others	66.86	65.65	27.78	24.68	5.36	9.67
Total	55.62	71.42	16.55	11.17	27.83	17.4

➤ Sectoral feature:

- Electronics: share of small firms decreased, medium & large increased.
- RMG: Share of small firms (local) increased.
- Large share of small firms in Pharma (as botanical and medicinal products lies in this group).
- Large firms increase in others category.

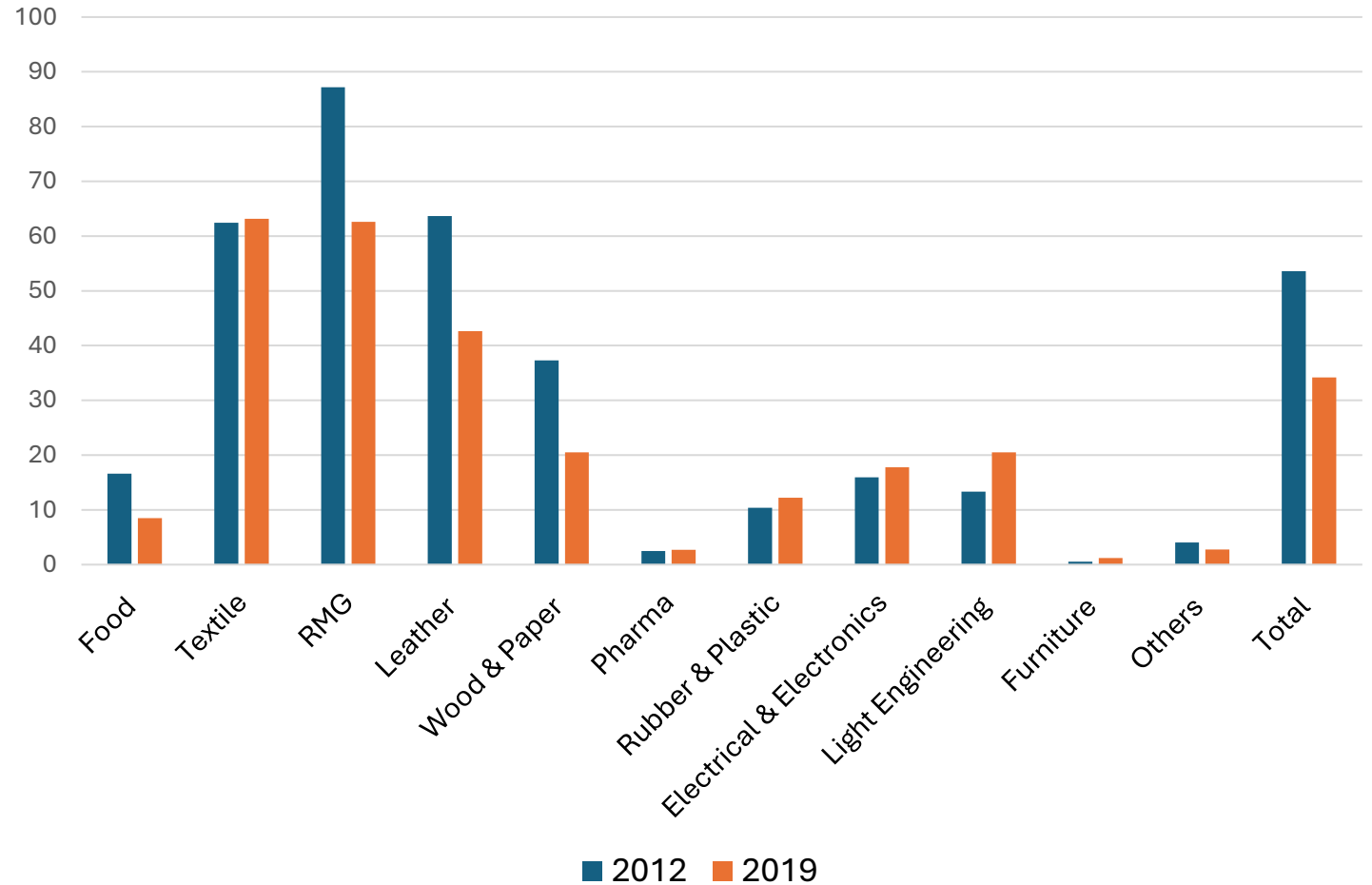
Sectoral Share of Gross Output

- Sectoral share increased across the industries.
- But dominance of RMG decreased in manufacturing output.
- The above tow scenario refers the expansion of domestic market catering industries.
- Sectoral share slightly increased in others category.



Export as % of Gross Output

- Overall share of export (as % of gross output dropped): Specially in Food, RMG & Leather.
- Export share dropped in others category.
- This reflects these industries are catering the local demand more than the previous.



Average Output (Crore Taka) Per Firm

- Nominal Output Value is deflated by GDP Deflator (BBS: 2005)
- Firms are growing larger (Both export industry & domestic market industries)
- Overall average output per firm increased, especially in RMG, Pharma & Electronics

Sector	Value (Crore Taka)	
	2012	2019
Food	6.84	17.00
Textile	12.81	15.83
RMG	23.55	61.38
Leather	17.43	10.50
Wood & Paper	3.48	4.04
Pharma	59.26	108.92
Rubber & Plastic	6.34	19.79
Electrical & Electronics	24.96	88.71
Light Engineering	7.90	21.38
Furniture	8.24	2.67
Others	20.70	20.63
Total	16.40	23.91

Capital Per Firm (Non-Land Fixed Asset, Crore Taka)

➤ Firms are becoming more capital intensive

Sector	Deflated Value	
	2012	2019
Food	1.30	2.20
Textile	3.91	5.66
RMG	3.41	9.10
Leather	2.91	2.20
Wood & Paper	1.49	1.50
Pharma	19.70	22.95
Rubber & Plastic	1.00	1.86
Electrical & Electronics	4.67	8.83
Light Engineering	0.73	1.62
Furniture	1.28	0.55
Others	3.26	4.10
Total	2.93	4.33

Capital/ Total Person Engage (K/L) [using deflated value of Capital]

- Overall Capital-Labor ratio increased: Firms are becoming more capital intensive.
- This refers capital biased technological change in production function.
- Textile, RMG, Pharma, Electronics sectors are more technology biased in production technique than others (as expected)

	2012	2019
Food	0.020	0.032
Textile	0.017	0.034
RMG	0.006	0.009
Leather	0.011	0.012
Wood & Paper	0.031	0.033
Pharma	0.040	0.059
Rubber & Plastic	0.015	0.016
Electrical & Electronics	0.025	0.043
Light Engineering	0.017	0.028
Furniture	0.015	0.009
Others	0.028	0.026
Total	0.011	0.018

Output-Labor Ratio

- As firms are becoming more capital intensive, output per worker refers that efficiency has increased over the time.
- It also reflects that labor productivity has increased over time due to higher capital intensity.

(Skill module was missing in the 2012 dataset that we collected, so we couldn't compare skill-based enhancement of productivity change in tow rounds of SMI)

	Y/L, Deflated	
	2012	2019
Food	0.11	0.26
Textile	0.06	0.10
RMG	0.04	0.06
Leather	0.07	0.06
Wood & Paper	0.07	0.09
Pharma	0.12	0.27
Rubber & Plastic	0.10	0.17
Electrical & Electronics	0.14	0.50
Light Engineering	0.19	0.35
Furniture	0.10	0.07
Others	0.18	0.14
Total	0.06	0.10

Female Work Force Participation in Manufacturing Sector

	Female/ Total Employee		Owner		Admin & Manager	
			Female/ Total Employee		Female/ Total Employee	
	2012	2019	2012	2019	2012	2019
Food	0.26	0.25	0.03	0.05	0.02	0.03
Textile	0.29	0.37	0.05	0.07	0.03	0.07
RMG	0.64	0.59	0.19	0.13	0.11	0.11
Leather	0.37	0.46	0.04	0.07	0.05	0.09
Wood & Paper	0.14	0.13	0.02	0.05	0.01	0.01
Pharma	0.13	0.20	0.13	0.15	0.06	0.24
Rubber & Plastic	0.32	0.27	0.03	0.07	0.02	0.05
Electrical & Electronics	0.19	0.14	0.07	0.10	0.05	0.10
Light Engineering	0.10	0.11	0.03	0.05	0.03	0.03
Furniture	0.08	0.12	0.06	0.08	0.03	0.08
Others	0.10	0.24	0.02	0.04	0.03	0.06
Total	0.52	0.46	0.09	0.07	0.08	0.10

- Female participation dropped in manufacturing sector.
- Overall female employee share in owner category dropped and which was driven by RMG
- Women's participation in white-collar job increase (both overall and across the sectors)

Summary

- Firms are more productive than previous.
- Labor productivity has increase. Capital intensity fueled up this productivity (Possibly).
- Firms are catering the domestic market more than previous.
- Firms are also producing different product along side the major products (as the output share of “others” category increased).
- Women's participation in manufacturing sector dropped slightly but participation increased in white-collar job.