

Impact of Electricity Crisis and Interest Rate on Textile Industry of Pakistan

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Abstract

The aim of this study is to estimate the impact of electricity crisis and interest rate on the production of Pakistan textile industry. The Pakistan textile industry contributes more than 60 percent of total export and largest manufacturing sector of Pakistan's industry. This sector faces crises of electricity and interest rate due to which its growth decreases. This study estimates the relationship between the production of textile, electricity crises and interest rate. In order to check the impact of electricity crises and interest rate on the production of textile industry, multiple regression analysis is used upon the 11 years data of electricity, interest rate and textile industry. After investigation it was found that the Pakistan's textile industry negatively affected by electricity crisis and interest rate. The textile industry can once again be brought back on attractive track if government takes serious measures in removing the electricity crisis and normalizing the supply of electricity to the textile industry for increasing the textile growth of the country.

Keywords: Textile industry; Exports; Electricity crisis; Interest rate; Production;

Paper type: Research paper

Introduction

According to all Pakistan textile mills association (APTMA), the total export of Pakistan textile industry is around 9.6 billion US dollars. The textile sector contributes approximately 8.5 percent of the gross domestic product (GDP) or 46 percent to the total manufacturing. The textile industry of Pakistan contributes more than 60 percent to the total exports of the country. In Asia, Pakistan is the 8th largest exporter of textile products. Textile industry provides the employment to 38 percent of the total work force in the country.

Growth of textile industry and increase in the production of cotton has been inspiring in Pakistan since 1947. Cotton bales were 1.1 million in 1947 and 12 million in 2010 which is very high development. Number of mills increased from 3 to 600 and spindles from 177,000 to 805 million. Finishing units and looms also increased but not in that proportion. The experts of textile industry feel that Pakistan has a large size textile industry.

Abid Chinoy, Pakistan cloth merchants association (PCMA) Chairman, reflecting on the state of affairs, appreciated the efforts of the government to encourage finding new markets and new exports, which need aggressive, export marketing. For a highly competitive market there is a need of replacement about 60-70 percent of machines for the quality production of products. There is a need to think about joint ventures with Italy, china for the production of complete spinning units and with Italy, Korea and Taiwan for production of shuttle less looms.

Electricity is very important in any industrial activity.

However, its availability is not unlimited. Electricity crisis, as well as high cost of fuels disturbs the proper supply of electricity. The textile industry uses the 38 percent of electricity in chemical processing 34 percent in spinning, 23 percent in weaving, and 5 percent for other miscellaneous purposes.

Pakistan has 60 MW of power generating capacity for 31.5 million people in 1947, and this was extended to 119 MW by 1959, just as the country was entering a period of development that required consistent infrastructure. In 1952 the government acquired a majority shareholding of the Karachi Electric Supply Company (KESC) and in 1958 formed the Water and Power Development Authority (WAPDA). The purpose of the formation of WAPDA was to manage the growth of schemes in water and power. WAPDA expanded the electricity generation capacity to 636 MW. WAPDA produced 3000 MV in 1970, 7,000MV in 1990, 19,550MV in 2005 and 22,263 MV in 2010. However, fast urbanization and industrialization increases the demand of electricity day to day.

However, the textile industry currently faces the problem of shortage of electricity and high interest rate. Due to the shortage of electricity and high interest rate, the cost of production of textile industry increases because the production of the textile industry is decreases and fixed cost of the industry remains the same. The factories operate less time due to electricity shortage and production is also less. If the factories generate private electricity than the cost of electricity is high. A huge amount of money is required for the purpose of generating the electricity. In this way there is a problem, that amount invest in the generation

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of electricity or operations of the production of textile. High cost of production of textile due to electricity crisis and high interest rate, increase in the electricity costs effected seriously the growth in the textile industry of Pakistan.

Problem statement

Issues such as whether electricity and interest rate affect on the production of the textile sector or not. What is the link between production of textile sector, electricity crisis and interest rate? The electricity crisis and interest rate affect textile sector very badly. So electricity crisis, interest rate and its effects on textile sector is an important issue which required further investigation.

Objectives and Hypotheses of study

The objective of this study is to examine the link between electricity crisis, interest rate and textile growth in Pakistan. The study focuses on testing the following hypotheses:

- Ho: There is no significant relationship between textile growth and electricity crisis
- H1: There is significant relationship between textile growth and electricity crisis.
- Ho: There is no significant relationship between textile growth and interest rate.
- H2: There is significant relationship between textile growth and interest rate.

The remaining paper structure is as follows. Next section provides the literature review. Theoretical framework is built after literature review. Data, methodology and analysis discussed after theoretical framework section. Second last Section reports the results regarding the relationship between electricity crisis, interest rate and textile growth and conclusion in the last.

Literature Review

Shibata (1983) conducted a study on economy growth and electricity crises and founded that the cost of electricity increases due to the crises of oil and increase in the oil prices. This study further mentioned by investigating a period of 6 years from 1973 to 1979 in Japan after post war period when the prices of oil raise unexpectedly, that these crises have bad impact on the industry sector which finally became reason for decreasing GDP of the country.

Sorensen (1984) conducted a research on energy storage and mentioned that wood, oil and coal considered as bases for the purpose of production and storing the energy. As the demand of energy not remain constant and due to the changes in activities, the demand of energy also changes. So, for the fulfillment of these demands of the energy, the storage of energy should be provide a positive signal to remove or decrease such energy related problems.

Khan and Khan (2010) say that in Pakistan, textile share 60 % to the country exports, but due to some reasons its growth decreases day to day. Energy crises, high inflation and interest rates and political instability considered as main reasons of declining in the growth of textile. They further said that the government of the Pakistan can increase growth of their textile sector by introducing the new technology via research and development.

The All Pakistan Textile Mills Association (APTMA) exert their efforts to improve the quality of its products and manage other factors which increase the problems in the production of textile such as high interest rates and cost of inputs, non-beneficial government policies, and non-guaranteed energy supplies is also very important.

According to The Chairman of all Pakistan textile mills association "The export of value-added products increases to 57.4% from 53.9% in 2002 which is a positive sign that we are moving in the right direction". The trade policy is considered an acceptable paper, but in the industry does not fine anything that could lead to a high level exports achievement and remove trade difference.

The load-shedding of electricity cause a rapid decrease in production which also reduced the export. The cost of production has also rise due to instant increase in electricity tariff and interest rate. Due to load shedding some mill owner uses alternative source of energy like generator which increase their cost of production further. Due to such dramatic situation the capability of competitiveness of this industry in international market effected badly.

Theoretical Framework

According to ministry of finance, textile industry is one of the single largest manufacturing sectors, which contributes in the economic growth of the country along with its sharing to employment, export, investment, earning and foreign exchange. There are various findings which support that electricity plays very important role in push of the economic growth, by providing improvement of production process, technology, full utilization of managerial skills and labor force.

As a result of load-shedding the textile production capacity of various sub-sectors has been reduced by up to 30 per cent. The joint meeting of APTMA & other related organization was held at APTMA House. In this meeting joint strategy formulate to deal with the electricity crisis being faced by textile industry. There are commonly decided to make up a joint group of electricity management who working in the interests of textile industry and try to solving the problems of textile industry which occur due to electricity load shading and high interest rate. The joint group makes plans to achieve the specific goals in the interest of textile development. Electricity tariff reduces to encourage the textile industry.

Production of textile industry decreases due to electricity crisis. Some mills uses alternative source of energy like generator for the proper supply of electricity. Cost of electricity which is generated via generator is high and if electricity is not generated via generator, the production operations of the textile industry stopped which increased the unit cost of production. To generate the electricity via generator, there is a need of money and if interest rate is high than there is also another problem. In this way Pakistan textile industry badly effected in international market. So there is a need to estimate the impact of electricity crisis and interest rate on the production of textile industry.

Data and Methodology

In this study, secondary data of 11 years from 2000 to 2010 were used for checking the relationship between electricity

crises, interest rate and production of the textile industry. Multiple linear regression analysis is used for checking the relationship between the electricity, interest rate and textile production. Histogram and normal p-plat were used for checking the linearity of the data. Data is collected from All Pakistan Textile Mills Association (APTMA), Economic Survey of Pakistan, State Bank of Pakistan and International Energy Agency's (IEA).

Results and Discussion

The SPSS software has been used to estimate and analyze the effect of electricity crisis and interest rate on the production of textile industry. The following model is best fit model via SPSS software for this study.

$$TCP = B_0 + B_1 \text{ESuDf} + B_2 \text{INT}$$

$$TCP = 612.953 - 0.0065\text{ESuDf} - 27.43 \text{INT}$$

Where;

TCP stands for total cloth production of textile industry of Pakistan.

ESuDf stands for electricity surplus or deficit.

INT stands for interest rate

Table 1. Model Summary

R	R Square	Adjusted R Square	F Sig
0.876	0.767	0.736	0.000

Table 2. ANOVA

Model	Sig
Regression	0.000

Table 3. Coefficients

Model	Beta	t Sig	Lower Bound	Upper Bound
(Constant)	612.953	0.000	437.606	788.3
ESuDf	-0.0065	0.000	-0.0091	-0.004
INT	-27.43	0.000	-40.576	-14.284

According to the above analysis the value of F means p values is 0.000 which is less than 0.05, shows the model is overall good fit. The value of co-efficient of determinant R square 0.767 tell that 76.70 % change in production of textile industry is due to the electricity crisis and interest rate. The value of betas of electricity crisis and interest rate are -0.0065 and -27.43 respectively, which show the negative relationship between the electricity crisis, interest rate and production of textile industry.

This model shows that if there is no independent variable including the electricity crisis and interest rate, effect on the production of textile than the value of production of textile

sector is 612.953 million square meters. If one MV increase in electricity shortage and others things remains constant than it has a negative change of 0.0065 million square meters in the production of textile and If one percent increase in interest rate and others things remains constant than it has a negative change of 27.430 million square meters in the production of textile.

Acceptance or Rejection of Hypotheses

On the base of "t" values from the above table, this study accepts the following hypothesis.

- H1: There is a negative relationship between textile growth and electricity crisis.
- H2: There is a negative relationship between textile growth and interest rate.

Conclusion and Recommendations

The study examined the impact of electricity crisis and interest rate on textile industry in Pakistan by taking the data of 11 years from 2000 to 2010. This study explains that electricity crisis and interest rate have a negative relationship with the growth of textile industry and R square tells that 76.70 % variation in the production of textile industry is explained by electricity crisis and interest rate.

The electricity crisis and interest rate affected the production of Pakistan's textile industry very badly. The high cost of production resulting from electricity crisis and high interest rate has been the primary cause for negative growth of the textile industry. The above factors increase the cost of production which decreases the exports. Exports receipts decrease from \$ 10.2 B to \$ 9.6 B. Government should provide subsidies to the textile industry for the survival of this industry. Some other recommendations are as follow:

- Technology up-gradation & capacity building.
- Reducing the cost of doing business in Pakistan.
- Need for improving textile production.
- Improvement in productivity.
- Decrease the electricity tariff.
- Removal of electricity crisis

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