J. Appl. Environ. Biol. Sci., 7(9)39-46, 2017
© 2017, TextRoad Publication

ISSN: 2090-4274
Journal of Applied Environmental and Biological Sciences
www.textroad.com

Economic Impact of Energy Crisis on the Textile Sector: A Case Study of Pakistan

Muhammad Shahzad Iqbal, Dr. Babak Mahmood, Junaid Iqbal, Muhammad Naeem Akhtar

[1]Assistant Professor, School of Management Studies, The University of Faisalabad, Faisalabad. Pakistan
[2]Associate Professor, Department of Sociology, GC University Faisalabad, Pakistan
[3]Assistant Registrar (HR), The University of Faisalabad, Pakistan
[4]MS, School of Management Studies, The University of Faisalabad, Pakistan

Received: April 8, 2017
Accepted: July 8, 2017

ABSTRACT

The purpose of the study is to estimate the loss that textile industry is bearing due to energy crises in Pakistan. The data was collected for the period of fifteen years from 2000 to 2015. Energy crises started in Pakistan after the year 2007, so the data was analyzed accordingly. This study is a quantitative research and data analysis is divided into two portions; first portion is pre-period and second portion is post-period. Pre-period consists of the data from 2000 to 2007 and post-period from 2008 to 2015. This study used software E-views 07 to perform the Ordinary Least Square (OLS) method. The economic impact was calculated by Return on Assets (ROA) and Return on Equity (ROE) of the firms. The results of the study pointed that there is an inverse relationship between load shedding and the economic performance of the companies. The recommendations of the study will be used to enhance the energy resources in the textile sector.

KEY WORDS: Energy Crises, Economic impact, Textile, OLS, performance.

INTRODUCTION

Electricity is flood of electrical charge or power. It is both the basic component of nature and one of the most broadly used form of energy. Electricity is basically a derived source of energy which is referred to an energy carrier [1]. It means that electricity is generated by the change of some other source of energy such as from coal, solar energy and nuclear energy. These are also called main sources. The sources of energy we use to generate electricity may be non-renewable or renewable. Electricity offers a variety of ranges of commonly known effects such as electromagnetic induction, electrical current, lightning and static electricity [2].

According to the [3], electricity in today is the most significant energy form for small, medium and large businesses. Electrical energy is now one of the latest discoveries those have changed entirely the daily life of almost every person on this planet. Everyone is now playing with this energy all the time. The importance of electricity can be judged from the fact that this is now our basic need. This is the component of today's modern technology and we cannot perform our daily activities without it.

Traditionally developed economic theories represent just labor and capital as the most essential elements of every manufacturing industry [2]. But now the things are completely different. This case does not exist in today's life anymore. Modern theories of economics represent not only previous elements (capital and labor) but also recommend energy is the foremost element in production and manufacturing functions of every economy around the globe [3]. So it is proved that electrical energy now is the basically fundamental element in growth of each economy due to its importance in production and manufacturing of every element ([4]; [6]).

Statistically speaking it has been proved that electrical energy is the major source of energy in Pakistan for residential purposes. It is also economic factor of energy. Pakistan has been facing a huge shortfall in production of electrical power and gas. This shortfall has delayed the national and international orders of production in many fields. This has greatly affected the business and exports of Pakistan. Production and Supply of Electrical power and gas in Pakistan was decreased by 40 % in 2006 and 2007 [4].

According to the above statements energy crisis have made many negative impacts on every business of Pakistan. These conditions made difficult for the investors to invest in this country. The study has attempted to investigate the effects of energy crisis on the performance of textile sector in Pakistan.

***Corresponding Author:** Dr. Babak Mahmood, Associate Professor, Department of Sociology, GC University Faisalabad, Pakistan babakmahmood@gmail.com.

Another study conducted by [8]founded that the textile sector is facing severe losses by the widespread energy crisis from the financial year 2007 and subsequently. Methodology adopted was comprised of horizontal analysis of the ratios including asset management ratio, liquidity ratio, profitability ratio and debt management ratio. They found that the preferences of the textile sector have been decreased after the start of energy crisis in Pakistan. Because the figures of asset management ratio, liquidity ratio, profitability ratio and debt management ratio shows huge decline after energy crisis.

A study was conducted by [9] on the electricity crisis impact on two elements which are interest rate and textile industry. Multiple regression analysis was applied on the eleven year energy crisis data, interest rate and textile sector. The study concluded that there is a negative relationship found between energy crisis and production of textile industry. Similarly it found a negative relationship in interest rate and production of textile industry. There are 76.70% variations in the manufacture of textile commerce. The primary causes of the manufacturing of textile industry variations are huge cost of manufacturing due to energy crisis and elevated interest rate. These increase in cost of production resulted in a way that exports were decreased from $10.2 billion to $9.6 billion. Due to the diverse condition of energy crisis in the country exports and textile industry production are badly affected.

While studying the challenges faced by the textile industry [10] found that internal issues are affecting the textile industry. From the serious internal issues energy tariff is a primary cause which affects the preference of textile industry. The production costs of textile industry is increased as a consequence of energy costs are increased through the internal issues. Pakistani industries are affected by many other problems like devaluation of Pakistani rupee, political instability, increase in input cost, electricity tariff, energy crisis, fluctuation in interest rate, removal of subsidy and internal disputes. All these factors have decreased the exports and increased the cost of production of textile industry and also in every industry.

It was mentioned in the study conducted by [11] that the economy of South Africa is facing losses of millions of rands every day due to power cuts. Steel industry and mining industry were badly disturbed by energy crisis because these industries are known energy sap industries. According to the chamber of Mines South African mining industry has 195.6 billion from sales of mineral in 2006. Mining industry has loss of about 250 million rands a day. In South Africa directly contribution in GDP of mining industry is 7 % in 2006 and indirectly contribution in GDP of this industry is 18.4 %. Unemployment increased in South Africa as a result of energy crisis. According to a survey about 0.4 million of peoples were made unemployed due to energy crisis in mining sector.

A comprehensive study was conducted by [12] to examine the Japanese manufacturing companies facing the power crisis after Fukushima by using the Computable General Equilibrium (CGE) model. The study concluded that energy crisis badly affected the several sectors which are heavy users of the electricity. Paper and printing, wood, steel, pottery and non ferrous metal had to decrease their output heavily only because of energy crisis in the country. But some sector did not face problem by the energy crisis like electric equipment, textiles and apparel and transportation equipment.

Another study conducted by [13] to examine the challenges faced by the textile sector by using qualitative technique. Textile sector is the back bone of Pakistan economy because of its contribution in GDP (Gross Domestic Product) is 8.5 %. Its contribution in total exports is 63 %. It has been facing different challenges. The study found that energy crisis is highly injuring the textile sector of Pakistan. Load shedding of electricity and supply shortage of gas resulted in yarn price fluctuation, legal situation, and increased cost of production.

While analyzing the hundred firms in Lahore district of Pakistan [14] found that majority of the firms declared that the electricity is most important for the continuing there manufacturing operations. The most important limitation is electricity, second limitation is macroeconomic stability, and inadequate workforce is in third. Fourth and fifth limitations are raw material and corruption respectively. The study used World Bank's 2007 ICA (Investment Climate Assessment) data. Industrial sector of Lahore zone affected badly because of the energy crisis. The chemicals, printing, plastic and food processing industry declined production due to energy crisis. These sectors are losing 15 percent of their annual sales in the result of electricity shutdown.

A study conducted by [15]on the cost of electricity to mines in Zimbabwe and founded that the high prized or precious mines like platinum, diamond and gold incurred high outage as compare to low prized mines like phosphate, graphite and vermiculite. Poor supply of electricity increased the cost of mining industries. Cost increased due to the loss of production or output of mining industry.

To analyse the causal factors of textile sector growth [16] conducted a research. The study found that Pakistan textile sector was affected very badly by the electricity crisis, inflation, interest rate and yarn prices. There was 98% variation in the textile sector production due to electricity crisis, yarn price, inflation and interest rate. Cost of production increases in the result of these variables and growth of textile sector was decreased. Although the textile sector has a lot of limitations but as a major industry of the economy it has some strong point like cheap labor force, raw material

productions, capable engineers. These strong aspects are the facts that the textile industry is still providing the major share of export and employment opportunities.
While [17] found in the study that the textile sector which has major contribution in exports is unable to fulfill the demand of market due to heavy outage of electricity in the country. In the result of this outage textile sector had to face lower production. Big textile production units became small production units on the other hand hundreds of textile units were shutdown. According to this study textile sector lost 23 to 65 per cent production for 8 hour shift and 21 to 60 per cent production lost in 10 hour shift due to interruption of electricity supply.
The losses due to energy crises at sectoral levels of Pakistan's industry have not been analyzed earlier. A recent study by [18] calculated total industrial output loss by taking into account all major industries including textile. According to the study, the output loss was increased from 12 percent to 37 percent due to shortage of energy. Production delays of the sub sectors of textile industry were not part to this research study.
The existing literature available on Pakistan reveals that very little work has been done on the impact of energy crisis on performance of firms and especially in textile sector. So the study looks attractive and important in the research perspective.

OBJECTIVES

The major objectives of this research are

- Comparison of the performance of textile sector before and after energy crises in Pakistan.
- To check the impact of load shedding on return on assets.
- To check the impact of load shedding on return on equity.

METHODOLOGY

The data in the study is divided into two parts; one is the pre-energy crises period and the other is post-energy crises period. In order to have an empirical analysis of this fact, data was collected for fifteen consecutive years (ranging from 2000 to 2015). Pre-crises time period is considered to be from 2000 to 2007 and Post time period from 2008 to 2015.
Keeping other similar studies into account, Return on assets (ROA) and Return on equity (ROE) in natural log form (LNROA and LNROE) have been used as a benchmark to measure the performance and working of companies [19]. Ordinary Least Square (OLS) method was used to analyse the situation.
Sample was taken from textile companies listed on Karachi Stock Exchange. Any new company that was listed in these fourteen years (under consideration) or any previous companies delisted during this time period are excluded from this study. A total of 37 companies were observed. Respective data for these companies was collected from the "Financial Statements Analyses", publication by State Bank of Pakistan.

Table 1: Variable in Estimation of Impact of Energy Crises

Variable	Description	Measurement
Dependent variables		
LNROA	Natural logarithm of the data on Return on Assets	Net Income /Total Assets
LNROE	Natural logarithm of the data on Return on Equity	Annual Net Income / Shareholder's equity
Independent variables		
Load shedding	Dummy variable	Divided in two portions pre and post. Assign 1 for load shedding and otherwise 0

Source: Author's own work

RESULTS AND DISCUSSION

Table 2 shows the results of the impact of energy crises on the economic performance of textile firms. The results represent the time after the energy crises was started. It is interesting to note that the results of both variables are similar. Results demonstrated that a one percent increase in load shedding make happen 2.995 percent decrease in Return on asset and same on the return on equity.
Representation of adjusted R-squared of the any model shows how well model fits the data [20]. Lowest adjusted R-squared of 15% or more is to be considered acceptable [21].

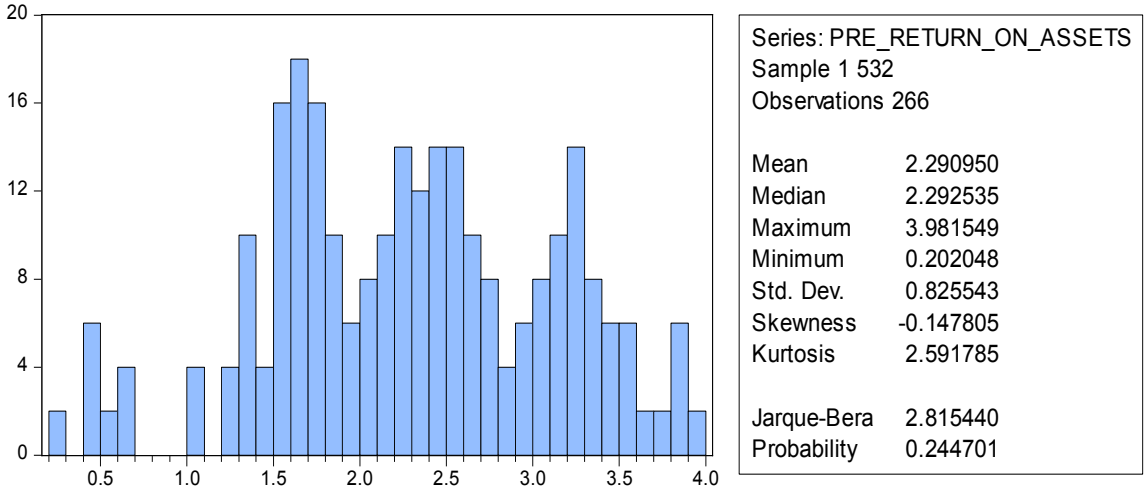
Table 2: Summary Statistics (Post Energy Crises Period)

Variable	OLS	Prob (F-statistics	R-squared	Adjusted R-squared
LNROA	-2.995	0.0000	0.7302	0.7297
LNROE	-2.995	0.0000	0.7302	0.7297

Source: results obtained from E-views software

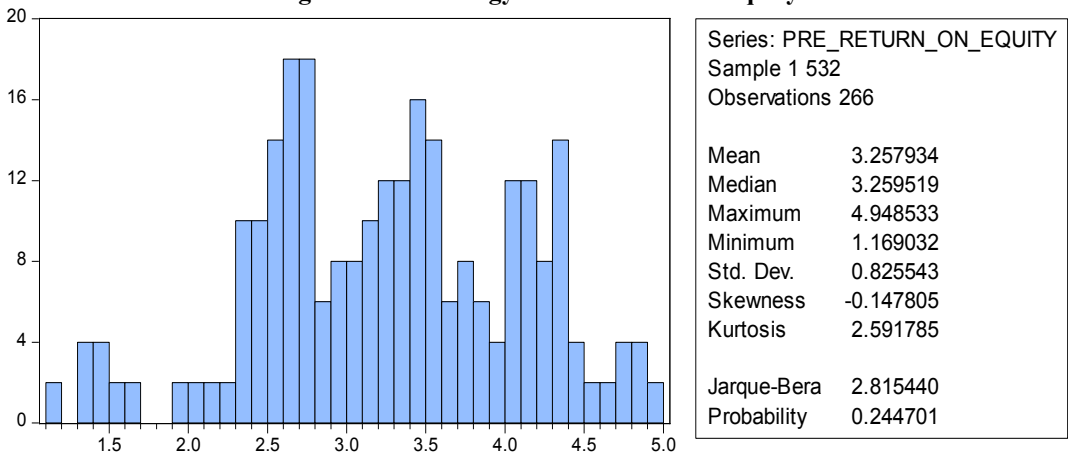
The values of F-statistics and Prob (F-Statistics) show the whole significance of the regression model particularly. The value of Prob (F-statistics) is 0.000 which is less than 0.05. It means that the model is overall good fit. The value of co-efficient of determinant R square is 0.7302 and the value of beta of electricity crisis is -2.995 which show the negative relationship between the electricity crises and performance.

Figure 1: Pre Energy Crises Return on Assets



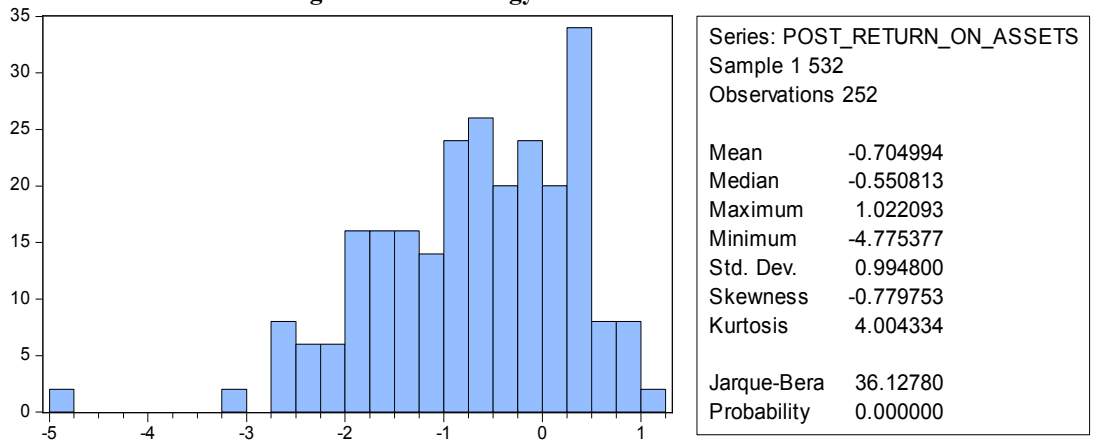
The figure 1represents the position of return on assets before the energy crises started. The data shows arithmetic mean 2.29 which is the average value of pre period return on assets. The most middle value or median of pre period return on assets is 2.292. The maximum value is 3.98 from the pre period return on assets data. The minimum value is 0.2 in the representative chart and standard deviation of pre period return on assets is 0.8255. Skewness is used to measure the symmetry of the data, or supplementary precisely be short of symmetry. A resulting data distribution, or data set, is symmetric if its look the similar of distribution to the left and right shape from the center point. skewness of pre period return on assets distribution is -0.1478. Kurtosis is a descriptor of the shape of a probability distribution. The value of kurtosis in pre period return on assets distribution is 2.592 and 0.2447 which is the probability of pre period return on assets distribution.

Figure 2: Pre Energy Crises Return on Equity



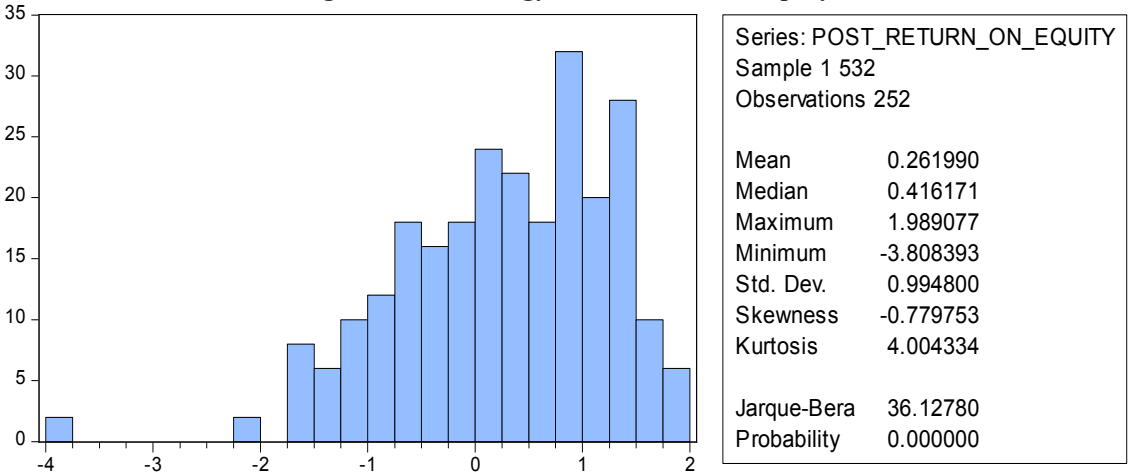
The figure 2 shows the result of the return on equity distribution before the start of the energy crises. The distribution shows the arithmetic mean is 3.2579. The most middle value or median is 3.2595 of the pre period return on equity distribution. Maximum value of this table is 4.9485 in pre period return on equity and the minimum value is 1.169 of this distribution. The Standard Deviation is a measure of how data is spread out. The standard deviation of the pre period return on equity distribution is 0.8255. The symmetry of pre period return on equity distribution or skewness is -0.1478. Kurtosis shows that by this distribution the data is sharp or plane according to the normal distribution. If the kurtosis is so high or packed it means that kurtosis is so near to the arithmetic mean. Kurtosis of the normal distribution tend to the mean of that distribution, decline quite rapidly, and have heavy tails. Data sets of the normal distribution with have low kurtosis, it tend to have flat top close to the mean, sooner than sharp peak. The kurtosis is 2.59178 of the pre period return on equity distribution.

Figure 3: Post Energy Crises Return on Assets



The energy crises started in Pakistan after 2007. The post energy crises period of this study is 2008 to 2015. This study is divided in two part pre crises period and post crises period. Pre crises period is taken from 2000 to 2007. In this post period the impact of load shedding is checked on the textile sector performance. This histogram shows the result of post period return on assets distribution. 252 observations are selected for these results. The arithmetic mean of this distribution is –0.70499. It is negative because of the most values are negative. It shows that the ROA (Return on assets) of textile sector is decreasing in post period. The median or most middle value of the post period return on assets distribution is -0.5508. The maximum value of the post period return on assets distribution is 1.02209 and the minimum value of this distribution is -4.77. The scattering of the data or standard deviation of post period return on assets is 0.9948. Skewness of the data is -0.7797. Shape of the distribution in perspective of kurtosis is so high. Kurtosis is 4.0 of this data and the probability is 0.000 of the post period return on assets distribution.

Figure 4: Post Energy Crises Return on Equity



The above figure 4 shows the findings of distribution of selected 252 observations. The figure demonstrates that the arithmetic mean of this distribution is 0.2619. The median or most middle value of the post period return on equity distribution is 0.416. Immediate below the median we can find the maximum value of the selected observations which is 1.989. When we see in parallel to the minimum value of the selected data we find the value is -3.808. The Standard Deviation or the scattered value of the data in post period return on equity distribution is 0.99. The symmetry of the distribution or skewness of the selected data is -0.779. The highest histogram of the selected data shows the kurtosis. The value of the Kurtosis is 4.004. It is not feasible for this data. The probability of the post return on equity is zero.

The comparison of pre and post period of return on asset is shown in the table 3. The mean of the pre period is 2.29 and the post period return on asset is -0.70. The mean is decreasing from the pre period to post period. The most middle value or median of pre period return on asset is 2.32 and the most middle value or median of post period return on asset is -0.55 which shows that it is decreasing from pre period to post period. The maximum of pre period return on asset is 3.98 and the same value form post period is 1.02. These values show that maximum value is decreasing from pre period to post period. The minimum value of the data for pre period return on asset is 0.20 and the minimum value for post period return on asset is -4.77 which shows huge decrease from pre period to post period.

Similarly when we see downward the standard deviation value for pre period return on asset is 0.844. On the other hand standard deviation for the post period return on asset is 0.994. From these values we can easily interpret that data is scattering from pre period to post period. Further going downward in the mentioned table the value of skewness for pre period return on asset is -0.154 and the value of skewness for post period return on asset is -0.779 which shows the data avails comparatively less symmetry from pre period to post period. When researcher talks about the Kurtosis which is immediate below the Skewness the value for pre period return on asset is 2.499 and the same value for post period is 4.004. Kurtosis is increasing from pre to post period. Sum of the values of pre period return on asset is 0.163 and post period return on asset value is zero.

Table No 3: Return on Assets Comparison Pre and Post Energy Crises

	PRE RETURN ON ASSETS	POST RETURN ON ASSETS
Mean	2.292772	-0.704994
Median	2.316253	-0.550813
Maximum	3.981549	1.022093
Minimum	0.202048	-4.775377
Std. Dev.	0.844174	0.9948
Skewness	-0.154186	-0.779753
Kurtosis	2.499635	4.004334
Jarque-Bera	3.627317	36.1278
Probability	0.163057	0
Sum	577.7785	-177.6584
Sum Sq. Dev.	178.8699	248.3964
Observations	252	252

When coming to the summery of the table researcher finds that there is a huge decrement in the performance of the textile sector from the pre period (2000-2007) to post period (2008-2013) in the perspective of return on asset.

The comparison of pre and post period of return on equity is shown in the table 4. The mean for the pre period is 3.259 and for the post period is 0.261. The mean is decreasing from the pre period to post period. The most middle value or median of pre period return on equity is 3.283 and the most middle value or median of post period return on equity is 0.416 which shows that it is decreasing from pre period to post period. The maximum of pre period return on equity is 4.948 and the same value for post period is 1.989. These values show that maximum value is decreasing from pre period to post period. The minimum value of the data for pre period return on equity is 1.169 and the minimum value for post period return on equity is -3.808 which shows huge decrease from pre period to post period.

Table No 4: Return on Equity Comparison Pre and Post Energy Crises Period

	PRE RETURN ON EQUITY	POST RETURN ON EQUITY
Mean	3.259756	0.26199
Median	3.283237	0.416171
Maximum	4.948533	1.989077
Minimum	1.169032	-3.808393
Std. Dev.	0.844174	0.9948
Skewness	-0.154186	-0.779753
Kurtosis	2.499635	4.004334
Jarque-Bera	3.627317	36.1278
Probability	0.163057	0
Sum	821.4585	66.02151
Sum Sq. Dev.	178.8699	248.3964
Observations	252	252

Similarly when we see downward the standard deviation value for pre period return on equity is 0.844. On the other hand standard deviation for the post period return on equity is 0.99. From these values we can easily interpret that data is scattering from pre period to post period. Further going downward in the mentioned table the value of skewness for pre period return on equity is -0.154 and the value of skewness for post period return on equity is -0.779 which shows that data avails comparatively less symmetry from pre period to post period. When researcher talks about the Kurtosis which is immediate below the Skewness the value of pre period return on equity is 2.499 and the same value for post period is 4.004. Kurtosis is increasing from pre to post period. Sum of the values of pre period return on equity is 0.163 and post period return on equity value is zero.
When coming to the summery of the table researcher finds that there is a huge decrement in the performance of the textile sector from the pre period (2000-2007) to post period (2008-2013) in the perspective of return on equity.

CONCLUSION

The study carried out to present the impact of energy crisis on the performance of the textile firms situated in Faisalabad. The contribution of textile sector is 9.8 % to GDP (Gross Domestic Product) and 39 % of total employment is directly related to this sector. The study used secondary data to analyze the performance of textile sector. Data was collected from the Financial Statement Analyses issued by the State Bank of Pakistan and Annual Financial Statements of the textile companies. The study used E-Views 07 software to calculate the Ordinary Least Square Method to analyze the results.
From the results it is clearly hauled out that there is an inverse relationship between load shedding and the performance of the companies. Recommendations will be used to enhance certain factors about the energy resources in textile sector and the future research would examine the generalization of the results beyond the said sector.

POLICY RECOMMENDATIONS

Though the load shedding problem comes from the systematic process but companies have to cover it by its own limited resources. For example most of the companies are trying to set up their own energy power stations. Some leading textile companies are generating their own power supply to avoid these circumstances. Government should encourage the large units to produce energy and supply it to other small units.

REFERENCES

[1] Fazli Wahid, Rozaida Ghazali, Muhammad Fayaz, and Abdul Salam Shah, "A Simple and Easy Approach for Home Appliances Energy Consumption Prediction in Residential Buildings Using Machine Learning Techniques," *Journal of applied Environmental and Biological Research*, pp. 108-119, 2017.

[2] Elizabeth Mills, "Pakistan's Energy Crisis," 2012.

[3] B.A. Syed, "Pakistan's Energy Crisis, Causes, new policies and plausible solutions," p. 1, 2010.

[4] D Stern and C Cleveland, "Energy and Economic Growth," Rensselaer Working Papers in Economics, 1-42 2004.

[5] Eid Rehman, Muhammad Sher, Hussnain Naqvi, and Anwar Ghani, "Energy Efficient Stable

Clustering Using Density Variation for Wireless Mobile Sensor Network," *Journal of applied environmental and biological sciences*, vol. 7, no. 3, pp. 49-58, 2017.

[6] Sharafat Ali, Hamid Waqas, and Najid Ahmad, "Analyzing the Dynamics of Energy Consumption, Liberalization, Financial Development, Poverty and Carbon Emissions in Pakistan," *Journal of Applied Environmental and Biological Sciences*, vol. 5, no. 4, pp. 166-183, 2015.

[7] GOP, "Economic Survey of Pakistan," Islamabad, 2006 & 2007.

[8] Beenish Shah, Sri Devi Essrani, and Nida Shah, "The Impact of Energy Crises on the Textile Sector of," *Journal of Emerging Issues in Economics, Finance and Banking*, vol. 1, pp. 401-413, May 2013.

[9] Hafiz Muhammad Yaseen, "Impact of Electricity Crises and Interest Rate on Textile," *academy of contempory research journal*, vol. 1, pp. 32-35, 2012.

[10] Aftab A Khan and Mehreen Khan, "Pakistan Textile Industry Facing New Challenges," *Research Journal of Internatıonal Studıes*, no. 14, pp. 21-29, may 2010.

[11] Francois Calldo, "Eskom's power crisis:Reasons, impact & possible solutions," *solidariteit solidarity*, pp. 1-19, 2008.

[12] Nobuhiro Hosoe, "Japanese Manufacturing Facing the Power Crisis after Fukushima," pp. 1-33, april 2013.

[13] Walayat Shah, Usman Ali Warraich, and Kazi Kabeer, "Challenges Faced by Textile Industry of Pakistan: Suggested Solutions," *KASBIT Business Journal*, pp. 33-39, 2012.

[14] Syed Turab Hussain, Usman Khan, Kashif Zaheer Malik, and Adeel Faheem, "The Constraints to Industry in Punjab, Pakistan," *The Lahore Journal of Economics*, vol. 17, pp. 135–189, September 2012.

[15] Nyasha Kaseke and Sephen Hosking, "cost of electricity load shedding to mines in zimbabwe," *International Journal of Physical and Social Sciences*, vol. 2, no. 6, pp. 207-237, june 2012.

[16] Yaqoob Ahmed, Shahid Jan Kakakhel, Samina Gul, and Muhammad Tariq, "Root Causes of the Failure of Industries in the Province of Khyber Pakhtunkhwa, Pakistan," *Journal of Applied Environmental and Biological Sciences*, vol. 5, no. 12, pp. 345-356, 2015.

[17] Haider Ali and Muhammad Nawaz, "energy crisis and productive inefficiency," *Institute of Development Economics,* pp. 1-26, 2013.

[18] R Siddiqui, H Jalil, M Nasir, W Malik, and M Khaid, "The Cost of Un served Energy: Evidence from Selected Industrial Cities of Pakistan," *PID Working Papers 75*, 2011.

[19] sadaf Jaleel, "pakistan industrial growth," Rawalpindi, 2011.

[20] Fazeleh Khadem and Azam Muhammad Bagher, "Environmental Effects of Energy Intensive Industries in Iran," *Journal of Appled Environmental and Biological Sciences*, vol. 4, no. 6, pp. 103-109, 2014.

[21] Rohollah Vafakish, Samira Ghiyasi, and K Najafi, "Economic Evaluation of Khamir Hot Spring Complex Travel Cost Method," *Journal of Appled Environmental and Biological Sciences*, vol. 4, no. 8, pp. 40-44, 2014.

[22] N Burns and SK Grove, *The Practice of Nursing Research*, 5th ed.: Conduct,Critique and Utilization, 2005.

[23] M Khan and A Khan, "Pakistan Textile Industry Facing New Challenges," *Research Journal of International Studies*, no. 14, pp. 21-29, 2010.

[24] Azhagaiah, Ramachandran, and G. Candasamy, "The Impact of Capital Structure on Profitability with Special Reference to IT Industry in India," *Managing Global Transitions 9 (4)*, pp. 377-383, 2011.

[25] E. Altman, "A further empirical investigation of the bankruptcy cost question," *Journal of Finance", Vol. 39*, pp. 1069-1085, 1984.

[26] J.T. McClave and T. Sincich, *Statistics, 8th Edition*. New Jersey: Prentice Hall, Upper Saddle River, 2000.

[27] F. Naqvi and U. Yousuf, "Textile Sector Performance of Pakistan," *Journal of Middle Eastern finance & Economics, 13*, pp. 1-9, 2011.