Causal factors of Textile sector growth: An Econometric Case study In Pakistan.

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Abstract —The aim of this study is to empirically analysis the relationship between interest rate, inflation, loan disbursed to textile sector, energy crises and yarn prices with textile sector growth in Pakistan during 2001 to 2011.Dependent variable is Textile sector growth Independent variables are Interest rate,, Inflation, Energy crisis, Price of cotton yarn and Loan disburses to textile sector. Data has been composed of secondary sources. The data collected from economic survey of Pakistan and financial stability review issued by state bank of Pakistan during 2001 to 2011.Quantitative data examined by using Econometric models with the help of Eview software. This study explains that inflation, interest rate, electricity crisis and yarn price have a negative relationship with the growth of textile industry. The high cost of production resulting from electricity crisis inflation, high interest rate, has been the primary cause for negative growth of the textile. These variables affected the production of Pakistan's textile industry very badly.

Keywords—Textile sector growth in Pakistan, Energy crisis, Cotton Yarn price, Loan disburses.

1. INTRODUCTION

Textile sector growth always has been a continuous course of action for three decades due to the high quality cotton thread that consists of long staple fiber.The textile sector occupies a critical position in the Pakistani economy in term of its share on GDP, BOP, and task force employed in a state. The textile sector contributes 52% of total exports earning of the country, account for 46% of total manufacturing, contribute 8.5% of total GDP and provide employment for 38% of the manufacturing labor force.

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Pakistan is the fourth largest cotton manufacturer in the globe. Due to its plentiful, indigenous cotton supply, the textile industry is central to the Pakistan's economy and it's both a source of employment and trade surplus. The textile industry has consistently contributed more than half of Pakistan's exports from 2001 to 2010 . Now investment in textile sector has shown a rapid decline, adversely impact on the future prospects of the textile sector. The success of the cotton harvest is critical to the health of the textile industry. Pakistan has suffered from a number of cotton failures over the several years.These crucial points drove up the monetary value of cotton and this coupled with a market recession and tightened financial regulation led to a weakened textile industry. Pakistan was a net, cotton exporter in early 19th but now a major importer of cotton to meet the rising requirement of its domestic cotton based industry. Over 2005 to 2010, Pakistan has been importing 3 to 5 million bales of cotton each year which increase the pressure on the trade deficit. In contrast to the situation , The top three cotton producer in the world China, India and USA have substantially increased cotton production over the same period outstripping others including Pakistan in the world cotton market.

Regrettably, some poor conditions, together with interest rate the ever increasing inflation, energy crisis and rising cotton prices overwhelm the ever increasing spinning

activities of the sector. But also the neighboring countries cheap labor force have harshly adverse the yield and the maturation of the sector.

The Pakistan textile industry is facing toughest period in last 20 years. Serious internal issues in the country also affect Pakistan's textile growth. The high cost of production resulting from increasing energy cost has been a cause of concern for the industry. Furthermore Increasing interest rates caused barriers to open new manufacturing units and also increase the monetary value of surviving units. Price of cotton yarn and other sensitive material employed in textile fluctuate in Pakistan. The rapid addition of monetary value was due to inflation and instable internal condition of Pakistan. Inflation is basically a rise in the general price level. It is declining real value of money. The heightened trend of inflation increase cost of production, which returns in downsizing. In Pakistan, double digit inflation rate cause a reduction in exports of textile. The study is consisting of five parts.**1.** Introduction in which brief introduction of topic, history, current facts about Textile sector in Pakistan. **2.** Literature review in which previous theories are discussed. **3**. Modeling framework in which econometric model and research methodology are explained. **4.** Estimation results. **5.** Conclusion and some policy implications.

Research Question

- ✓ How does the rising trend of inflation and interest rate affect textile sector growth?
- ✓ How does the energy crises, high yarn prices and loan disbursed to textile sector can hurt textile sector growth?

Research Objective

The purpose of this work is to empirical analysis the relationship between interest rate, rising prices, loan disbursed to the textile sector, energy crises and yarn prices with textile sector growth in Pakistan during 2001 to 2011.

In this study following variables is considered:

Dependent variable: Textile sector growth

Independent variables:

- Interest rate
- Inflation.
- Energy crisis
- Loan disburses to textile sector.
- Price of cotton yarn.

2. LITERATUER REVIEW

The Pakistan textile sector is suffering in the worst period in decades. Serious internal issues such as energy shortfall, high interest rate, inflation and high costs of cotton thread. (Afzal,Yaseen 2012). The shortage of electricity and high interest rate raised the cost of production of textile industries. Because the industries production is underutilizes due to load shedding. Less production leads towards high fixed cost per unit.Beenish, Seridevi, Nida,and Nayab(2013) explained comparison of pre-crisis period (2005 to 2006) and post crisis period (2007 -2010).The study used horizontal analysis of the major ratio(profitability, liquidity, asset management and debt management) for entire period. According to their findings ROA, ROE and NPM has declining trend in post energy crisis period. The debt management and asset management ratio evidence the bad management of debt and assets of textile sector during energy crisis period. The study conclude that textile sector in Pakistan has been badly affected in post energy crisis period as compare to pre energy crisis period. Furtermore, Walayat,Usman and Kazi(2012) observed challenges faced by textile industry in Pakistan through qualitative study. The study reveals that textile industry in Pakistan is the backbone of the economy. The challenges faced by this sector are Energy crisis, fluctuation in yarn prices, shortage of gass supply, law and order situation, devaluation of currency lack of R&D institutions lack of modern machinery and high production cost. The study concludes that textile sector can play vital role for the development of the economy if challenges and barriers remove on time. Some challenges are uncontrollable but it can be minimize through proper management initiatives.

Imran (2011) studied the impact of global financial crisis on textile industry of Pakistan. For that purpose he foused 141 factories in Faisalabad, Pakistan. The study concluded that global financial crisis of year 2008 along with energy crisis and inflation has adversely

affected the firms in Faisalabad. In contrast, Sumra (2012) evident that global financial crisis of 2008 had very little or no impact on our textile sector performance. She has concluded that main cause of downward trend of Pakistan's textile industry is energy shortfall, law and order situation, and lack of active marketing activities and high cost of production.

Muhammad usama abbasi (2011) The Industry shows remarkable growth in last 4 decade before 9/11 but has faced downfall in last decade with various textile mills and industries fails to contribute in economy of Pakistan and sustain profitability because of increase in raw material prices and due to power shortage in country. These entire things caused shutting down of textile mills in Faisalabad, causes unemployment and shifting of customer preferences to other South Asian countries like India, China and Bangladesh. Also there is shifting of mills to Bangladesh due to energy crises and law & order conditions in the country. The Textile Industry of Pakistan also lacks skilled human capital. This is one of the major concerns of the industry.

3. MODELLING FRAMEWOREK

RESEARCH METHODOLOGY

The study is mainly based on literature review due to time and financial constraints.Various researches and articles relevant to the subject have been perused and a thorough Synthesis is presented here after careful analysis.Data has been composed of secondary sources. The data collected from economic survey of Pakistan and financial stability review issued by state bank of Pakistan during 2001 to 2011.Quantitative data examined by using Econometric models with the help of Eview software.The liner multiple regression models developed for this study is as follows:

GTS = f (INT, INF, EC, CP, LD)

ECONOMIC MODEL: $GTS = \beta0 + \beta1\ INT + \beta2\ INF + \beta3\ EC + \beta4\ CP + \beta5\ LD + €$

Whereas:

GTS = Growth of textile sector , INT = interest rate, INF = Inflation, EC =Energy crisis, LD = Loan disburse , CP= Cotton price, € = Error

RESEARCH HYPOTHSIS

H1: There is negative relationship between interest rate and textile sector growth in Pakistan.

H2: There is negative relationship between inflation rate and textile sector growth in Pakistan.

H3: There is negative relationship between energy crisis and textile sector growth in Pakistan.

H4: There is negative relationship between cotton price and textile sector growth in Pakistan.

H5: There is positive relationship between loans disburses to textile sector and textile sector growth in Pakistan.

4. Estimation Result

The regression result found that adjusted R is equal to 97% and shows that the explanatory variables explain 97% of the variation of textile sector in Pakistan. The Durban Watson is equal to 2.2 indicating that the error is not correlated .F statistics probability is 0.00045 which explain overall model is good fit.

Table 1 is shown descriptive statistics of this study. The average, mean, median maximum, minimum values and standard deviation of all variables of textile sector growth in Pakistan are explained from 2001 to 2010. The dependent variable growth of textile sector has a mean value of 0.076, has ranged from -0.017 to 0.24 with 0.087 standard deviation. The explanatory variable interest rate has mean value 0.11 with a range from 0.056 to 0.14 and 0.029 standard deviation. Furthermore, Inflation rate has mean value 9.35 from 3.10 to 20.77 range with 5.39 standard deviation. Loan is disbursed to textile sector has a mean value of 20.02 with a range from 15.2 to 29.3 and standard deviation is 4.9. Cotton price has a mean value 3740 with a range from 1875 to 9002 and standard deviation is 2064.Energy crisis has average value 19.9 with a range from 87.5 to 32.5 and standard deviation is 943.16.

Hypothesis 1 is accepted explaining a negative relationship between interest rate and growth of textile sector in Pakistan. According to regression result beta coefficient is -0.9 and it is statically significant 0.023 at 5% level of significance.

Hypothesis 2 is not accepted explaining a negative relationship between inflation and textile sector growth .Although beta coefficient is -0.0012 same as international evidence but it is statically insignificant 0.47 at 5% level of significance.

Hypothesis 3 is not accept explaining negative relationship between energy crisis and textile sector growth According to regression result beta coefficient is -0.06 and it is statically insignificant at 5% level of significance.

Hypothesis 4 is not accepted showing negative relationship between cotton price and growth of textile sector. The beta coefficient is 0.07 which is reverse according to internal evidence but it is statically significant 0.048 at 5% level of significant.

Hypothesis 5 is accepted showing positive relationship between loans disburses to textile sector. According to result findings beta coefficient is 0.012and statistically significant 0.005 at 5% level of significance.

According to correlation matrix which is shown in table 2, Growth of textile sector has negatively related to Interest rate, rising prices, cotton price and energy crisis which are -0.7,-0.4,-0.60 and -0.75 respectively. This explained that if these entire variables are increased, the price of production increased which turn-down growth of textile sector. Loan is disbursed has a positive relationship with GTS. LD negatively correlated with INT and INFwhich is -0.71 and -0.39CP has negatively correlated with GTS and LD which is -0.60 and -0.64 but positively correlated with INT and INF which is 0.53 and 0.56 respectively. Energy crisis moderately correlated with two other explanatory variables inflation and LD pricewhich is 0.70 and -0. 73 respectively.Hence, There is no multicollenearity problem with this data.

5. CONCLUSION & POLICY IMPLICATION

This study explains that inflation, interest rate, electricity crisis and yarn price have a negative relationship with the growth of textile industry and R square tells that 98% variation in the production of textile industry is explained by electricity crisis interest rate, inflation and yarn prices.These variables affected the production of Pakistan's textile industry very badly. The high cost of production resulting from electricity crisis inflation, 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. Although the sector consist of lot of weaknesses but as a cash cow of the economy it commands some strengths like cheap labor force, self production of raw material, skilled engineers, boom in fashion designing etc, given the fact that the industry still provides the major share of export and employment opportunities so there is a more than a greater need for steps in right direction by Government to provide subsidies to the survival of the industry.

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Appendex

Table 1 **Descriptive Statistics**

	GTS	INT	INF	LD	CP	EC
Mean	0.076000	0.110030	9.350000	20.02000	3740.900	1908.600
Median	0.046500	0.114000	8.600000	18.30000	3305.500	1778.000
Maximum	0.245000	0.145000	20.77000	29.30000	9002.000	3249.000
Minimum	-0.017800	0.056800	3.100000	15.20000	1875.000	875.0000
Std. Dev.	0.087193	0.029342	5.395165	4.975897	2064.170	943.1681
Skewness	0.882663	-0.547366	0.800175	1.117916	1.746899	0.283249
Kurtosis	2.565614	2.129882	3.039044	2.724606	5.395520	1.518987
Jarque-Bera	1.377112	0.814809	1.067769	2.114495	7.477140	1.047634
Probability	0.502301	0.665375	0.586323	0.347411	0.023788	0.592256
Sum	0.760000	1.100300	93.50000	200.2000	37409.00	19086.00
Sum Sq. Dev.	0.068423	0.007749	261.9702	222.8360	38347193	8006094.
Observations	10	10	10	10	10	10

Table 2 **Correlation Matrix**

	GTS	INT	INF	LD	CP	EC
GTS	1.000000					
INT	-0.770174	1.00000				
INF	-0.438111	0.07162	1.00000			
LD	0.973733	-0.71382	-0.39377	1.000000		
CP	-0.601194	0.53311	0.56421	-0.647904	1.00000	
EC	-0.756641	0.41638	0.70020	-0.738002	0.61377	1.000000

Table 3

Regression Results:

Dependent Variable: GTS

Method: Least Squares

Sample: 2001 2010

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.185603	0.220681	-0.841047	0.4477
INT	-0.931115	0.262759	-3.543611	0.0239
INF	-0.001222	0.001540	-0.793644	0.4718
LD	0.012817	0.002284	5.610620	0.0050
LOG(CP)	0.070039	0.024925	2.809932	0.0483
LOG(EC)	-0.060511	0.031650	-1.911873	0.1285

R-squared	0.989798	Mean dependent var	0.076000
Adjusted R-squared	0.977046	S.D. dependent var	0.087193
S.E. of regression	0.013210	Akaike info criterion	-5.531961
Sum squared resid	0.000698	Schwarz criterion	-5.350410
Log likelihood	33.65981	Hannan-Quinn criter.	-5.731122
F-statistic	77.61921	Durbin-Watson stat	2.225739
Prob(F-statistic)	0.000451		