



Year 2017

**Relationship among electricity consumption,
GDP, CPI and FDI investment: comparative
insight between Pakistan & BRIC countries**

MS-FINANCE THESIS

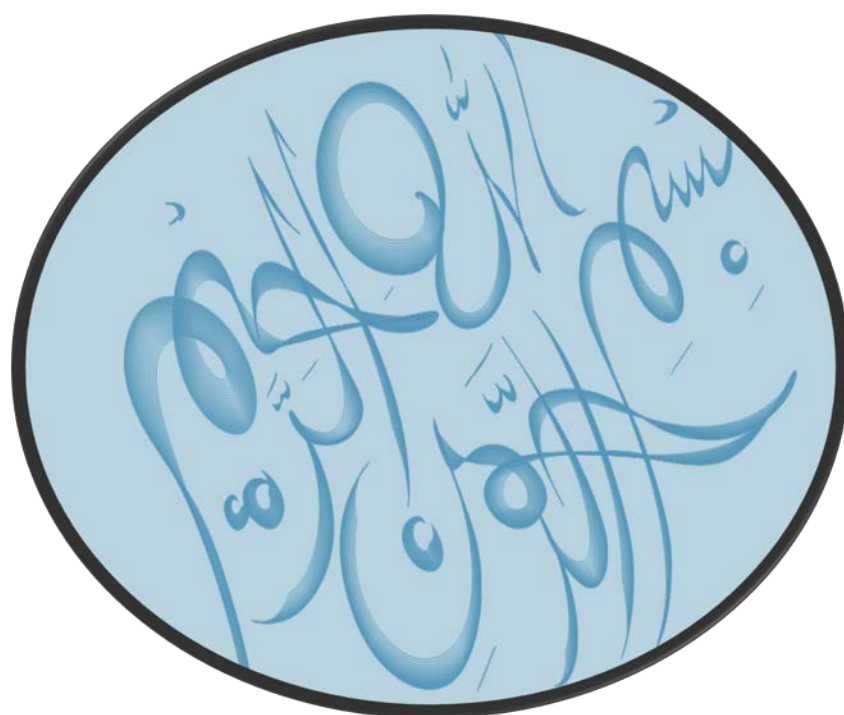
Supervised By

Dr. Rubeena Tashfeen



Ahmed Farhan (15008096005)

UNIVERSITY OF MANAGEMENT & TECHNOLOGY, LAHORE



**IN THE NAME OF ALLAH THE MOST BENEFICENT
AND THE MERCIFUL**

APPROVAL PAGE

Name of Student: Ahmed Farhan

Degree: Master of Science (Finance)

Title: Relationship among electricity consumption, GDP,
CPI and FDI investment: comparative insight
between Pakistan & BRIC countries

Supervised By: Dr. Rubeena Tashfeen

Signature:

Co-Supervisor: Mr. Faisal Sajjad

Signature:

Director, Finance Mr. Tahseen Mohsin

Department:

Signature:

Date Defended/Approved: []

DEDICATED

To

My Beloved

PARENTS

I'm here just because of their blissful love, always showered on me and their continuous encouragement at every step of my life, they taught me to pay respect to humanity and to love all.

&

To the researchers, thinkers and entrepreneurs;

Who utilize their mind power in a way to get the answers like how, when and why for the benefits of the society

DECLARATION

I, Ahmad Farhan, hereby declare that the topic printed in this thesis is my original work and has been carried out under the supervision of Dr. Rubeena Tashfeen and co-supervision of Mr. Faisal Sajjad. To the best of my knowledge, this thesis does not contain any material that has been submitted for the award of any other degree in any other university, neither does this thesis contain any material published or written previously by any other person, except in the text for which due references are given.

Ahmad Farhan

15008096-005

COURSE COMPLETION CERTIFICATE

Dated:

It is certified that Course requirements of Ahmad Farhan, Roll No. **15008096-005** for the program **MS Finance** has been completed and his current CGPA is_____.

CoD Finance: -----
(Associate Professor Dr. Rubeena Tashfeen)

Director (MS): -----
(Mr. Tahseen Mohsin)

RESEARCH COMPLETION CERTIFICATE

It is certified that the research work contained in this thesis entitled

**Relationship among Electricity Consumption, GDP, CPI and FDI Investment:
Comparative Insight between Pakistan & BRIC countries**

Has been accepted and completed by **Ahmad Farhan** under my supervision during
his **MS Finance** program.

(Mr. Faisal Sajjad) (Dr. Rubeena Tashfeen)
Co-Supervisor
&&
Lecturer Finance

Supervisor
C.o.D. Finance

ACKNOWLEDGEMENT

I am thankful to ALLAH Almighty, who gave me the opportunity to do this research work. I am also greatly thankful to Hazrat Muhammad (ﷺ) who is the real source of knowledge in the world.

First of all, I express my heartfelt gratitude to my Supervisor Dr. Rubeena Tashfeen and co-supervisor Mr. Faisal Sajjad for their scholarly guidance, with their help, encouragement, and co-operation at every step, I have been able to complete this dissertation.

I pay my hearty gratitude to my loving AMI JAN, whose praying hands, guidance, confidence, and encouragement have contributed immensely to my capabilities and all she has been done for me through my life.

In achieving this level, I will give special tribute to the Manager ORIC- UMT, who being manager of 'Office of Research Innovation & Commercialization (ORIC)' with his departmental team is working a lot in enhancing the research promotion culture of the university. I am also thankful to UMT librarian libraries for his ever-ready help with his staff.

In the end, it will be unfair not to be thankful to other faculty members of SBE department. The journey which started with Mr. Mobin Ajmal, Dr. Noman, & Mr. Ahsan approached to end with Dr. Safia Nousheen had been more easy and successful with a faculty member of Department of Economics- Mr. Noman Arshed; who have always been very kind and generous in helping me a lot of different steps of the thesis.

DEDICATED

TO

My father

Who had always been a source of inspiration for me. By whose motivation I have been able to choose the path of taking innovation in research-abilities in my country.

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ABBREVIATIONS of Study

ARDL	Auto regressive Distributive Lag
BoP	Balance of Payment
BRIC	Brazil, Russia, India, and China (Alternatively called as ‘Big Four’ countries)
CO ₂	Carbon Dioxide
CPEC	China, Pakistan Economic Corridor
CPI	Consumer Price Index
CPPA	Central Power Purchasing Authority
EKC	Environmental Kuznets Curve
ETF	Energy Task Force
FDI	Foreign Direct Investment
GCISC	Global Change Impact Studies Center
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GNP	Gross National Product
GoP	Government of Pakistan
HDIP	Hydrocarbon Development Institute of Pakistan
IEA	International Energy Agency
IEA-STAP	International Energy Office - Energy Application Systems Reasoning Document
IPPs	Independent Power Procedures
KESC	Karachi Electric Supply Company

KESCO	Karachi Electric Supply Corporation
KWh	Kilowatt- Hours
LM	Lagrange Multiplier
MoP	Ministry of Power
MW	Megawatt
NEPRA	National Electric Power Regulatory Authority
NTRC	National Transport Research Center
PAEC	Pakistan Atomic Energy Commission
Pak-IEM	Pakistan Embedded Energy Assistant
PEPCO	Pakistan Electric & Power Company
PIDE	Pakistan Institute of Development Economics
PIEAS	Pakistan Institute of Engineering and Applied Sciences
SAARC	South Asian Association for Regional Cooperation
TIMES	The Integrative MARKAL/EFOM System
TWh	Terawatts-hours
UETL	University of Engineering & Technology, Lahore
UETT	University of Engineering & Technology, Taxila
VAR	Vector Auto-Regressive Model
VECM	Vector Error Correction Model
WAPDA	Water and Power Development Authority
WB	World Bank
ECN	Electricity Corporation of Nigeria

ABSTRACT

The Purpose and aim of this study is to investigate the relationship between electric power consumption, Economic Growth (GDP), Consumer Price Index (CPI) and Foreign Direct Investment (FDI) in ‘Pakistan and BRIC countries’, by applying Cointegration technique’ for the period 1990-2015. Johansen Cointegration for long- run and Vector Error Correction Model for a short-run relationship have been applied to find out the relationship of the variables mentioned above. ‘Granger Causality test’ is also applied to find any cause among variables of this study.

The results observed and obtained from tests of cointegration settle that different countries depict different relationships in long-run and short-run. Although all of Pakistan, Brazil, Russia, India & China show ‘long-run relationship’ in the study. Yet, the reasons for the short-run relationship differ. For instance, in case of China; it is shown that she must practice, such policies, which increase ‘Foreign Direct Investment’ to prompt ‘Electricity consumption’. Furthermore, the findings of the study indicate that policymakers should adopt and implement policies keeping in view the country-specific ground facts and causing the behaviour of variables in this causal relationship study.

Keywords: Electric Power consumption, Economic Growth, Pakistan, BRIC, ‘CPI’, ‘FDI’ and GDP.

CHAPTER NO.1: INTRODUCTION

Electricity is a critical issue and a distinctive pattern of energy and its vitality is rapidly increasing day by day. Also, this glaring fact shows that human civilization is struggling & sprawling with the flexible use of electricity. To meet this challenging & thought-provoking task, demand for electricity is associated with all aspects of overall development. Electrification is connected and associated with increased factors like savings and higher income, higher industrial and agricultural productivity, less poverty, and hence leads to prosperity. A realistic and credible demand forecast of electrical energy resources is essential; furthermore, efficient policies in command play significant role to sustain economic growth: said by (Wolde-Rufale) in 2006.