

**CAPITAL ASSET PRICING MODEL ON NEPAL STOCK
EXCHANGE**

A Thesis

By

Anil Sah

Central Department of Management

Roll. No: 1083/17

Registration No: 7-2-439-12-2010

In Partial Fulfillment of the Requirement of Degree of
Masters of Business Studies (MBS Semester System)

In the
Faculty of Management
Tribhuvan University

Kathmandu, Nepal

March, 2020

CERTIFICATION OF AUTHORSHIP

I certify that the work in this thesis entitled “**Capital Asset Pricing Model on Nepal Stock Exchange**” has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text. I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the reference section of the thesis.

.....

Anil Sah

Date:

RECOMMENDATION LETTER

It is certified that thesis entitled “**Capital Asset Pricing Model on Nepal Stock Exchange**” submitted by Anil Sah is an original piece of research work carried out the candidate under my supervision. Literary presentation is satisfactory and the thesis is in a form suitable for publication. Work evinces the capacity of the candidate for critical examination and independent judgment. Candidate has put in at least 60 days after registration the proposal. The thesis is forwarded for examination.

.....
Asso. Prof. Dr. Govinda Tamang
Thesis Supervisor
Central Department of Management
Tribhuvan University
Kirtipur, Kathmandu, Nepal
Date:

APPROVAL-SHEET

We, the undersigned, have examined the thesis entitled “**Capital Asset Pricing Model on Nepal Stock Exchange**” presented by Anil Sah, a candidate for the degree of Master of Business Studies (MBS) and conducted the viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

.....
Asso. Prof. Dr. Govinda Tamang
Thesis Supervisor

.....
Prof. Dr. Puspa Raj Sharma
Internal Examiner

.....
Prof. Dr. Bhoj Raj Aryal
External Examiner

.....
Prof. Dr. Sanjaya Kumar Shrestha
Chairperson, Research Committee
Central Department of Management, Tribhuvan University

.....
Prof. Dr. Ramji Gautam
Head of Department
Central Department of Management, Tribhuvan University
Date:

ACKNOWLEDGEMENTS

The completion of this study was possible with the help of some wonderful people and it's a pleasure to thank them for their support. First of all my deep gratitude goes to my supervisor Asso. Prof. Dr. Govinda Tamang for his support and encouragement throughout this research. This project is the result of his continuous guidance.

I would like thank Head of Department Prof. Dr. Ramji Gautam and Research Committee Head Prof. Dr. Sanjaya Kumar Shrestha. Special thanks to Lecturer Sanjay Ghimire for helping me in this thesis. My appreciation goes to all the faculty members for their direct and indirect support.

I feel blessed to have all those wonderful people around me, thanks to all of them once again.

Anil Sah

TABLE OF CONTENTS

CONTENTS	PAGE NO
Certification of authorship	ii
Recommendation letter	iii
Approval sheet	iv
Acknowledgements	v
Table of contents	vi
List of tables	ix
List of figures	xi
Abbreviations	xii
Abstract	xiii
CHAPTER I: INTRODUCTION	1-6
1.1 Background of the study	1
1.2 Problem statement and research questions	2
1.3 Objective of the study	3
1.4 Hypothesis	4
1.5 Rationale of the study	5
1.6 Limitation of the study	5
1.7 Outline of the report	6
CHAPTER II: LITERATURE REVIEW	7-21
2.1 Theoretical review	7
2.1.1 Capital asset pricing model(CAPM)	7
2.1.2 Assumptions of the CAPM	9
2.2 Review of the empirical evidence	9
2.3 Theoretical framework	18
2.3.1 Theoretical framework for CAPM model	20

CHAPTER III: METHODOLOGY	22-26
3.1 Research design	22
3.2 Population and sample	22
3.3 Nature and sources of data	23
3.4 Data analysis method and tool	23
3.4.1 Descriptive statistics	23
3.4.2 Regression analysis	23
3.4.3 Software used	23
3.5 Models for the study	24
3.6 Process of testing CAPM	24
CHAPTER IV: RESULTS	27-57
4.1 Year wise distribution of beta	27
4.2 Average excess portfolio return and beta	27
4.2.1 Year 2011	27
4.2.1.1 Estimation of security market line	30
4.2.1.2 Test of non-linearity	30
4.2.2 Year 2012	31
4.2.2.1 Estimation of security market line	32
4.2.2.2 Test of non-linearity	33
4.2.3 Year 2013	33
4.2.3.1 Estimation of security market line	34
4.2.3.2 Test of non-linearity	35
4.2.4 Year 2014	36
4.2.4.1 Estimation of security market line	37
4.2.4.2 Test of non-linearity	38
4.2.5 Year 2015	38
4.2.5.1 Estimation of security market line	39

4.2.5.2 Test of non-linearity	40
4.2.6 Year 2016	41
4.2.6.1 Estimation of security market line	42
4.2.6.2 Test of non-linearity	42
4.2.7 Year 2017	43
4.2.7.1 Estimation of security market line	44
4.2.7.2 Test of non-linearity	45
4.2.8 Year 2018	45
4.2.8.1 Estimation of security market line	46
4.2.8.2 Test of non-linearity	47
4.2.9 Year 2019	47
4.2.9.1 Estimation of security market line	48
4.2.9.2 Test of non-linearity	49
4.2.10 Whole study period (2011-2019)	50
4.2.10.1 Estimation of security market line	51
4.2.10.2 Test of non-linearity	51
4.3 Testing consumption CAPM	52
4.3.1 Descriptive statistics	52
4.4 Findings of the study	54
CHAPTER V: CONCLUSION	58-62
5.1 Discussion	58
5.2 Conclusions	60
5.3 Implications	61
REFERENCES	63-67

LIST OF TABLES

TITLE OF TABLE	PAGE NO
2.1 Summary of empirical studies on validity of CAPM model	15
2.2 Theoretical development of CAPM	20
3.1 Period Range, Portfolio formation and testing period	25
4.1 Sample companies beta during different year	28
4.2 Portfolio return and portfolio beta for the year 2011	29
4.3 Result of test of SML	30
4.4 Result of test of non-linearity	30
4.5 Portfolio return and portfolio beta for the year 2012	31
4.6 Result of test of SML	32
4.7 Result of test of non-linearity	33
4.8 Portfolio return and portfolio beta for the year 2013	34
4.9 Result of test of SML	35
4.10 Result of test of non-linearity	35
4.11 Portfolio return and portfolio beta for the year 2014	37
4.12 Result of test of SML	37
4.13 Result of test of non-linearity	38
4.14 Portfolio return and portfolio beta for the year 2015	39
4.15 Result of test of SML	40
4.16 Result of test of non-linearity	40
4.17 Portfolio return and portfolio beta for the year 2016	41
4.18 Result of test of SML	42
4.19 Result of test of non-linearity	43
4.20 Portfolio return and portfolio beta for the year 2017	44
4.21 Result of test of SML	44
4.22 Result of test of non-linearity	45
4.23 Portfolio return and portfolio beta for the year 2018	46
4.24 Result of test of SML	47
4.25 Result of test of non-linearity	47
4.26 Portfolio return and portfolio beta for the year 2019	48
4.27 Result of test of SML	49

4.28 Result of test of non-linearity	49
4.29 Portfolio return and portfolio beta for the year 2011-2019	50
4.30 Result of test of SML	51
4.31 Result of test of non-linearity	52
4.32 Descriptive statistics for the variables portfolio returns, excess portfolio returns and market premium	53

LIST OF FIGURES

LIST OF FIGURES	PAGE NO
Figure 1: Risk-return relationship for asset pricing	19
Figure 2: Theoretical models for the CAPM model	21
Figure 3: Line graph of portfolio returns	53

ABBREVIATIONS

ASE	Amman Stock Exchange
APT	Arbitrage Pricing Theory
BV/MV	Book value to Market value Ratio
CAPM	Capital Asset Pricing Model
CBS	Central Bureau of Statistics
DY	Dividend Yield
EPS	Earnings Per Share
GDP	Gross Domestic Product
GARCH	Generalized Auto Regressive Conditional Heteroscedasticity
ICAPM	Intertemporal Capital Asset Pricing Model
ISE	Istanbul Stock Exchange
MIDAS	Mixed Data Sampling
NEPSE	Nepal Stock Exchange
NYSE	New York Stock Exchange
P/E	Price to Earnings Ratio
SML	Security Market Line
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
US	United States
VAR	Vector Autoregressive Method

ABSTRACT

Capital Assets pricing Model (CAPM) provides an equilibrium linear relationship between risk and expected return of an assets. Since, the birth of CAPM by (Treyner,1961, 1962; Sharpe, 1964; Lintner, 1965; Mossin, 1966), enormous efforts have been devoted to studies evaluating applicability of this model. Some empirical studies such as (Suare and Murohy, 1992; Black and Fisher, 1993; Daniel and timan, 1997), have appeared to be in harmony with the principles of CAPM while studies made by (Roll, 1977; Harris*etal.*, 2003) and so on contradict the model. The study aims on applying the capital assets pricing model (CAPM) on Nepal Stock Exchange taking monthly data for 29 companies from 2011 to 2019. All the data are collected from official site of Nepal Stock Exchange, Nepal Rastra Bank, Central Bureau of Statists.

This study is based on secondary data. For the purpose of this analysis, this study has used approach methods as describe by Black, Jensen and Scholes(1972) time series test, Fama and MacBeth (1973) cross-sectional test and regression model of CAPM. The CAPM study is conducted by dividing the study period as 10 different year of one year each and for long period consisting of whole study period.

The both short period and long period analysis of CAPM gives the mixed results and couldn't provide conclusive evidence in support of CAPM. The study found negative beta value in some of the stock and portfolio which mean their return that moves in the opposite direction from the stock market. This study also found that portfolio with higher beta and lower beta has positive and negative constant values respectively, which suggest that the portfolio with higher beta has bagged more return than CAPM predicted and portfolio with lower beta has bagged less return than CAPM predicted. The data did not provide evidence that higher beta yields higher return while slope of SML is negative and downward sloping.