UNIVERSITI PUTRA MALAYSIA

TESTING THE ARBITRAGE PRICING THEORY ON THE TEHRAN STOCK EXCHANGE

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TESTING THE ARBITRAGE PRICING THEORY ON THE TEHRAN STOCK EXCHANGE

By

POOYA SABETFAR

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

July 2011
To

My dear Parents, who always like to see me in PhD degree,

My supportive husband Reza and,

My Cute Son Eliya
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

TESTING THE ARBITRAGE PRICING THEORY ON THE TEHRAN STOCK EXCHANGE

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July 2011

Chair: Cheng Fan Fah, PhD
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The equilibrium-pricing model using Arbitrage Pricing Theory (APT) has become one of the central models of modern financial theory. However, the APT is too general in determining the factors which influences expected returns. Many empirical studies on the APT have already been conducted in free enterprise systems but, no attention has been given in full Sharia compliant close economy. Since there was no previous research on the study of APT in full Sharia compliant sanction economy, an empirical support for the APT by employing macroeconomic variables in Tehran Stock Exchange (TSE) which works in full Sharia compliant sanction economy was examined as the main objective of the research. However, this study identifies the macroeconomic variables that may have significant high impact on the stock market returns in the arbitrage pricing relationship. Also, this research aims to see whether economical and financial sanctions adversely affect stock market returns. This study undertakes to
identify the number of common factors, priced factors and the macroeconomic variables that significantly affect on TSE by employing factor analysis with principal component method from 1991-2008. Canonical Correlation Analysis (CCA) is also used to see effect of macroeconomic variables on stock returns in TSE. In this study, all the procedure is done by using individual security and grouping according to different size of portfolios separately.

The evidence points to at least one factor to three factors that explain the cross-section of expected returns in TSE from 1991-2008. Financial and economical sanctions are affecting stock market returns and the negative sign of coefficients show the opposite reaction of investors to the announcement of sanctions in TSE. The principal component analysis results suggest that there are four groups of macroeconomic variables in the test period that affect stock returns. According to CCA results in the samples, the sources of systematic risk in the period are export of the crude oil and interest rate proxy in TSE.

The results show the validly but, weak applicability of APT to estimate expected returns of the securities in full Sharia closed economy. Nevertheless, the macroeconomic variables that influence stock market returns change over time in Iranian context. This probably is a typical aspect of sanctioned market. The results also recommend the dissimilar strategies are needed to invest successfully in Iran because it is more sensitive to sanctions and different macroeconomic variables.
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

UJIKAJI TEORI ARBITRAJ HARGA KE ATAS BURSA SAHAM TEHRAN

Oleh

POOYA SABETFAR

Julai 2011

Pengerusi: Cheng Fan Fah, PhD

Fakulti: Ekonomi dan Pengurusan

Model keseimbangan-harga dengan menggunakan Arbitrage Pricing Theory (APT) telah menjadi salah satu model utama teori kewangan moden. Namun begitu, APT adalah terlalu umum untuk menentukan faktor yang mempengaruhi jangkaan pulangan. Banyak kajian empirikal terhadap APT telah dijalankan dalam sistem perdagangan bebas tetapi tiada perhatian yang diberikan kepada ekonomi tertutup yang sepenuhnya mematuhi Syariah. Memandangkan belum ada lagi kajian APT yang dilakukan terhadap ekonomi yang sepenuhnya mematuhi Syariah, kajian ini memenuhi jurang di dalam penyelidikan dengan membawa objektif utama bagi membina sokongan empirikal untuk APT menggunakan pembolehubah ekonomi makro di Bursa Saham Tehran (TSE) yang beroperasi di dalam ekonomi tertutup yang sepenuhnya mematuhi Syariah. Kajian ini mengenalpasti pembolehubah makroekonomi yang mungkin membawa kesan ketara yang tinggi ke atas pulangan di bursa saham di dalam hubungan harga arbitraj. Kajian


Berdasarkan keputusan-keputusan CCA terhadap sampel kajian, sumber risiko sistematik untuk jangkamasa kajian adalah eksport minyak mentah dan proksi kadar faedah di TSE. Keputusan-keputusan kajian mengesahkan aplikasi APT yang lemah untuk mengangggarkan jangkaan pulangan sekuriti di dalam ekonomi tertutup yang sepenuhnya mematuhi Syariah. Namun begitu, pembolehubah ekonomi makro yang
mempengaruhi pulangan pasaran saham sentiasa berubah dari masa ke semasa di Iran. Ini mungkin merupakan aspek umum bagi sesebuah pasaran yang disekat. Keputusan-keputusan juga mengesyorkan bahawa strategi yang berbeza diperlukan untuk mendapatkan pelaburan yang berjaya di Iran kerana ia lebih peka terhadap sekatan dan terhadap pembolehubah ekonomi makro yang berbeza.
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I certify that an Examination Committee met on 18 of July 2011 to conduct the final examination of Pooya Sabetfar on her Doctor of Philosophy thesis entitled “Testing the Arbitrage Pricing Theory on the Tehran Stock Exchange” in accordance with Universities and University college Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the candidate be awarded the Doctor of Philosophy.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

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POOYA SABETFAR

Date: 18 July 2011
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>ABSTRAK</td>
<td>v</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>viii</td>
</tr>
<tr>
<td>APPROVAL</td>
<td>ix</td>
</tr>
<tr>
<td>DECLARATION</td>
<td>xi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xv</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xvi</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS</td>
<td>xvii</td>
</tr>
</tbody>
</table>

## CHAPTER 1

1 **INTRODUCTION**
   1.1 Background of the Study                                            1
   1.2 Statement of the Problem                                            4
   1.3 Objectives of the Study                                             8
   1.4 Significance and Justification of the Study                         10
   1.5 Contributions of the Study                                          12
   1.6 Scope of the Study                                                  13
   1.7 Plan of the Study                                                   14

## CHAPTER 2

2 **OVERVIEW OF IRAN ECONOMY, ISLAMIC ECONOMY AND TEHRAN STOCK EXCHANGE**
   2.1 Introduction                                                        15
   2.2 Section One: Iran Economy                                            17
      2.2.1 Overview of Iran Economy                                         17
      2.2.2 Iran’s Economic Policy and Reform Effort                          20
      2.2.3 Iran’s Economic Sectors                                          22
      2.2.4 Impact of World Sanctions on Iranian Economy                     26
   2.3 Section Two: Islamic Economy                                          32
      2.3.1 The Sharia Law                                                   33
      2.3.2 Comparison Between Islamic Economy System and Capitalism Economy System  36
      2.3.3 Functions, Structure and Performance of a Stock Exchange in an Islamic Economy  39
   2.4 Section Three: Tehran Stock Exchange Market                          42
      2.4.1 Introduction                                                     42
      2.4.2 Definition of Stock Exchange Market                              42
      2.4.3 History of Stock Exchange Market In The World                    43
      2.4.4 History of Tehran Stock Exchange                                 45
      2.4.5 Tehran Stock Exchange Market Before the Revolution               46
6.3.2 Twenty Portfolios 141
6.3.3 Fifteen Portfolios 142
6.3.4 Ten Portfolios 143
6.3.5 Five Portfolios 143
6.3.6 Factor Analysis for Stock Returns -Discussion 144

6.4 Principal Component Factor Analysis: A Discussion 146
6.4.1 Number of the Common Factors 146
6.4.2 Cross-Sectional Regression of Mean Returns against Factor Loadings 148

6.5 The Factor Structure of the Iranian Economy 151
6.5.1 Principal Component Scores of Iranian Economy in the Period 152
6.5.2 Principal Component Scores of Iranian Economy Discussion 154

6.6 Relationship between Stock Market Returns and Macroeconomic Variables 154
6.6.1 Canonical Correlation Analysis in the 17-Year Full Period 155

6.7 Concluding Remark 167

7 SUMMARY, GENERAL CONCLUSION AND RECOMMENDATION FOR FUTURE RESEARCH 169
7.1 Introduction 169
7.2 Main Finding 170
7.3 Limitation of the Study 176
7.4 Implications of the Study 178
7.5 Suggestion for Further Research 181

REFERENCES 182
APPENDICESS 196
BIODATA OF STUDENT 227
LIST OF PUBLICATIONS 228