

**DETERMINANTS OF THE DEMAND FOR BANKNOTES IN MALAYSIA:  
A PARTIAL LEAST EQUATION (PLS) APPROACH**

By

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## ABSTRACT

The objective of this study is to investigate factors influencing the demand for banknotes in Malaysia. The factors examined are Gross Domestic Product (GDP), interest rates, inflation rates, exchange rates and market sentiments. Using data obtained from Bank Negara Malaysia, Malaysian Institute of Economic Research and Department of Statistics, Malaysia for the periods from Q1 2007 to Q2 2014 and analyzed using Partial Least Squares (PLS) method, the study found that, out of the five factors, only GDP and interest rates have significant influence on the demand for banknotes in Malaysia. The  $R^2$  value of 94% indicates that the five variables explain over 90% of the changes in the demand for banknotes in Malaysia. This study contributes to allowing Bank Negara Malaysia to predict more accurately the banknote demand behavior and consequently helps them to propose appropriate policy actions in order to manage the cash supply chains more efficiently.

**Keywords:** demand for banknotes, Malaysia, Partial Least Squares, Gross Domestic Product (GDP), interest rates

## ABSTRAK

Kajian ini dijalankan untuk meneliti faktor-faktor yang mempengaruhi permintaan wang kertas di Malaysia. Faktor-faktor yang dikaji adalah Keluaran Dalam Negara Kasar (KDNK), kadar faedah, kadar inflasi, kadar tukaran matawang dan sentiment pasaran. Dengan menggunakan data-data yang diperolehi daripada Bank Negara Malaysia, Institut Kajian Ekonomi Malaysia dan Jabatan Perangkaan Malaysia bagi tempoh Q1 2007 hingga Q2 2014 dan dianalisa menggunakan kaedah “*Partial Least Equation*” (PLS), dapatan kajian menunjukkan bahawa, daripada lima faktor yang dikaji, hanya KDNK dan kadar faedah yang mempengaruhi permintaan wang kertas di Malaysia. Nilai  $R^2$  sebanyak 94% menunjukkan bahawa kelima-lima variabel menjelaskan lebih daripada 90% perubahan dalam permintaan wang kertas di Malaysia. Kajian ini memberi manfaat kepada Bank Negara Malaysia dalam membuat anggaran ke atas permintaan wang kertas dengan lebih tepat lagi dan selanjutnya dapat membantu mereka dalam merangka polisi yang bersesuaian yang dapat meningkatkan lagi tahap keberkesanan rantaian nilai (*value chain*) wang tunai.

**Kata Kunci:** permintaan wang kertas, Malaysia, *Partial Least Squares*, Keluaran Dalam Negara Kasar (KDNK), kadar faedah

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## LIST OF ABBREVIATIONS

1G	First Generation
ARDL	Autoregressive Distributed Lag
AVE	Average Variance Extracted
BNM	Bank Negara Malaysia
BT	Bound Testing
CIC	Currency in Circulation
CPI	Consumer Price Index
CR	Composite Reliability
CUSUM	Cumulative Sum
ECB	European Central Bank
ECM	Error Correction Model
FSB	Financial Sector Blueprint
GDP	Gross Domestic Production
GNI	Gross National Income
GNP	Gross National Production
KDNK	Keluaran Dalam Negara Kasar
ML	Maximum Likelihood
MGS	Malaysian Government Securities
OLS	Ordinary Least Square
PLS	Partial Least Squares
PPI	Producer Price Index
SEM	Structural Equation Modeling
T-Bills	Treasury Bills
VECM	Vector Error Correction Modeling

# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

Cash<sup>1</sup> by far is the most preferred means of payment in terms of volume of transactions (Salmony, 2011). In fact, for many people worldwide, cash is the sole means of payment to carry out retail transactions. The reasons for the use of cash may vary from person to person, but cash is heavily used in people's everyday life. Cash is a simple and straightforward payment option (Siddiqui & Siddiqui, 2011). It is used more frequently than any other types of payment instrument, including debit or credit cards, particularly for small-value transactions (Bennet et. al., 2014).

Today's digital age offers electronic payment options. With that, one might expect the use of cash to be on the decline. Despite all the efforts, consumers continue to prefer cash over electronic transactions resulting in the demand for cash growing strong worldwide. In a recent study by Currency Research (2014: 32), it was observed that cash "has yet to show signs of decline in

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<sup>1</sup> The words "cash", "currency", "currency notes" and "banknotes" are used interchangeably in this thesis. They refer to "anything that is generally accepted as a means of exchange and that at the same time, acts as a measure and as a store of value" (Siddiqui & Siddiqui, 2011: 374)

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