

## Chapter 1: Introduction

Hamilton (1983) in a pioneering paper which shows that oil price increases have caused almost every post World War II recession in the US. It caused alarm as it was published at a time after the Oil Crisis of 1973 when economists and politicians were still predicting doomsday-type calamities and hailed oil as the third most important factor of production in the U.S. economy. The greatest fear being what happens when oil runs out? Thirty years on, a few oil price collapses later, with OPEC threats seemingly dim, the study of oil seemed a passé subject amongst academics.

Subsequent to Hamilton's paper (1983), some researchers have done work on other countries such as Canada, the United Kingdom, Japan and other OECD countries - mainly looking at economic activity and its response to oil shocks. However, only a handful researched into the relationship between oil price and financial sector.

*" Given the importance of oil to the world economy, it is surprising that little research has been conducted o the effects of oil shocks on the stock market"*

(Kaul 1996, p.464)

Works specific to the techniques applied in this study are Sadorsky (1999), examining changes in oil price dynamics in relation to economic activity, stock market and interest rates and; a most recent paper by Papapetrou (2001). She included the industrial employment specification in her study for a medium-sized country, Greece.

Malaysia's reaction to oil price changes in the last 30 years have not been as drastic as that of the US economy mainly because Malaysia had only just shifted from an agriculture-based economy to a manufacturing-based one in the last thirty years. We have sustained high growth rates for the last 20 years with few exceptions in late 1980's and late 1990's. Our dependency on petroleum had been not as strong compared to fully-industrialized countries. However, this is expected to change as we move towards globalization and hopes of becoming a fully industrialized country in the next 20 years. It is not envisioned that petroleum may be replaced by some other more viable source of energy. Therefore, when Malaysia experiences some kind of oil shock, it is expected to affect economy via some variables.

### *1.1. Objectives*

The **main thrust** of this paper is to examine the **short-run dynamic interactions** of oil prices, industrial production, interest rates and real stock returns in two parts. Specifically, the response of industrial production,

interest rates and real stock returns to: i) oil price changes and; ii) oil price volatility are investigated.

### *1.2. Organization of Study*

Chapter 2 presents a literature review of other related studies. Chapter 3 details the methodology used in this study. It covers the Augmented Dickey-Fuller test used in order to test for the presence of unit root and to find the order of integration. Cointegration tests for finding out if long-run relationships exist in the time series are discussed. The framework of the Vector Autoregressive model (VAR) and the related Impulse Response Function (IRF) for looking at what happens to a variable when an innovation such as an oil shock is introduced into the system, is outlined. This chapter also discusses the Variance Decomposition (VDC) that shows the breakdown of the origin of the variance of forecast error,

To isolate the volatility in oil prices, the Generalised Autoregressive Conditional Heteroskedasticity (GARCH) model is used and the details of this approach is provided in Chapter 3.

Chapter 4 reports the results for macroeconomic responses to oil price changes. This chapter focuses on the anticipated price changes and examines the reaction of industrial production, interest rates and real stock returns.

The results for the unanticipated oil price changes are deliberated in Chapter 5. The responses of the same macroeconomic variables are examined. This chapter also provides the empirical findings on volatility of oil price movements.

Finally, the conclusion and a summary of its empirical implications are presented in Chapter 6.