

# Chapter 1

## Oil Prices and Economic Growth in Major Emerging Economies: Evidence From Asymmetric Frequency Domain Causality Tests

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### **ABSTRACT**

*There is a strong correlation between energy prices and economic activity. The relationship particularly holds true for crude oil as changes in oil prices are associated with changes in production costs, and economic activity also generates significant demand for energy and crude oil. This chapter examines the relationship between economic activity and crude oil prices using causality tests in the frequency domain and taking into account the difference between positive and negative changes in both oil prices and economic activity as the relationship can be asymmetric. The authors present empirical results for major emerging economies including Brazil, Russia, India, China, South Africa, and Turkey. Empirical results indicate that for most countries there is bidirectional causality between crude oil prices and*

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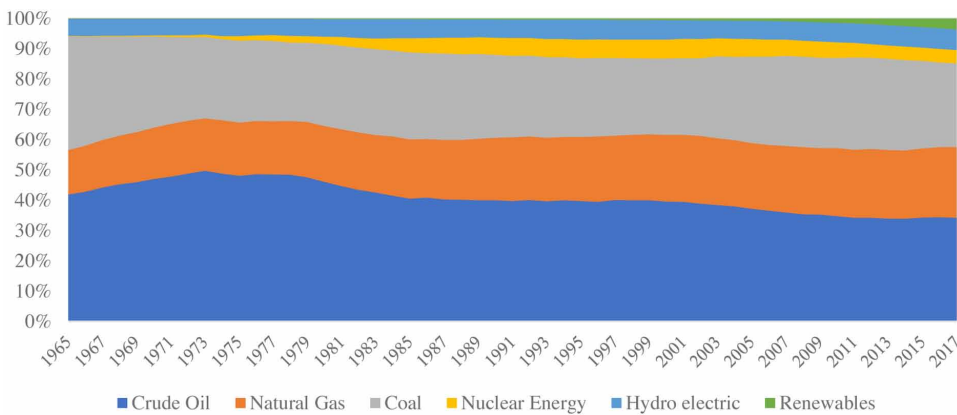
*economic activity whereas only negative oil price shocks seem to negatively affect economic activity.*

## **INTRODUCTION**

Energy sources such as crude oil, natural gas, and coal are important inputs for many sectors and have an important role in economic activity. Even though the use and production of energy sources varies among sectors, crude oil still occupies a central role in the global economy in comparison to other energy sources. Hence, oil prices affect several macroeconomic indicators (such as output, trade balance, inflation, stock markets, and exchange rates).

The share of primary energy sources in total energy consumption in Figure 1 shows crude oil is still an important energy source today. Crude oil is not only the highest primary energy source in the world, but the share of crude oil as the primary energy source increased from 34% to 49% between 1965 and 2017. However, it is evident that crude oil consumption started to decline in the new millennium. Coal is the second highest consumed energy source after oil while natural gas is third as shown in Figure 1.

*Figure 1. The share of primary energy resources in total energy consumption*  
*Source: BP Statistical Review of World Energy*



Crude oil use around the world is shown in Figure 2. It is evident that oil consumption has increased year after year, and while total oil consumption was 1,523 million tons in 1965, it reached 4,470 million tons in 2017. North America has the highest oil consumption in the new millennium, while Africa has the lowest

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