

Monetary Policy and Crude Oil: Prices, Production and Consumption by Basil Oberholzer, 304 pp. Edward Elgar Publishing (2017), US\$ 140.

Crude oil has played a major role in impacting growth and development outcomes of several countries in the twenty-first century. It, in fact, has emerged as the most important source of energy in the world and also acts as a benchmark for prices of other fuels like coal and natural gas. The movements in crude oil prices often influence inflation outcomes of countries, posing the challenge of “accommodate *versus* resist” for monetary policy.

Against this backdrop, this book delves into the forces driving the crude oil market and examines the nexus between monetary policy and crude oil prices with a focus on the United States (US) economy. The book is divided into three parts. Part I presents the facts and theories on monetary policy and crude oil; Part II takes us through some of the major empirical evidences; and, Part III offers a new economic policy proposition.

In the overview chapter, the author discusses the impact of US monetary policy on the crude oil market. To understand the role of monetary policy, one needs to first understand the role of money – whether it is neutral or not. If money is not neutral and it impacts both the supply and demand conditions in an economy, then the analysis of monetary policy’s impact on crude oil becomes essential. The author emphasises the dual character of crude oil – apart from having characteristics of a physical commodity or a conventional good, it also has the attributes of a financial asset, which arises due to trading of futures contracts based on crude oil. Monetary policy has the potential to affect both these aspects. Monetary policy can influence crude oil market in various ways. Speculation becomes an important factor influencing the impact of monetary policy on the oil market. An expansionary monetary policy may lead to speculation in the futures market, which in turn could lead to over-investment in the crude oil spot market, thereby disturbing the equilibrium in crude oil spot and futures markets. This may undermine, potentially, economic and financial stability. It may also alter oil supply and consumption patterns having implications for ecological sustainability. Here, the author proposes a rather unconventional policy proposition. Instead of aiming at eliminating any

harmful effects of financial markets on the real economy, he suggests ways to use financial market mechanisms to achieve better outcomes.

The author begins with a detailed theoretical analysis of crude oil market and the role of money in the first part of the book. The crude oil market is analysed with the help of existing literature and some stylised facts such as the total energy intensity of output, which declined from 1980 to 2000 but rose thereafter. The literature on crude oil market is focussed on three principal domains: crude oil as an exhaustible resource; existence and effectiveness of speculation in the oil market; and, the role of the Organisation of the Petroleum Exporting Countries (OPEC).

The author then discusses the role of money in terms of two perspectives of monetary theory: the one which considers money as an exogenous variable (neoclassical economic theory) and the second, which endogenises money, created *ex nihilo* in the process of credit granting. Neoclassical economists assume efficient market hypothesis to hold true and therefore rule out asset price bubbles. In contrast, the framework with endogenous money coupled with uncertainty allows financial markets to evolve independently from the real economy to some extent, such that speculation becomes an effective element of the financial system.

After analysing the role of money and monetary theory, the book discusses the dual nature of the oil market *i.e.*, spot and futures markets. The spot market is influenced by industrial production, consumers' income, geopolitical conflicts and wars, market structures and new oil discoveries. The futures market is more flexible and reacts faster to new information. Demand for futures can increase without any change in fundamentals – the spot market and the rest of the economy – due to lower liquidity preference. The variables that make the difference between the two markets are the interest rate, risk premium, convenience yield and carrying cost of the commodity. Monetary policy exerts quantity effects by influencing economic fundamentals and price effects through the futures market. Speculation is the mechanism through which monetary policy materialises in financial markets as monetary policy sets the interest rate which affects liquidity preference and investment perspectives. The author analyses the impact of monetary policy on both these markets and concludes that monetary policy has an effect on both production and consumption of oil.

The second part of the book presents empirical evidence on the US monetary policy and market structures using different methodologies. The empirical investigation of US monetary policy is based on data for the period 2000-2014, which covers not only the global financial crisis of 2008 but also the transition of US monetary policy from the use of conventional tools to unconventional ones in the wake of the crisis.

The author argues that there is no single market price in the global crude oil pricing system as every deal yields its own price, which means that the assumption of a single price is a simplification of reality. Nonetheless, the market is highly integrated on geographical and temporal dimensions. Furthermore, prices of different types of crude oil around the world are perfectly correlated and so are spot and futures prices of different maturities. Even natural gas and coal seem to be integrated with the global crude oil market, in the medium to long run.

The econometric analysis presented in the book is based on a stock-flow consistent (SFC) model of monetary policy and crude oil market in order to crystallise the main effects and principal variables. The SFC model contains 43 endogenous variables and is estimated using data for the period 1990-2014. The empirical estimates have simultaneity problems that are obvious in the context of fast evolving financial markets and slowly reacting fundamentals. The author argues that speculation is too complex a phenomenon to be represented by a single framework and that it is difficult to represent monetary policy by a variable which is not anticipated by the agents. The author also considers inventories as an approximation for speculative activity. This model lays the basis for econometric analysis. The results indicate that financial markets affect prices permanently and hence the quantity variable is also impacted. The results of the SFC model are empirically tested using a two stage procedure for the period 2000 till 2014. The first stage investigates the transmission of monetary policy from the interest rate to the oil price using SVAR, cointegration and Granger Causality tests. The second stage examines the impact that the oil price itself exerts on oil quantities through Granger Causality tests. The empirical analysis confirms the theoretical intuition that an expansionary monetary policy transmits ambiguously, if significantly, through fundamentals but significantly through financial markets.

The author identifies two problems with respect to impact of monetary policy on crude oil market: first, economic and financial instability; and second, a threat to the environment due to higher oil intensity. The answers to these problems are presented in the third part of the book. An expansionary monetary policy triggers speculation in the crude oil futures market, which raises the oil price. This improves profit prospects for oil producers. As a result, oil producers invest in their oil production capacity, producing more oil for the market. This rise in oil production leads to a decline in oil prices. Overinvestment in oil production capacities keeps oil prices low for a long time leading to higher oil consumption. Speculation in the futures market leads to price volatility, entailing ramifications for financial and economic stability. The author suggests futures market regulation and the use of US strategic petroleum reserves to ensure price stability.

On the ecological front, the author argues that prevailing instruments such as the carbon emission trading system and an energy tax are not sufficient to guarantee stability and sustainability. Therefore, the author proposes a new approach which aims to bring out the best of existing policy propositions while avoiding their drawbacks. The new approach promises to achieve economic and financial stability, as well as ecological sustainability, without creating new macroeconomic problems. It does not try to eliminate financial market disturbances. The author calls this new approach the 'oil price targeting system', where monetary policy and fiscal policy coordinate to make use of the futures market. Under this mechanism, an oil price target is set and achieved through interventions by central banks in the futures market. This is along the lines of using strategic petroleum reserves. Trading in futures contracts, instead of physical oil, allows more flexibility and better fine-tuning between the two policies. To prevent imbalances in the spot market, a tax is imposed on production. Once the targeted oil price is achieved, stability in the oil market is guaranteed and speculation is ruled out.

Such a policy framework can be used to increase oil prices step by step. This may help achieve the twin objectives of reducing oil consumption as well as ensuring economic and financial stability. Uncertainty with respect to oil prices will be eliminated. The insight that the futures and spot markets are integrated, given that spot and futures prices move closely together, allows the scope for using the futures market for economic policy.

The author also suggests that a lot more work is needed in order to better understand the issues and implement policy options suggested in the book. Future research needs to focus on understanding the impact of oil price targeting on overall inflation. There is also a need to understand the impact of change in oil prices, specifically if the change is persistent, on the composition of economic output. Another aspect requiring research is the impact of rising oil prices on income and wealth distribution in the economy.

The book provides some interesting empirical evidence on the oil market and the interconnections between oil market, economic stability and ecological stability. It analyses the role of the US monetary policy in the global crude oil market. As the SFC model is of a macroeconomic nature and describes a particular sector of a capitalist economy, the role of geopolitical strategies like those of the OPEC are not addressed appropriately. The effects of exchange rate movements are also not factored in adequately. These appear to be some of the areas on which the book could have devoted greater attention. Nevertheless, the book provides an interesting and innovative solution to the problem at hand. Implementing it, however, may be a challenging task given the difficult to assess lobbying by producer and consumer groups.

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