

# Essays on Effects of Commodity Price Shocks on the Global Economy

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## Abstract

This paper investigates effects of commodity price shocks on the global economy from three perspectives. First, we investigate effects of commodity price shocks on inflation with a monthly panel consisting of 120 countries. We show that the effects of commodity price shocks on inflation are transitory. While the effect on the level of consumer prices varies across countries, the transitory effects are fairly robust, suggesting that policymakers may not need to pay special attention to the recent fluctuations. Employing the smooth transition autoregressive models that use past inflation as the transition variable, we also explore the possibility that the effect of commodity price shocks is influenced by inflation regimes. In this specification, commodity price shocks may not have transitory effects when a country is less developed and its currency is pegged to the U.S. dollar. However, the effect remains transitory in developed countries with exchange rate flexibility.

Second, we examine how oil price shocks affect U.S. inflation. Employing GARCH-in-mean VAR, we demonstrate that positive oil price shocks substantially influence inflation, whereas the negative shocks do not. This finding implies that oil price shocks affect inflation asymmetrically. The model also shows that oil price uncertainty may amplify the inflationary effects of positive oil price shocks. Thus, oil price uncertainty may determine the asymmetric effects of oil price shocks on inflation.

Third, we explore effects of mineral-commodity price shocks on monetary policy with macroeconomic data from three mineral-producing countries (Australia, Canada, and New Zealand) and two non-mineral-resource countries (U.S. and U.K.). Employing structural VAR, we estimate the impulse response functions of the policy interest rates and the core consumer price index (CPI) inflation rates to mineral-commodity price shocks. We find that the central banks in both groups of the examined countries significantly respond to mineral-commodity price shocks. In responses to an unexpected 10 percent increase in mineral commodity prices, the central banks are estimated to increase their policy interest rates by approximately 0.8 percentage points. Moreover, the central banks seem to take anticipatory policy reactions to control core CPI variations triggered by these shocks. Thus, mineral commodity prices would act as important determinants of the monetary policies in both groups of the examined countries. These findings would be useful for analysing Taylor rules in their countries. However, effects of the increase in their policy interest rates on core CPI inflation cannot be identified for the examined countries.