Three Epochs of Oil

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Abstract

We test for changes in price behavior in the longest crude oil price series available (1861-2008). We find strong evidence for changes in persistence and in volatility of price across three well defined periods. We argue that historically, the real price of oil has tended to be highly persistent and volatile whenever rapid industrialization has coincided with uncertainty regarding access to supply. We present a modified commodity storage model that fully incorporates demand, and further can accommodate both transitory and permanent shocks. We show that the role of storage when demand is subject to persistent growth shocks is speculative, instead of its classic mitigating role. This result helps to account for the increased volatility of oil price we observe in these periods.