

Comparing the Risk Spillover from Oil and Gas to Investment Grade and High-yield Bonds through Optimal Copulas

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While a significant share of energy companies' funding comes in the form of bank loans, the recent trend reveals that energy firms have gradually shifted from bank-led financing to capital market-based financing. Deepened political and economic instability following the 2008 global financial crisis could cause such transformation. Although the global bond market is twice as big as the global stock market, investigating the effect of energy prices on the bond markets did not receive considerable attention in the literature. We compare and contrast the risk propagation from energy markets (oil and gas) to investment grade and high-yield bonds. The novelty lies in the comparison of risk spillover as the nature and dynamics of investment grade and high-yield bonds differ. While most of the previous work relate (theoretically and empirically) oil and stock markets, little is known about the relationship between oil and bond markets. Specifically, there is no prior evidence disaggregating the impact of oil price changes on investment grade and high-yield bonds. Employing the novel time-varying optimal copula approach, we find that the bond returns are more sensitive to risk shocks in the oil market compared to gas market. Additionally, we document market state specific asymmetric tail dependence between bond and energy pairs and that the association becomes robust during the oil-crunch period.

Our results have important implications for devising portfolio strategies, setting financial market stabilizing policy and developing overall energy landscape. An extreme downward and upward co-movement between the bond and energy markets indicates that the bond market is not immune to global energy shocks. A time-varying dependence structure also indicates that investors can rotate their investment in the bond market based on their forecasting of states of the energy market. Policymakers should be aware of the global oil price risk when designing bond market schemes. The nature of dependence between these two markets must be incorporated in deriving energy policy because of its potential impact on stability of the bond market. It is also worth mentioning that policymakers should take into account the asymmetric risk spillover between the markets in different conditions, which should improve the policy response to shocks in the markets.

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