Oil Prices and Personal Consumption Expenditures: Does the Source of the Shock Matter?

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Abstract

This paper studies the effect of structural shocks in the crude oil market on aggregate and disaggregated personal consumption expenditures (PCE). First, we estimate a nonlinear structural equation model that disentangles supply shocks from aggregate demand shocks and oil-specific demand shocks in the crude oil market, and compute impulse response functions by Monte Carlo integration. We find that aggregate PCE responds negatively to positive oil demand shocks, while adverse oil supply shocks are of limited effect. At the industry level, we find important heterogeneity in the magnitude, sign and timing of the PCE responses to oil price innovations caused by different origins. Moreover, we find that unlike other shocks in the crude oil market, oil specific-demand shocks drive households to switch towards vehicles with higher fuel efficiency. Our findings are robust to different nonlinear transformations for the real price of oil. Finally, we use a test of symmetry to evaluate whether PCE responds asymmetrically to positive and negative oil price innovations. We find no evidence against the null of symmetry using data mining robust critical values.

Keywords: Personal Consumption Expenditures, Oil demand shocks, Oil supply shocks

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