

Assessing the Time-Varying Impact of Supply Chain Pressures on U.S. Energy-Related Employment

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Abstract:

Finely disaggregated employment series for several occupations in the U.S. energy supply chain are collected, including both fossil fuel and non-fossil fuel related, from January 2000 to June 2005. Recent advances in testing for Granger-causality that allows for the impact to vary across the sample period are utilized to see how frequently global supply chain pressure has a causal impact upon employment in these data series. Global supply chain pressure is measured using the Global Supply Chain Pressure Index (GSCPI) developed by researchers at the New York Federal Reserve. While GSCPI is found to have a causal impact upon employment in at least some of the sample period for each of the employment series, there is considerable variation in the frequency of finding significant causality across the employment series. A full discussion is in the paper, but a few of the highlights are as follows. GSCPI has a causal impact upon fossil fuel electricity generation employment much more frequently than it does for non-fossil fuel electricity generation employment. Given the importance of battery storage for utility-scale wind and solar development, however, finding that GSCPI has a causal impact on battery production employment in over 80% of the sample period suggests that ongoing “Green Energy” development must be attentive to any potential supply chain disruptions. The fossil fuel supply chain exhibited similar exposure with GSCPI having a causal impact on employment in mining, oil, and gas machinery in more than 70% of the sample period.