AN EMPIRICAL ANALYSIS OF THE EFFECTS OF OIL PRICE SHOCKS ON SECTORAL EMPLOYMENT IN KERN COUNTY

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Overview

Kern County is one of the country's largest oil producing regions. It has the highest relative concentration of employment in the oil and gas industry in California. This paper examines the long- and short-run relationships between oil prices and employment in five sectors in Kern County using the Vector Error Correction Model (VECM). The dynamic effects of oil shocks on these sectors is then analyzed using generalized impulse response functions (GIRF) and variance decomposition analysis. The main results show that West Texas Intermediate (WTI) and employment in both the oil and gas and farm sectors move together in the long-run, but not in the short-run. Point estimates also suggest that there is no causality running from WTI to employment in the manufacturing, construction, and service sectors.

In what follows, some background on the literature is provided before investigating the relationship between oil prices and sectoral employment in Kern County. The dynamic effects of oil price shocks on various sectors are then examined. The fourth section presents the empirical results while the fifth concludes the study.

Methods

- Vector Error Correction Model (VECM).
- Generalized impulse response functions (GIRF)
- Variance error decomposition analysis

Results

- There is long run causality running from oil prices (WTI) to oil and gas employment.
- The Wald χ^2 test results indicated that there is no short run causality running from WTI to oil and gas employment.
- Farm employment will converge towards long run equilibrium at a very slow speed while there is no short run causality running from oil prices WTI to farm employment.
- Further tests found that there is no causality running from WTI to employment in the manufacturing, construction, and service sectors.

Conclusion

Oil prices (WTI) and employment in the oil and gas, and farm sectors, move together in the long run but not in the short run. They also suggest that there is no causality running from WTI to employment in the manufacturing, construction, and service sectors.

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