



Oil Shocks Have Limited Effect on Growth of G7 Countries

Embargo: 17.30 GMT; 18.30 CET; Monday 27 February 2006

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How do shortfalls in crude oil production caused by wars and other political events in the Middle East affect oil prices, economic growth and inflation in major industrialized countries? Lutz Kilian investigates this question in **CEPR Discussion Paper No. 5404 'The Effects of Exogenous Oil Supply Shocks on Output and Inflation: Evidence From the G7 Countries'**. He notes that public discussion of this question has been shaped by the economic experience of the 1970s and early 1980s. The public's collective memory of these experiences leaves little doubt that oil supply shocks are to blame for the economic malaise of the 1970s. This has led to the concern that history might repeat itself if a new oil supply shock were to occur.

Exogenous Oil Supply Shocks since 1970

Date	Political Event
October 1973	Yom-Kippur War/ Arab Oil Embargo
October 1978	Iranian Revolution
September 1980	Iran-Iraq War
August 1990	Persian Gulf War
December 2002	Civil Unrest in Venezuela
March 2003	Iraq War

"Exogenous" here means that the shock to crude oil production is driven by political forces in oil-producing countries that evolve independently of the state of the global economy.

It is not clear whether that public perception is correct, however. Lutz Kilian argues that, by any measure, a substantial component of the observed movements in the price of crude oil reflect shifts in demand for oil driven by macroeconomic conditions. Thus one cannot simply assume that major oil price increases are necessarily driven by events such as wars and political conflicts in the Middle East. Kilian proposes an alternative direct measure of exogenous oil production shortfalls based on plausible assumptions about how OPEC oil production would have evolved without political turmoil in the Middle East. Using this measure he has a fresh look at the historical experience of the G7 countries during previous oil supply shocks. His analysis produces the following findings:

- In the absence of the exogenous oil supply shocks that took place during 1973/74, 1978/79, 1980, 1990/91, and 2002/2003 the evolution of CPI inflation in the G7 countries would have been remarkably similar overall to its actual path. This evidence is consistent with the view that the high inflation of the 1970s was caused by domestic policies rather than external shocks.
- There is no evidence that the 1973/74 and 2002/03 oil supply shocks had a substantial impact on real growth in any G7 country. This finding is consistent with an important role for demand-led oil price increases during these episodes. In contrast, for some G7 countries, the 1978/79, 1980 and 1990/91 shocks contributed to lower real growth, although not as much as one might have conjectured.
- Kilian finds that there is a fair degree of similarity in the real GDP growth responses of G7 economies to exogenous oil supply shocks. An oil supply disruption can be expected to cause a temporary reduction in real GDP growth that is concentrated in the second year after the shock. While there is considerable uncertainty about the true magnitude of this effect, given the small number of historical oil supply shocks available for study, the data suggest that a 5 percent permanent reduction in oil supply tends to reduce real GDP growth by about two percentage points in the second year after the reduction. Oil supply shocks typically have little effect on real growth either before or after the second year.
- These estimates, however, ignore the fact that historically exogenous oil production shortfalls have been temporary; with negative oil supply shocks being followed by positive shocks. Such offsetting shocks would tend to lower the overall impact of the initial reduction.
- Consumer price inflation responses are more varied across G7 countries. The inflation response typically peaks after three to four quarters. The evidence suggests that exogenous oil supply disruptions by themselves do not generate sustained inflation or stagflation. Evidence of sustained inflation and stagflation in some G7 countries – such as Germany – therefore must reflect a favourable institutional environment.

Notes for editors:

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