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Online Appendix for

**Effects of Oil Supply News on the
Macroeconomy: A Proxy FAVAR Approach in
the Korean Economy**

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Appendix: Känzig's method (2021) for the construction of oil supply surprises

Känzig (2021) use WTI crude oil futures instead of Brent crude oil futures to construct oil supply surprises. This is because WTI crude futures were the first traded crude oil contract, and thus have the longest data. It is also the most liquid and largest market.

Känzig (2021) calculates oil supply surprise series using the following equation.

$$Surprise_{t,d}^h = F_{t,d}^h - F_{t,d-1}^h,$$

where d and t are the day and the month of the OPEC announcement, respectively. $F_{t,d}^h$ denotes the log settlement price of the h -months ahead oil futures contract in month t and day d .

In addition, according to standard asset pricing,

$$F_{t,d}^h = E_{t,d}[P_{t+h}] - RP_{t,d}^h.$$

where $E_{t,d}[P_{t+h}]$ denotes the expected oil price conditional on the information on day d . $RP_{t,d}^h$ is a risk premium.

It is assumed that the risk premium does not change within the daily window around the OPEC announcement ($RP_{t,d}^h = RP_{t,d-1}^h$). Then, we can obtain

$$Surprise_{t,d}^h = E_{t,d}[P_{t+h}] - E_{t,d-1}[P_{t+h}].$$

Therefore, the surprises can be interpreted as a revision in oil price expectations.

In the monetary policy literature, it is common to use a 30-minute window. Känzig (2021), however, uses a daily window for the following reasons. In the case of the OPEC conference, no official announcement time is available. Unlike central banks, information about the OPEC decision is often leaked before the announcement.

The choice of maturity h is also important in calculating the surprises. Känzig (2021) uses various maturities from one month to one year and calculates the surprises for each maturity. Then, he uses the first principle component of these surprises.

Finally, for monthly surprises, Känzig (2021) aggregates the daily surprises. In the case of a month with no announcement, the surprise in that month is zero.