Discussion: Caldera et al., ‘The Economic Effects of Trade Policy Uncertainty’

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First...

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Nice Paper

• Across 3 measures of trade policy uncertainty (TPU): TPU increased in 2018 to levels not seen since the 1970s.

• Quantifies both empirically and theoretically the macroeconomic impact of higher TPU.

• Theoretically 2 potential channels are considered, conditional on nominal rigidities:

  • Higher expected tariffs $\rightarrow$ higher expected import costs $\rightarrow$ more expensive investment and consumption $\rightarrow$ lower investment and consumption.

  • Higher uncertainty future tariffs $\rightarrow$ precautionary markups and savings increase $\rightarrow$ lower investment and consumption.
• 2 Empirical approaches.
  
  • Micro firm level data $\rightarrow$ export-oriented firms cut investment spending relatively more when TPU $\uparrow$.
  
  • Structural VAR on macro data $\rightarrow$ investment spending contract similarly as in theoretical analysis when TPU $\uparrow$.
  
  I will focus on the robustness of the VAR-based empirical evidence.
**VAR Specification**

\[ Y_t = D_0 + \sum_{i=1}^{p} D_i Y_{t-i} + \varepsilon_t; \quad \varepsilon_t \sim iid (0, \Omega^\varepsilon), \]

with \( p = 2 \) and

\[ Y_t = \begin{pmatrix} TPU_t \\ INVpc_t \\ Tariffs_t \\ GDPpc_t \\ MacroUnc_t \\ RDOL_t \\ CapTax_t \end{pmatrix} \]

for a quarterly 1960 - 2019 sample.
Outline

Consumption

Identification

Structural Break?

Uncertainty about TPU
Why Exclude Consumption?

Theoretically, Caldara et al. show consumption should slow down substantially when tariffs and tariff uncertainty go up.

\[ Y_t = \begin{pmatrix} TPU_t \\ RINVpc_t \\ RPCEpc_t \\ Tariffs_t \\ GDPpc_t \\ MacroUnc_t \\ RDOL_t \\ ConsTax_t \\ CapTax_t \end{pmatrix} \]

with \( \text{ConsTax}_t \) is Fernandez-Villaverde et al. (2015, AER) average tax rate on consumption (incl. tariffs).
Consumption Identification Structural Break? Uncertainty about TPU
The TPU shock is identified by means of a lower triangular Cholesky decomposition $SS' = \Omega^\varepsilon$

$$S^{-1}(I - \sum_{i=1}^{p} D_i)Y_t = S^{-1}\varepsilon_t = \eta.$$ 

Implies a specific recursive ordering for the Caldera et al. VAR:

TPU responds with lag to other shocks. | Other series respond immediately to TPU shock | $Y_t = \begin{pmatrix} TPU_t \\ INVpc_t \\ Tariffs_t \\ GDPpc_t \\ MacroUnc_t \\ RDOL_t \\ CapTax_t \end{pmatrix}$
Alternatively, consider TPU as a “faster moving” variable:

\[
Y_t = \begin{pmatrix}
\text{INVpc}_t \\
\text{Tariffs}_t \\
\text{GDPpc}_t \\
\text{TPU}_t \\
\text{MacroUnc}_t \\
\text{RDOL}_t \\
\text{CapTax}_t
\end{pmatrix}
\]

- Seems realistic especially for daily news paper articles-based TPU.
- Typical way to incorporate nominal rigidities in recursive macro VAR models.
- Also used in companion paper Caldera et al. (2019, FEDS Notes).
The macroeconomic VAR model is estimated on a 1960-2019 quarterly sample assuming that this a structurally stable sample.

BUT: the 1985-2007 Great Moderation? Multitude of studies point to significantly lower macroeconomic volatility since the mid-1980s.

For example, Sensier and Van Dijk (2004, *REStat*) find that for 80% of 214 U.S. macroeconomic time series conditional volatility exhibit downward breaks between 1985 and 1987.

Investment growth (Great Moderation in grey)
Recap

Some caveats to quarterly 1960-2019 VAR-based evidence on TPU shock impact on U.S. economic activity:

• Consumption does not seem to behave as in the Caldera et al. theoretical analysis.

• Different TPU shock identifications (“slow” vs. “fast” moving) seem to affect the impact of TPU shocks.

• It appears that structural breaks in the data impact the VAR analysis.
Recent period
Analyse the macroeconomic impact of TPU over monthly 1985-2019 sample. VAR analysis in companion paper Caldera et al. (2019, FEDS Notes):

\[ Y_t = \begin{pmatrix} \text{USIPMFG}_t \\ \text{AFEIP}_t \\ \text{EMEIP}_t \\ \text{WORLDIMP}_t \\ \text{Tariffs}_t \\ \text{TPU}_t \\ \text{S&P500}_t \\ \text{RDOL}_t \\ \text{CORPBRP}_t \end{pmatrix} \]

where \( \text{CORPBRP}_t \) is the Gilchrist and Zakrajsek (2012, AER) U.S. corporate bond risk premium.

\[ Y_t = \begin{bmatrix} \text{USIPMFG}_t \\ \text{AFEIP}_t \\ \text{EMEIP}_t \\ \text{RPCE}_t \\ \text{WORLDIMP}_t \\ \text{Tariffs}_t \\ \text{MfgConf}_t \\ \text{TPU}_t \\ \text{S&P500}_t \\ \text{RDOL}_t \\ \text{CORPBRP}_t \end{bmatrix} \]

where \( \text{MfgConf}_t \) is the ISM Manufacturing survey.

During 2017-2019 U.S. consumption remained strong in contrast to the theoretical implications of TPU shocks in Caldera *et al.*

**Alternative:** Autonomous decline in business sentiment drives a slowdown in business activity (firms’ ‘animal spirits’), with no material impact on consumption.
Response of Real Consumption to Business Confidence Shock

- Real Consumption
- 68% Interval

Consumption Identification Structural Break? Uncertainty about TPU
Response of TPU to Business Confidence Shock
Recent developments

- The 2017-2019 developments could be consistent with either TPU shocks or negative business sentiment shocks.

- Recent subsiding trade tensions might not result in rebounding manufacturing output and investment spending, if business sentiment does not recover.