# Discussion of "Can Supply Shocks Be Inflationary with a Flat Phillips Curve?" by J.-P. L'Huillier and G. Phelan

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Disclaimer: The views expressed in this presentation are my own and do not necessarily represent those of the SNB

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# Can supply shocks be inflationary with a flat Phillips curve?

- Two empirical facts (with relevance for current events):
  - Phillips curve is very flat
  - Supply shocks are inflationary
- Problem: difficulty to explain these empirical facts simultaneously within standard New Keynesian model

# Contribution of the paper

- LH-P propose a microfoundation of model with shock-dependent price stickiness
  - Strategic firm-customer interaction in a model with asymmetric information (firms are better informed than some of the customers)
    - Prices are sticky with respect to demand shocks but flexible with respect to supply shocks $\rightarrow$ shock dependent price stickiness
    - Intuition: firms can credibly justify a price increase due to a rise in costs, whereas it is harder to do so when demand increases
    - Microfoundation consistent with the survey literature, arguing that firm-customer relationship is what limits price adjustment (Blinder et al. (1998), Fabiani et al. (2005), Zurlinden (2007) and Seiler (2022))

# Contribution of the paper (cont.)

- Monetary policy implication: price level fluctuations due to supply-side shifts are optimal and should not be actively stabilised.
- The paper presents estimated responses of US industrial production and the US CPI to a monetary shock and a cost shock
  - Shocks are identified using external instruments: Gertler and Karadi (2015) for monetary shock and Känzig (2021) for cost shock
  - Monetary and cost shocks are scaled to have the same effect on output after 24 months
  - Results are consistent with shock-dependent price stickiness

# My take on the paper

- Very very nice paper!
- Timely and important topic
- Elegant microfoundation for shock-dependent price stickiness
- Opens up plenty of opportunities for future work

My comments:

(1) Does micro data support shock-dependent price stickiness?

(2) The LH-P model as an explanation of the recent inflation surge

(3) Follow up work

# Does micro data support shock-dependent price stickiness?

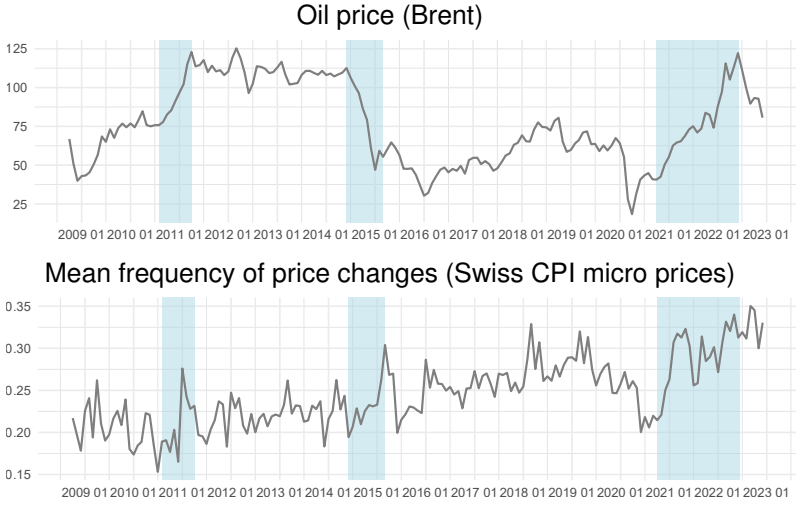
## Shock-dependent price stickiness and the frequency of price changes

- The average frequency of price changes is a natural summary measure of degree of price stickiness
- Frequency of price changes is calculated as the ratio of the sum of the observed price changes to the sum of the potential price changes
- LH-P model suggests that price adjustment frequency increases after a supply shock

# Does micro data support shock-dependent price stickiness? (cont.)

## Major oil price changes are followed by increase in price adjustment frequency



# Does micro data support shock-dependent price stickiness? (cont.)

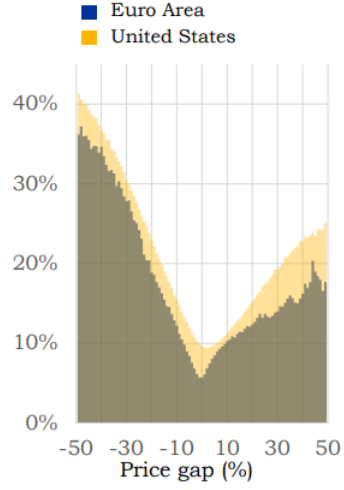
## State-dependent pricing as an alternative explanation

- State-dependent pricing is another model that predicts adjustment frequency to increase after oil supply shock
- Intuition for increase in adjustment frequency under state-dependent pricing:
  - Existence of some kind of menu costs/price adjustment costs
  - Firm's price response to shock depends on size of gap between current price and optimal reset price
  - Price adjustment probability is higher for large shocks: "Large shocks travel fast"(Cavallo et al, 2023)
- Mechanism of state-dependent pricing is the same for supply and demand shocks

# Does micro data support shock-dependent price stickiness? (cont.)

## Probability of price adjustment increases with price gap (Karadi et al, 2023)



# Does micro data support shock-dependent price stickiness? (cont.)

## How does the chart from Karadi et al. (2023) fit with shock-dependent price stickiness?

- We have seen that the probability of price adjustments rises with the size of the (positive or negative) price gaps. This result is consistent with state-dependent pricing.
- What about shock-dependent pricing?
  - Shock-dependent pricing is consistent with the data in the chart if one can show that the large price gaps are associated with supply shocks.
  - Difficult to do!

# Does micro data support shock-dependent price stickiness? (cont.)

## Alternative approach to investigate relevance of shock-dependent price stickiness

- Under shock-dependent price stickiness the frequencies of price changes should vary with type of shock!
- Evaluate response of frequency of price changes (and other price-setting characteristics)
- Empirical analysis at the item level; the role of heterogeneity

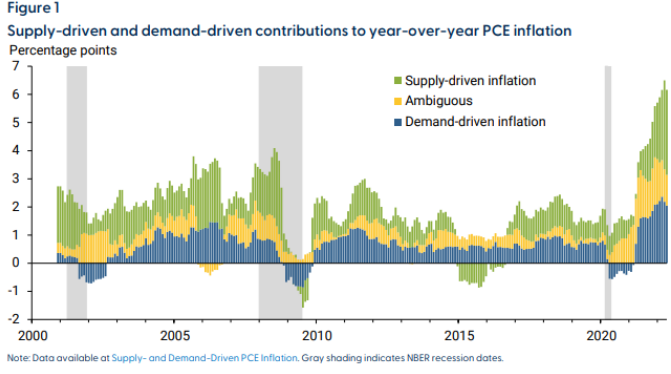
# The LH-P model as an explanation of the recent inflation surge

- It is hardly avoidable that many will read the paper against the backdrop of the recent surge in inflation
- The model does predict the rise in inflation caused by the supply shocks associated with the Covid-19 pandemic
- However, various aspects of the inflation surge appear to contradict the model:
  - Inflation turned out to be quite persistent
  - Medium-term inflation expectations have risen
  - Demand shocks also seem to have played a role
- Limitations of a very small and stylized model

# The LH-P model as an explanation of the recent inflation surge (cont.)

## Supply- and demand-driven factors contribute to US PCE inflation (Shapiro, 2022)



# The LH-P model as an explanation of the recent inflation surge (cont.)

## Monetary policy

- The model suggests that monetary policy should not actively stabilize inflation driven by cost shocks. However, central banks have raised interest rates since 2022, reflecting various concerns
  - Risk that inflation expectations could become unanchored
  - Evidence that inflation is fueled to some extent by strong demand
  - Concern that Phillips curve is not reliably flat (non-linearities, tight labor market in the US, see e.g. Eggertsson & Benigno, 2023)
- Model with shock-dependent price stickiness may be useful in the debate on how extensively monetary policy should 'look through' supply shocks.

Comment 3

# Follow up work

- Dynamic general equilibrium version of the model with shock-dependent price stickiness
  - Insight about characteristics of Phillips curve in terms of output gap/marginal costs
  - Insight about factors shaping time-varying persistence of the price level and of the rate of inflation:
    - Type of shocks
    - Persistence of shocks
    - Level of trend inflation
    - etc.

# Concluding remarks

## Wrapping up

- Creative and thought-provoking paper!
  - Elegant microfoundation of shock-dependent price stickiness
  - Implications of the model are consistent with flat Phillips curve and supply-side driven inflation
- Leaves open many questions for follow-up work
  - Introduction of additional features which are important for understanding inflation and the business cycle
  - Empirical analysis of shock-dependent price stickiness