

# Discussion of 'Inflation and Welfare in Models with Trading Frictions'

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# 1 What this paper is about

- Contributes to the welfare cost of inflation literature.
- Periodically centralized and decentralized markets.
- Quantitative-theoretic assessment of welfare cost (!)
- A “pure money demand” approach: Lucas (2000).
- Do the microfoundations of money demand matter for this calculation?

## 2 Alternative mechanisms for price formation

- Bilateral bargaining yielding search equilibrium.
- Walrasian price-taking yielding competitive equilibrium.
- Price posting with directed search implying competitive search equilibrium. Moen 97 JPE.
- Puzzlingly, competitive search equilibrium turns out to be more comparable to Walrasian analyses than what is here called competitive equilibrium.

### 3 Effects of inflation

- Changes extensive margin (frequency of trade).
- Changes intensive margin (quantity exchanged per trade).

## 4 The welfare cost of 10% to 0%

- Competitive search equilibrium,  $\approx 1\%$ , no holdup problem. Friedman rule optimal.
- Search equilibrium,  $\approx 4\%$ , holdup problem (terms of trade bargained ex post). Friedman rule not optimal.
- Competitive equilibrium,  $\approx 2\%$ , no holdup problem. Friedman rule not optimal. Quite sensitive to parameter choice.
- Comparison: Cooley-Hansen AER 89, Table 2, quarterly CIA, about 4/10 of one percent, comparing to F.R.

## 5 What to make of it

- Lucas (2000) approximation is valid if mechanism is posted pricing with directed search.
- “Pure money demand” welfare cost of inflation could be much higher than you think, if you take microfoundations of money seriously.
- Inflation might increase output without a Tobin effect. There is no capital here.
- Other “large welfare cost” papers turn to other issues: endogenous growth, or unindexed tax systems.

## 6 Key elements

- Agents can choose to acquire the home production technology or the intermediate goods production technology.
- The measure of agents choosing each technology is critically important.
- There is an aggregate matching technology which specifies how agents meet.
- The calibration is based on the money demand dictated by the model.

## 7 The day/night fiction

- Can we dispense with this?
- Seems to interact importantly with the assumption of linear disutility of day labor.
- We need the degenerate distribution of money holdings by type.
- Can money coexist with a durable asset like capital?

## 8 Choice of technology

- This paper follows others in endogenizing the number of buyers and sellers in the decentralized market.
- “Choice of technology” assumption.
- A great deal hinges on the relative weight of buyers versus sellers in this market. One of the key endogenous variables is  $n$ .
- This is interesting and important in the model, but is also the least interpretable portion of the theory.

## 9 Matching technology

- The authors employ a matching technology commonly used in previous literature.
- Where does this matching technology come from and why is it reasonable?
- In the calibration,  $\alpha(n) = n$ , based on tractability and previous use. But the authors need a quantitative appeal here.
- How do results depend on alternative matching technologies?

## 10 Nature of equilibrium

- Models like this are well known to produce multiple equilibria.
- Not much is said here about existence and uniqueness of equilibrium.
- This makes the quantitative findings more difficult to interpret.

# 11 Quantitative experiments

- The money demand quantification is very nice.
- Puzzlingly, it does not seem to matter where the bargaining power lies for the search equilibrium results.
- Consider additional checking on the effects of period length, which is naturally short in this theory, but long in the calibration.
- Why are the results under competitive equilibrium so sensitive, but not for the other two mechanisms?

## 12 Points to ponder

- This paper challenges the widespread perception that there are clear limits to the “pure money demand” component of the welfare cost of inflation.
- It also challenges established economic theories which assume that the microfoundations of money issue is not quantitatively important.