

# “Competition, Markups and Inflation: Evidence from Australian Firm-Level Data”

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## Discussant remarks by Petr Sedláček (UNSW)

First of all, let me thank the organizers for giving me a chance to discuss this paper. I very much enjoyed thinking about this timely topic. Let me begin my comments by providing a little context.

### Motivation

It comes as no surprise to the audience at this workshop when I say that inflation around the Globe has seen a strong increase in recent years. However, the exact sources of this increase in prices remains debated. One of the notions that has gained traction recently is of so called “greed-flation.” This refers to the idea that firms are somehow taking advantage of the current situation and increasing prices (markups) more than one-for-one with costs, allowing them to enjoy higher profits.

In the local context, the Australia Institute has been particularly adamant at pushing this narrative. Therefore, while greed-flation has been discussed in many countries, it perhaps holds a more special place in the Australian public debate.

It is precisely in this context that the current paper contributes. Monique, Chris and Jonathan aim to analyze how much of the recent inflation is due to market power. In doing so, they combine an empirical analysis (at various levels of aggregation, including using firm-level data) with structural modelling. The latter is particularly important because it allows one to gauge the underlying causes of the inflation rise, as opposed to using only national accounting identities.

In what follows, I will focus my comments predominantly on the structural model and how it maps to the data.

### Model and the cross-section of firms

Let me begin my first point with a brief review of the main model mechanism. One of the key features of the framework is the so called Kimball aggregator (or Kimball demand). This demand structure implies that the elasticity of demand (and therefore firms’ markups) varies with firm size. More precisely, the elasticity of demand varies with firms’ output shares. In turn, this means that the pass-through of costs into prices also varies with firm size. In particular, larger firms face lower elasticities of demand for their products and, therefore, can “afford” to charge higher markups and pass-through more of their cost changes onto customers through higher prices.

The beauty of the model considered by the authors is that it allows them to derive analytically tractable expressions for inflation dynamics. These show precisely how changes in inflation depend on (the distribution of) firm-level pass-through coefficients.

#### *Estimating key model parameters*

Based on previous work (see Edmond, Midrigan, Xu, 2023), the authors can show that (a transformation of markups) is directly related to firms’ sales shares:

$$f(\mu_i) = a + \frac{\epsilon}{\sigma} \ln(\omega_i), \quad (1)$$

where the subscript  $i$  indicates individual firms,  $\mu$  are markups (and  $f(\mu)$  is their monotonic transformation),  $\omega$  are firms' sales shares and  $\epsilon/\bar{\sigma}$  is the so called "super-elasticity". The latter captures the speed at which the elasticity of demand changes as firms grow. For the purpose at hand, the super elasticity is the key object of interest. With it, the authors can impute the pass-through coefficient and, in turn, understand inflation dynamics.

And this is precisely what the authors do. Using the above relationship, and Australian firm-level data, they calibrate their model to match the cross-sectional features of the firm distribution. Then, they use the model to quantify the extent to which inflation changes can be driven by market power (consistent with that observed in the data).

### *Model performance*

My first comment is only about documenting how the calibrated model performs over the business cycle, given that the latter plays a key role. While the model replicates important features of the cross-sectional distribution, it is not immediately clear how it does in replicating moments at the business cycle frequency.

Encouragingly, the impulse responses presented in the paper suggest that the model-predicted markup dynamics may indeed be very reasonable. In particular, it seems that the volatility of markups is roughly of the same magnitude as that of inflation. Acknowledging that the depicted impulse responses are conditional on the particular shocks, a relative volatility of markups and inflation of (roughly) one is in fact consistent with evidence from the U.S. economy (see e.g. Nekarda and Ramey, 2020).

That said, it would be interesting to document business cycle moments implied by the model more systematically – especially for markups and profits (which play a crucial role in the greed-flation narrative). In a similar tone, I would suggest providing some basic statistics describing the fit of the key regression equation (1). Are the estimates of the super-elasticity precise and stable over the business cycle?

### **A weaker version of greed-flation?**

My second comment focuses on the narrative of greed-flation itself. In its "strong" version, firms would have to increase prices (markups) more than one for one with costs in order for profits to rise as well. The authors do not find support for this version of the narrative – neither at the industry-level, firm-level, nor using the calibrated structural model. In fact, after a careful sensitivity analysis, the authors conclude that even when using the extreme values of estimated pass-through seen in the cross-section of Australian firms, market power is unlikely to be a strong propagator of inflationary shocks.

### *Focusing on "just" the price-setting behavior of firms*

However, I wonder whether the authors could consider a somewhat weaker version of the narrative. In particular, to what extent are inflation dynamics affected by the "price-setting behavior of firms" in general. This question is in fact something that the RBA itself is contemplating as can be seen from e.g. Philip Lowe's speech from June 6, 2023: "The Board ... will continue to pay close attention to both the evolution of labour costs and the price-setting behaviour of firms".

This direction of the analysis would allow the authors to abandon the hunt for more than one-for-one pass-through and increasing firms' profits. Instead, it would lead them towards questions related to the cyclical patterns of price flexibility (see e.g. Vavra, 2014; Berger and Vavra, 2018) or other reasons

for markup endogeneity (see e.g. Foster et al., 2016; Akcigit and Ates, 2023) and how these patterns may influence inflation dynamics in the current environment.

The authors could also use their current empirical framework to analyze this question. In particular, their industry analysis could be conducted in the same way as it has been done currently, but instead of focusing on medium- to long-run changes, the authors could focus on business cycle frequencies (and ignore profits). Similarly, the authors could estimate super-elasticities in periods with high(er) and low(er) inflation and see how stable it is. If there is evidence for changes in the super-elasticity over time, these could serve as a base for a “back-of-the-envelope” calculation of the quantitative impact such changes could have on inflation.

## **Conclusion**

To conclude, I would like to commend the timeliness of this research question and the state-of-the-art techniques used to address it. I believe that this is a very interesting and important contribution to the literature.

## **References**

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