

Kryvtsov and Vincent: On the Importance of Sales for Aggregate Price Flexibility

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Paris, 17-18th December 2015

Discussant: Huw Dixon (Cardiff Business School).

Oleksiy and Nicolas 2015:

More generally, the prevalent view in macroeconomics has been that retail price discounts have little to do with aggregate phenomena and should be ignored by macroeconomists. In this paper, we challenge this view.

Patrick Kehoe 2004: Challenges for sticky price enthusiasts

*“Observed price stickiness is short. On the empirical side Bils and Klenow (2003) and Klenow and Kryvtsov (2003) have dug up some interesting BLS data on individual goods price that shows that a key feature of the data is *The average time between price changes is relatively short, about 4 months...**

Patrick Kehoe 2015: *Economists have interpreted the evidence that prices change every four months as implying that sticky prices cannot be important for monetary transmission., we predict that the stickiness of the aggregate price level matches that in a standard Calvo model or a standard menu cost model in which micro- level prices change about once a year. In this sense, **prices are sticky after all** 😊*

“filter price data”.

- **Remove** sales/substitutions (KK, NS).
- **Remove** temporary price changes (N&S filter A, B etc)
- Reference prices (take modal price): **replace** temporary prices with modal price (Eichenbaum et al 2011, Kehoe and Midrigan 2015)

Get Long price spells! 12 months +....

ME: the distribution of price spells has little to do with Nominal rigidity. Cross-section captures distribution of spells across sellers “firms” (Distribution across firms) – Dixon and Le Bihan (2012). Need this to calibrate Generalized Taylor model.

- Weights price spells by duration. Keep all spells, but short ones less important.
UK: mean spell 5 months, mean DAF 13.5 months.

Oleksiy and Nicolas 2015: *Sales provide important information.*

- Sales: both ONS “Sales Flag” and various filters (V shapes etc).
- strongly *countercyclical*: the *fraction* of sales moves very closely with the *unemployment* rate, rising as the economy is slowing down.
- the *average duration* of sales spells remained very stable around 1.6 months over our sample period, with *no discernible cyclical*ity or trend.
- the average size of sales goes from about 21% in 1997 to 26% by the end of 2012; *there is no noticeable cyclical*ity for this margin of adjustment by any definition of sales
- Robust at disaggregated levels.

Kryvtsov and Vincent model:

monetary contraction, nominal rigidity - increase in retail markup.

High profit margins – increase market share

How: increase in the fraction of brands on sale.

Model.

- Lots of (Continuum?) of locations $l \in [0,1]$
- Continuum of monopolistic products $j \in [0,1]$ on each location.
- Each retailer j produces a continuum of “*perfectly substitutable brands*”.
- Retailer sets two prices: high and Low.
- Retailer j on location l sets a proportion $\gamma(j,l)$ at low price $P^L(j,l)$ and $1-\gamma(j,l)$ at high price $P^H(j,l)$
- Distribution of prices: two for each variety at a retailer location (j,l) .

Comment: Continuums – law of large numbers, deterministic.

Each “brand” has two prices. Model of Sales or price dispersion?

Households:

- Continuum of households $h \in [0,1]$ on each location.
- Within each household, a continuum of members, each purchases one product variety.
- Decides what proportion of its members will be workers (shop randomly SR) and bargain hunters (BH). Bargain hunters more likely to find low price ($f > I$) at a cost of less work done.
- Search cost $G(z)$ if z less than z^* , BH; if z bigger SR. Given distribution G , this determines proportion of BH $\alpha_t(j)$.
- Consumption Plan: Knows $P^L(j,l)$ and $P^H(j,l)$. Household member buys $c^L(j)$ if he/she finds low (sale) price and $c^H(j)$ if high (regular) price.

- Regular/high prices change once every 12 months ($T = 12$), Low/Sales prices every period. (Cross section)

Calibration: 5% of sales.

Monetary Policy and Price Flexibility.

Compare “Taylor economy” (no sales, all regular) with two price economy.

Prices respond more: monetary contraction means more sales, more bargain hunting. Greater share of consumption is at the lower price.

Countercyclical markups. Contraction increases markup (Taylor), increases incentives for Sales to capture market share.

Output responds less.

Mismeasurement of prices: statistical agencies do not capture variation in proportion of purchase in sales.

Conclusions:

- Focus on regular prices may be misleading, missing effects of sales.
- Need for focus on price-discrimination over the cycle.

Comments.

- Great Paper. Sales and temporary prices are important. The “Kehoe” idea misplaced. Can have lots of nominal rigidity with short price spells: it’s the cross section that matters.
- Minor technical: energy removed from local collection in 2007: did you retro remove the items (Dixon, Luintel and Tian)?
- Price dispersion: we can measure this directly with and without sales. Is this cyclical? DLT: negative correlation with current quarter output growth. But, excludes sales.

- The model. All firms set two prices all of the time: variety j has high and low price. At “Brand” level, one price: but all brands of variety j are perfect substitutes. We observe one price per outlet in data and trajectories of prices for same outlet. Hard to see the model as one of “sales”.
- Firms are Stackelberg leaders. Their choice of prices and proportion of low prices influences households choices. Is this reasonable?
 - In model, household makes the choice $\alpha_t(j)$ for each j , along with consumption plans (how much to buy at high and low prices). A lot of planning!
 - The model rests on

$$\frac{\partial \alpha_t^B(j)}{\partial \ln P_t^H(j)} \neq 0$$

If α_t^B depended on distribution of prices across all $j \in [0,1]$ then the prices set by variety j would not matter.

- Unemployment? Clear relationship. But unemployment is itself a problematic variable. Exactly what does it mean? Most theoretical pricing models depend on output or employment. In this model, all unemployment is “voluntary”: households supply all the labour they want. Figure 11 looks at output, not unemployment.
- Lots of things in the paper, raises lots of interesting issues: wish I had more time!