

Vasilev, Aleksandar

**Research Report**

**"A Framework for Identifying the sources of Local currency Price stability with an empirical application" (2007): A Research Report**

*Suggested Citation:* Vasilev, Aleksandar (2010) : "A Framework for Identifying the sources of Local currency Price stability with an empirical application" (2007): A Research Report, ZBW - Deutsche Zentralbibliothek für Wirtschaftswissenschaften, Leibniz-Informationszentrum Wirtschaft, Kiel und Hamburg

This Version is available at:

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## **“A Framework for Identifying the sources of Local currency Price stability with an empirical application” (2007): A Research Report**

**Aleksandar Vasilev**

This working paper also focuses on price rigidities in international context and frequency of price adjustments in response to ER changes. It is an empirical fact that local currency prices of traded goods stay unchanged in the face of ER change. The research question of this paper is the microeconomics of cross-border transmission process of ER changes to prices and price inertia due to the incomplete pass-through.

One of the sources for nominal rigidities in the paper are the strategic interactions in different stages of the distribution channel - manufacturers, wholesalers, retailers and their optimization problems. Consumers pay a price which contains a double margin over the marginal cost of production. In addition, as consumer income rises, buyers become less price sensitive, since individual consumption of beer is fairly stable. Moreover, MC itself has both a traded and non-traded component. Markup adjustments are usually made instead of changing prices, reflecting some local non-traded cost components such as services and local wages, which also tend to be rigid because of some fixed contracts. Those non-tradables make a big part of the story.

Firms are profit-maximizing with some market power. Distinction is made between local and foreign (importing firm) supplier because foreign ones are more exposed to ER shocks. Importers' costs are connected to the ER, which contains both traded and non-traded component. Thus prices may not change because of the latter. The authors introduce deviation of firms from their FOC maximization rule due to nominal rigidities. A single term, assumed to be constant over time, captures all possible factors that make firms keep prices constant - menu costs such as time and effort in finding out new optimal price, difficult in practice and time-consuming for managers that usually set prices by trial and error. Thus price rigidities are explicitly put in the model. In the preceding literature those were unobservable due to aggregation or the low frequency of the data.

There are cost of adjusting and losses in profits from non-adjusting. Once firm incurs the menu cost, it will adjust by the maximum amount, the gap will be 100% closed. The authors are not interested in the adjustment costs per se, but on the effect of the nominal rigidities on ER pass-through. Indeed, small rigidities induce significant price inertia. Moreover, the authors use static optimization instead of dynamic approach, but that is fine because as long as the driving force is a RW, it is legitimate to approximate dynamic model with adjustment costs in a static way. A scope for further research is to go for the gap approach. Even though technically sophisticated, it will provides an explicit treatment of the consumer side.

In addition, detailed information on manufacturing cost is provided, such as product characteristic, advertising, distribution of consumer demographics, cost of communicating the price change to consumers. There is highly disaggregate, weekly, store-level data for beer market on both wholesale and retail prices. Indeed, those remain fixed for several weeks during the 4 year observation period. There is a recorded responses at each step of the distribution channel. Beer belongs to the category of packaged goods imported for consumption. The product in the paper is a 6-pack serving, which may or may not be homogenous in consumers' eyes. A substitute is the beer sold by competition in this zone. Each zone constitutes a separate segment of the market and each is controlled for age profile and beer observables.

Another good news is that the data provided is of higher frequency - (bi)weekly data on highly disaggregate, well-defined products. And we can clearly see periods when price is fixed and then there is a discrete jump. Promotions, however, are not related to ER movements and that is a problem with the data. An issue is that although beer consumed in US is mostly imported, and thus its price is affected by the ER fluctuation, the share of the beer market is very small. Thus, beer prices reflect what is happening in the US, where there is already established oligopolistic structure, and not the movements of the ER.

No further manufacture is needed before beer reaches consumers, which is similar to processed meat products in Ratfai (2006). Thus production costs are easily identifiable. In addition, beer shipments is done by independent wholesale distributors. The authors build their model on the assumption that distributors are vertically integrated with brewers. That is plausible because brewers cover significant proportion of distributors MC and control their pricing decisions through "resale price maintenance."

In the model, wholesalers price is determined by FOC, if wholesalers adjust, and by observables like cost, demand, competition, reaction of retailers if they do not. Important inputs for beer production are the cost of electricity and the cost of barley in the country of origin of each beer brand in the sample. If any of those change, wholesalers will incorporate that into the price. In addition, competition is also taken into account since it has an indirect effect through substitutes.

ER pass-through onto consumer prices estimated in the paper, is low – only 12 % was transmitted, while 88 % was lost due to local costs, markup adjustments, fixed adjustment costs of manufacturers or retailers. Retail prices always adjust when wholesale prices change, since that is retailers' underlying production cost. On wholesale level, however, there is more variation due to ER fluctuations. The coefficient of foreign costs ( like non-traded wage costs) for wholesalers is larger than the one of retailers. On the other hand, shocks to domestic costs are more important for retailers than wholesalers. Yet prices remain unchanged for long periods of time, which may be caused by the already established oligopolistic pricing in the beer market and not connected that much to variations in the ER.

## References

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