**Comments on
"The cyclical behaviour of inventories: European cross-country evidence
from the early 1990s recession"**

by FabioC. Bagliano and Alessandro Sembenelli

Motivations and value-added of the paper

This paper tries to identify the existence of a bank lending channel by looking at an inventory investment model, the line of Kashyap, Lamont and Stein (QJE 1994). Using a large multinational microeconomic database, the authors look for differences and similarities across small/large and young/old firms as well as across countries (UK, Italy and France). Those data are taken from the AMADEUS database, which contains repeated observations on thousands of firms for several european countries.

The model they consider can be written as follows

$$\Delta inv_{it} = \lambda(inv_{it}^{*} - inv_{i,t-1}) - \theta(sales_{it} - E_{t-1}sales_{it}) - \beta lev_{i,t-1} + \alpha_{t} + u_{it}$$

with $\theta \geq 0$ (impact of unexpected sales) and $\beta \geq 0$ (impact of financial constraints on investment).

The expected (desired) level of inventories is given by:
$$inv_{it}^{*} = \gamma_{1}E_{t-1}sales_{it} + \gamma_{i} + \upsilon_{it}$$

where expected sales are a function of their past value:
$$E_{t-1}sales_{it} = \delta_{1}sales_{it-1} + \delta_{i} + \omega_{it}$$

This model is finally estimated as:

$$inv_{it} = (1-\lambda)inv_{i,t-1} - \theta sales_{it} + \delta_{1}(\lambda\gamma_{1} + \theta)sales_{it-1}$$
$$- \beta lev_{i,t-1} + \alpha_{i} + \alpha_{t} + \varepsilon_{it}$$

This model raises a few questions:

a)   The presence of fixed effects in the sales expectations process definition means that there are systematic expectation errors for sales. This means that, for a given firm, there are systematic (positive or negative) expectations errors. This seems difficult to justify.

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b)   The model is a kind of "ad-hoc mix" between a "partial adjustment" model and an ECM model. Then, what is the economic justification of this specification? Which assumptions are necessary to rewrite this model as a more common ECM model?

c)   The focus in the paper is on the time fixed effects (α_t) but not on β (the impact of financial constraints on inventories investment) as in similar studies. Why should these say something about the credit channel? How can we be confident that they represent "an important part of a financial propagation mechanism amplifying the impact of recessionary shocks and restrictive policy actions"? In that case, we would expect these parameters to take higher values (in absolute value) for small/young firms in order to reflect the fact that they are likely to suffer more of credit constraints than larger/older firms.

The data used in this study also raise questions:

a)   How was the sample split according to age and size? Indeed, looking at the sample composition by size and age of firms, young firms in Italy and France look quite close to old ones in terms of size; and the proportion of small/large firms are almost the same for young and old firms. This is a bit surprising.

b)   Does this have something to do with the fact that data for UK are consolidated while they are not for Italy and France?

About the results

a)   The most striking result is that the coefficient of leverage is almost identical across all groups of firms. This is not consistent with the credit channel story. Indeed, Kahyap, Lamont and Stein find that inventories of firms with an access to the bond market suffer much less from financial constraints than others. Those firms may reasonably be expected to be older/larger than those with no access to this source of external finance. Other studies on investment tend also to find a difference between small and large firms.

b)   About the time dummies profiles: Since the model is in first differences, the time dummies should be interpreted as reflecting macroeconomic variations of inventories over time. Then, again, shouldn't we expect those dummies to take larger values for potentially constrained firms than for others, i.e. for small/young firms in particular?

c)   The Sargan statistics clearly rejects the model for the complete sample while it does not so strongly for sub-samples.

     This might be a consequence of the decrease in the number of observations: what would be the results obtained with an estimation using the whole sample but interacting the variable with class dummies?

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d)   What is the interpretation of the coefficient of *sales* given in the tables? Is it the one directly given by the software or is it θ? If the former option is the right one, then the estimate has the wrong sign with respect to the one predicted by the theory underlying the estimated model.

On the whole, the claim of the authors that their econometric results point out the existence of a credit channel can be questioned.

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