Comments on: "What Drives Aggregate Investment? Evidence from German Survey Data."

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1 Overview

The broad question that motivates this paper is: Which shocks drive aggregate fluctuations? Narrative methods have been widely used in macroeconomics to help answer it. They involve obtaining information from qualitative data sources to identify the reason and/or the quantities associated with a particular change in a variable (Ramey, 2016). Often narrative methods refer to analyzing historical sources on macroeconomic policy decisions, such as fiscal or monetary policy announcements. However, they can also relate to the information contained in micro-level qualitative data sources, such as business surveys. For example, Guiso and Parigi (1999) use survey information on the subjective probability distribution of future demand to estimate firm-level uncertainty shocks.

This paper follows a similar approach, in that it uses qualitative information from business surveys, and has two novel objectives: First, to use firm-level survey information to identify the aggregate shocks driving aggregate investment in the German manufacturing sector. Second, to identify the nature of these shocks. I think we learn a lot from the results the authors obtain pursuing the first objective. The analysis related to the second objective generates results that, while they do not provide definitive answers, raise interesting questions for future research.

2 What do we learn from the paper by Bachmann and Zorn?

The authors consider the questions in the IFO investment surveys that quantify the importance of 6 factors (Sales, Technology, Financial, Profitability, Macroeconomic, Other) for firm-level fixed investment decisions. The answers are coded by the authors in numerical form, ranging from -2 to +2. While the answers are surely informative of the

importance of these factors at the firm level, it is ex-ante not clear whether they can be useful in identifying aggregate shocks. Different managers might interpret the questions differently, have different metrics, or simply be driven mostly by idiosyncratic factors that are unrelated to macroeconomic developments. The first contribution of the authors is to show that the aggregate factors (the weighted average of the firm-level factors) have a significant informational content, being correlated with other independent aggregate series in a meaningful way. After this detailed analysis the authors convincingly demonstrate that "Sales" factors and "Technology" factors are the most important ones in driving aggregate investment in the German manufacturing sector. "Financial" factors instead play a secondary role. This is perhaps not surprising, since financial frictions are mostly important for young and small firms, and the Financial factors index, being a weighted average, is mostly representative of older and larger firms.

Overall this part of the paper is very detailed and has nice findings. Typically the narrative approach consists of using macro sources for macro questions, or individual-level sources to identify individual level shocks.[1] An example of the former is analyzing FOMC minutes to help identify monetary policy shocks. An example of the latter is using qualitative information from SEC filings to identify firm-level financial frictions (e.g. see Buehlmaier and Whited, 2018, among others). Conversely, the authors show that you can aggregate micro-level qualitative information to obtain useful information on macro shocks.

However, as Ramey (2016) points out in a recent survey, narrative methods alone are not sufficient in providing exogeneity. In other words, survey answers might in principle represent genuine exogenous shocks, but in reality they are mostly endogenous responses to other shocks. The authors are well aware of this problem, and propose to combine the survey information with additional identification assumptions. They do so by matching firm-year observations in their survey with the IFO Business Cycle Survey, which has information on firm-level price changes. They show that while the "Sales" index is positively related to the frequency of price changes at the firm-level, the "Technology" index

[1] See Ramey, 2016, for a detailed review of this literaure.

is negatively related to them. In other words, firms citing a positive sales component behave like firms with some monopolistic power reacting to positive demand shocks, they tend to raise prices. Moreover, firms citing a positive technology component behave like firms affected by a positive productivity shock. Remarkably, these findings are robust to firm and year fixed effects. Therefore they are driven by firm specific shocks rather than by other external confounding factors. This independent source of information allows the authors to adopt an intuitive identification scheme. Aggregate demand shocks and aggregate technology shocks are positively correlated with, respectively, the Sales and Technology aggregate indexes. Furthermore, the unconditional correlation between aggregate demand shocks and PPI inflation is positive, while the unconditional correlation between technology shocks and PPI inflation is negative. As a result, the authors obtain that demand shocks explain between 66% and 75% of investment fluctuations, and between 50% and 63% of Industrial production growth fluctuations. Overall, the variance decomposition analysis and other diagnostics performed on the shocks confirm the validity of the findings.

3 Comments and Questions for Future Research.

Bachmann and Zorn have shown that firm-level investment surveys are useful to identify aggregate shock. They have also shown that demand shocks are driving most of the business cycle fluctuations of aggregate manufacturing investment in Germany.

Two questions remain: First, what do we gain, quantitatively, from using survey data? The paper does not provide a benchmark against which to compare the quantitative findings. For example, suppose that instead of using the sales and technology indexes constructed from the survey data, the authors use industry-level sales growth and TFP growth data, and then adopt the same procedure outlined above to identify demand and technology shocks. Would results be very different? And if so, what is the interpretation of the difference?

The above question reveals once again the general issue with the interpretation of the

results. In the last part of the paper the authors argue that their demand shocks are likely to be sentiment shocks. I find this conclusion interesting but not entirely convincing, for various reasons.

First, the main piece of evidence to support this conclusion is the high correlation the authors find between their aggregate demand shock and an aggregate business sentiment index for the West German manufacturing sector from the IFO Business Cycle Survey. The problem here is the same one noted before: Survey answers are not per se exogenous shocks. That the business sentiment index is so correlated to the demand shock signals that they are probably both driven by the same exogenous shock which we still need to precisely identify. I sympathize with the idea that it could be a sentiment shock, but then the sentiments driving demand shocks should be consumer sentiments rather than those of business executives.

Second, the authors do not systematically analyse to what extent their demand shocks are driven by other shocks traditionally considered as relevant for the business cycle. They verify the simple correlation between their shock and observed policy outcomes (such as tax rates, government purchases and monetary policy rates) rather than properly identified policy shocks. Moreover, they do not verify to what extent the demand shocks are driven by export shocks, which are arguably very important for the export-oriented German manufacturing sector.

In fairness, to precisely identify the nature of demand shocks is an extremely difficult task, and the authors only claim to provide some "*Suggestive Evidence on the Nature of the Aggregate Demand Shocks*". Therefore, these comments do not detract from the paper, rather they point to possible directions for future research. In this respect, I think that one useful avenue of research is to exploit more the micro-level richness of the survey data. For example, useful information could be obtained by comparing firm-level sales growth and productivity (computed using quantitative information) with survey answers, if such merging of different datasets is at all possible for the German data. One could then analyse whether survey answers are driven by temporary or permanent fluctuations in sales, or whether purely noisy (sentiments?) fluctuations matter. This line of analysis

could help disentangling to what extent the factors that drive investment are rational reactions to exogenous factors, or truly behavioral sentiment shocks.

References

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