# "*Firm Default and Aggregate Fluctuations*" by Tor Jacobson et al.

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# My Foremost Comments

The purpose of the paper is to provide a first step towards understanding the quantitative impact of macroeconomic conditions on default risk

- Trying to investigate the impact of aggregate fluctuations on firm default behavior and for a large panel dataset for the Swedish economy is a very worthwhile undertaking

  - It is clear that much effort has gone into the writing of this paper. It is an impressive piece of work

  - My comments are really all in the spirit of "what would I change to make the paper even more convincing to the reader"

# Overall

The paper uses the methodology put forth in the work of Shumway (2001, *JB*) to model the interaction between macroeconomic fluctuations and default risk (individual and aggregate)

- The paper illustrates the estimation of the default risk by employing a reduced-from statistical model for all incorporated Swedish firms

- In the finance literature the academic debate has been carried out primarily from the "*corporate specific perspective*"

  - Previous works have examined mostly business defaults of public quoted companies (see, e.g., Altman et al. (1968, *JF*), Altman et al. (1971, *JF*), and Altman et al. (1973, *BJE*))

  - However, recent studies by Duffie at al. (2007, *JFE*), Carling et al. (2007, *JBF*) and Pesaran et al. (2006, *JMCB*) document the importance of macroeconomic variables for default rates

- To the best of my knowledge, this is the first empirical study of the link between macroeconomic conditions and default risk for both listed and privately held firms

  - Overall, this is a valuable extension to the existing literature, although subject to a few limitations

# Contributions (Data and Results)



**The paper represents an instalment on a very important research agenda**

- **The Micro data appears to be a very rich and unique dataset. However, there are concerns about the representativeness of the sample. It is intended to be representative of Swedish *aktielbolag* or firms between January, 1 1990 to December, 31 2002**

  **- Since the sample period here is so long, these concerns may be especially important. That is, not only is one concerned about how representative the sample is at a given moment, but also whether its representativeness has changed over time**

  **- The authors overcome this issue by relying on *payment remarks* collected by the *credit bureau – This is a very remarkable contribution!***

  **- <u>This calls attention to the care that researchers need to take in collecting and using data</u>**

- **This particular instalment offers some interesting new "facts"**

  **- In the big picture of measuring and understanding the empirical relationship between firm default and aggregate shocks, the authors report on some significant and "innovative" findings**

# Suggestions (Variables)



I have some relatively minor concerns about specific aspects of the analysis

- The paper is primarily an empirical exercise
- Relationship between default risk and aggregate fluctuations is very complex

  - The authors use 4 standard macro variables in the model: 1. output gap 2. inflation rate; 3. the REPO rate; 4. the real exchange rate
- The authors think that "these variables could credibly have measurable impact on the default risk of any given firm"

  - *But, in general, the choice of certain types of firm-specific and macroeconomic variables as underlying regressors could be arbitrary, hence, this issue merits closer investigation*

  - This seems to be one of the main limitations of the paper

  - Consequently, it seems worthwhile to carefully consider the fitness of macro variables as proxies of aggregate fluctuations
- *Why are these the most relevant macro variables? Why do not use, for instance, just the GDP measure?*
- *Is the REPO rate the optimal proxy of credit conditions?*

  - To account for credit risk, McConnell and Schwartz (1986, *JF*) use an interest rate that is "grossed up to capture the default risk of the issuer" (page 567) rather than the risk-free rate. This solution, however, leaves open many questions about its quantification
- *Perhaps consider also the volatility of these variables*

# Suggestions (Modeling)



**The work is somewhat difficult to interpret**

- ***This is not a criticism***

  **- However, there is a lack of much of an overall conceptual framework to help us to understand the possible sources of connections between changes in the macro environment (e. g. the inflation rate) and changes in the probability of default of a given firm**

  **- Put differently, we need to consider the sources of *heterogeneity* in macro adjustments at the most basic level and how this *heterogeneity* is likely to interact with changes in the default rate**

- **Many factors may be at work in the underlying distribution of macro adjustments**

  ***- Could the model incorporate the impact of a liquidity factor within the economy?***

  **- An analysis of the determinants of changes in the structure of the economy could gives some insight into this problem, but a conclusive answer has to be left to future research**

- **The proposed econometric model – a *multiperiod logit* model (following Shumway (2001, *JB*) – is adequate and rigorous**

# Suggestions (Results)



Empirical results are neat and significant

- *The results are disaggregated in four main categories*

  1. Firm specific variables only
     a. industry specific
     b. economy-wide
  2. With macroeconomic variables
     a. industry specific
     b. economy-wide

  - Great that is possible to have multiple comparisons

- The authors make a relatively big deal about the findings of the in-sample and out-of-sample performance tests of the model

  - Both the industry and the economy-wide models are robust and fit the data very well

- *The key question at hand is whether the main results have any policy and\or regulatory implications*

  The authors should stress the relevance of the research for policymakers

# Suggestions (Results)



- *Could the results be distinct using the Merton Model (1974, JF)?*

  **- I think it would be beneficial to include also these estimates into a new sub-section of "Results Comparison" (<u>for listed companies</u>)**

- *History of Business Cycles: What shocks matter, when and how much?*

  **- One question that arises is whether any aspects of these findings are spurious. Perhaps what is driving the results are the underlying factors that cause rising (declining) default rates and that the timing of these factors corresponds to a period with many dramatic changes in the Swedish economy**

  **- The natural next step would be further analyses of the development of macro variables across the business cycles**

  **- For instance, Nakajima and Rios-Rull (2007, *Econometrica*) specify the aggregate shocks and calibrate the parameters associated with aggregate shocks to match U.S. business cycle statistics (output volatility and the fact that recessions are shorter)**

  **- Unobservable factors?**

  **- Cyclical behaviour?**

# Conclusions

- **Frontier paper**

  **- Nice empirical framework**

  **- Rich and unique dataset**

  **- Interesting findings (new facts)**

- ***Only concern:*** **While there may be some concerns about the robustness of these facts to measurement concerns and about whether the results are idiosyncratic to the turbulence of the early 1990s, they are interesting and deserve further consideration**

- **The paper provides a basis for future empirical work**

  **- We need more structure and further analysis to interpret and understand these new facts**

  **- Non uniform-aggregate shocks (Recession hit particularly hard on some firms)**

  **- Countercyclical variables (e. g. the *Countercyclical Earnings Variance* approach as reported by Storesletten, Telmer and Yaron (2001, *European Economic Review*)**