Economic and Financial Determinants of Firm Bankruptcy: Evidence from the French Food Industry

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Introduction

Firm bankruptcies in the French Food Industry
- On average, 1,100 firms file for bankruptcy every year.
- Resilience during the recent crisis.
- Dramatic increase of firm bankruptcies in recent period.

Figure 1: Bankruptcy rate, %
- Each year, on average, nearly 2,700 jobs are concerned. In 2012, more than 4,000 jobs!

Objectives
- To understand firms’ bankruptcy risk evolution and to identify the determinants of exits due to bankruptcy:
  - Firm size, age
  - Productivity
  - Financing conditions
- To identify the role of financing conditions in bankruptcy risk, particularly relevant after the recent crisis.
- To reveal the differences of bankruptcy patterns in the food industry and other manufacturing industries.

Data & Methods
- Firms’ balance sheet database (FIBEN BILAN) and bankruptcy database, Banque de France, 1998-2012.
- Full sample of Manufacturing industry firms: over 492,000 firm-year observations.
- Scarce data on bankrupt firms!
- Bankruptcy definition: judicial reorganization or liquidation proceedings.
- Firm characteristics:
  - TFP
  - Productivity
  - Financing conditions
  - Costs of credit, bank debt level
  - Annual dummies

Figure 2: “GAD group: dead or alive, we’ll fight till the end”
- The economic impact of bankruptcies in terms of firms’ outstanding debt doubled between 2010 and 2013.
- The proportion of bankruptcy observations is very low!
- Smaller and younger firms are at most vulnerable positions.
- Among manufacturing sub-sectors, food industry seems to be more resilient towards bankruptcy risks.
- Bankruptcy predictions based on our model confirm the observed dramatic increase of bankruptcy risks in the French food industry in the recent period.
- Meat industry was mostly responsible for bankruptcy risk evolution between 2010 and 2012.

Results

Probit regression of bankruptcy using WEML on choice-based samples, 2001-2013

<table>
<thead>
<tr>
<th>TFP</th>
<th>Predicted prob.</th>
<th>Manufacturing</th>
<th>Predicted prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food industry (3)</td>
<td>Manual industry (all sectors) (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.026</td>
<td>0.271</td>
<td>0.548</td>
</tr>
<tr>
<td>Predicted probability of bankruptcy, %</td>
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- Higher productivity reduces the bankruptcy risk and, on the contrary, higher cost of credit increases the probability to go bankrupt.
- We find lower effects of firms’ financial characteristics (credit cost, bank debt level) on their bankruptcy risk.
- On contrary, productivity appears having more important beneficial effect on bankruptcy risk reduction.
- Smaller and younger firms are at most vulnerable positions.
- Among manufacturing sub-sectors, food industry seems to be more resilient towards bankruptcy risks.
- Bankruptcy predictions based on our model confirm the observed dramatic increase of bankruptcy risk in the French food industry in the recent period.
- Meat industry was mostly responsible for bankruptcy risk evolution between 2010 and 2012.

Conclusions