Insolvencies in Professional Sports: Evidence from German Football

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1. Introduction and Research Question

- **European football clubs are generally linked with financial instabilities**
  (Andreff, 2007; Baroncelli & Lago, 2006; Boscá et al., 2008; Franck, 2014; Franck, E., & Müller, 2000; Frick & Prinz, 2006; Müller et al., 2012; Nielsen and Storm, 2012; Peeters and Szymanski; Storm & Nielsen, 2012)
  - “Winner-takes-all-market” → Rat Races
  - Money Injections by outside investors → less incentive to economic efficiency
  - Soft Budget Constraint → High possibility to “bail out”
  - Relegation → External shocks on income
  - Even Sloane (1971, p. 122) stated: “majority of league clubs operate at a loss and only remain solvent through income derived from non-footballing activities”

- **Germany perceived as being financially more stable**
  (Brand et al., 2013; Franck, 2010; Frick & Prinz, 2006; Morrow, 2013; Storm & Nielsen, 2012; Weimar & Fox, 2012; Wilkesmann et al., 2011)
  - Main reason: License Requirements by the DFL
  - 50+1 Rule → less inefficient money injection's
  - “Parachute”-option by the DFL
1. Introduction and Research Question

- **Drawbacks of research on financial performance of German football teams**
  - Disclosure of financial information except for a few cases

- **Insolvencies as proxy of financial performance in Germany**
  - Measurement due to official statements and press interest

- **Existing research**
  - Very recent research on insolvencies in Europe by Beech et al. (2010) and Szymanski (2017) in English football and Scelles et al. (2016) in French football

- **Research Questions**
  - Do German football club’s financial performances differ from those of other European top league-clubs?
  - What drives insolvencies in German football?
2. Insolvency Procedure in Germany

**Insolvency procedure in German football**

- Declaration of insolvency (request for the opening of insolvency proceedings at the local court)
  - Annulment of declaration → No consequences
  - Control by the court if the insolvency assets exceed the potential court fees
- Liquidation of the organization
- Opening of insolvency proceedings /
- 9 point penalty at the end of the season
  - Appointment insolvency administrator
  - Meeting of all creditors
- Insolvency plan proceeding
  - Rejection → Liquidation proceeding
  - Debt waiver
    - Insolvency quota
    - Survival of the organization
- Option
  - Foundation of a successor club
- Liquidation from the football league register
  - Liquidation of the organization
  - Debt repayment
  - Allocation remaining assets
- Restart at the lowest division
3. Descriptive Statistics

*Insolvency statistic of German top tier football clubs (1995/1996 to 2016/2017)*

<table>
<thead>
<tr>
<th>Division</th>
<th>Declaration</th>
<th>Annulled</th>
<th>Plan</th>
<th>Liquidation (Successor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0 (0)</td>
</tr>
<tr>
<td>3</td>
<td>26</td>
<td>3</td>
<td>21</td>
<td>1 (1)</td>
</tr>
<tr>
<td>4</td>
<td>55</td>
<td>10</td>
<td>23</td>
<td>19 (14)</td>
</tr>
<tr>
<td>5</td>
<td>26</td>
<td>6</td>
<td>7</td>
<td>12 (6)</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>109</strong></td>
<td><strong>19</strong></td>
<td><strong>55</strong></td>
<td><strong>32 (21)</strong></td>
</tr>
</tbody>
</table>

*Ongoing proceedings: 5*

3x Declaration: KFC Uerdingen, SC Fortuna Köln, SSV Ulm 1846

2x Declaration: TuS Celle FC, VfB Leipzig, Alemannia Aachen, VfB Lübeck, Borussia Neunkirchen, VfR Neumünster 1910, FC Sachsen Leipzig, FC Eschborn, Wegberg-Beeck 1920, FC Eintracht Bamberg, FSV Zwickau, Sportfreunde Siegen, Kickers Offenbach
3. Descriptive Statistics

### Descriptive Statistics

**Insolvency in European football – a comparison**

<table>
<thead>
<tr>
<th></th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
<th>Tier 4</th>
<th>Tier 5</th>
<th>Sum (1-3)</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Germany</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992 - 2002</td>
<td>0</td>
<td>2</td>
<td>20</td>
<td>24</td>
<td>9</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>2003 - 2014</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>29</td>
<td>14</td>
<td>8</td>
<td>51</td>
</tr>
<tr>
<td><strong>England</strong> (Szymanski et al., 2017)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992 - 2002</td>
<td>0</td>
<td>8</td>
<td>11</td>
<td>19</td>
<td>6</td>
<td>19</td>
<td>44</td>
</tr>
<tr>
<td>2003 - 2014</td>
<td>2</td>
<td>10</td>
<td>13</td>
<td>10</td>
<td>18</td>
<td>25</td>
<td>53</td>
</tr>
<tr>
<td><strong>France</strong> (Scelles et al, 2016)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992 - 2002</td>
<td>2</td>
<td>6</td>
<td>16</td>
<td>no Data</td>
<td>no Data</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>2003 - 2014</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>no Data</td>
<td>no Data</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>
3. Descriptive Statistics

Performance before and after insolvency

Germany

England

Szymanski (2017, p. 14)
4. Empirical Analysis

• Measuring the importance of negative shocks on the probability of insolvency

• Empirical model by Szymanski (2017)
  ➢ Testing whether the sum of residuals (shocks) from two seasons prior to insolvency increases the probability of an insolvency
  ➢ 1st – 4th tier from 1995-2016
  ➢ First stage: demand-performance relationship
    • Dependent variable: negative log odds of league rank (Szymanski & Smith, 1997; Buraimo et al., 2007)
    • Attendance as proxy of demand
    • Predicting residuals as approximation of a shock (derivation from expectation [t-1])
    • Negative residual implies that the club achieved a lower league position than it might have expected → lower level of revenue than expected → financial stress
  ➢ Second stage
    • Using residuals from first stage estimation (Model 5)
    • Dependent Variable: Insolvency (1/0)
    • Linear probability model
### 4. Empirical Analysis


<table>
<thead>
<tr>
<th>Log Odds of rank</th>
<th>OLS</th>
<th>FE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Odds of rank&lt;sub&gt;<em>t-1</em>&lt;/sub&gt;</td>
<td>0.561 (10.63)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>0.272 (7.24)&lt;sup&gt;***&lt;/sup&gt;</td>
</tr>
<tr>
<td>Annual attendance&lt;sub&gt;<em>t-1</em>&lt;/sub&gt;</td>
<td>0.095 (8.81)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-0.01 (-0.38)</td>
</tr>
<tr>
<td>Promotion&lt;sub&gt;<em>t-1</em>&lt;/sub&gt;</td>
<td>0.243 (5.31)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>0.092 (2.16)&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Relegation&lt;sub&gt;<em>t-1</em>&lt;/sub&gt;</td>
<td>-0.301 (-6.27)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-0.091 (-2.22)&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Division</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.division</td>
<td>Ref.</td>
<td>Ref.</td>
</tr>
<tr>
<td>2.division</td>
<td>-0.572 (-7.19)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-0.68 (-10.48)&lt;sup&gt;***&lt;/sup&gt;</td>
</tr>
<tr>
<td>3.division</td>
<td>-0.876 (-7.18)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-1.242 (-11.9)&lt;sup&gt;***&lt;/sup&gt;</td>
</tr>
<tr>
<td>4.division</td>
<td>-1.406 (-7.63)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-2.05 (-13.87)&lt;sup&gt;***&lt;/sup&gt;</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.318 (-1.81)&lt;sup&gt;*&lt;/sup&gt;</td>
<td>1.064 (3.09)&lt;sup&gt;***&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Observations: 2,641

R-squared: 0.89

Note: t-values in parentheses; standard errors are clustered at club level
4. Empirical Analysis

**Insolvency probability regression**

<table>
<thead>
<tr>
<th>Insolvency (0/1)</th>
<th>LPM FE 1</th>
<th>LPM FE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residuals FE</td>
<td>-0.017 (-2.00)**</td>
<td>-0.004 (-0.51)</td>
</tr>
<tr>
<td>Promotion_{t-1}</td>
<td></td>
<td>-0.003 (-0.44)</td>
</tr>
<tr>
<td>Promotion_t</td>
<td></td>
<td>0.001 (0.09)</td>
</tr>
<tr>
<td>Relegation_{t-1}</td>
<td></td>
<td>0.06 (3.28)****</td>
</tr>
<tr>
<td>Relegation_{t1}</td>
<td></td>
<td>0.023 (1.54)</td>
</tr>
<tr>
<td>Division Fe Incl.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.031 (3.49)****</td>
<td>-0.006 (-0.38)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.14</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note: t-values in parentheses; standard errors are clustered at club level

→ Negative shocks and relegation are roughly equivalents and the probability of insolvency is increased when these events are observed
5. Conclusions and limitations

• Insolvency patterns are very similar between Germany, England and France
  - German clubs are financially more stable in the top two divisions
  - German license system only prevents the two top divisions from financial collapses
  - The financial collapses are shifted towards fourth and fifth division

• High rates of annulled declarations of insolvencies
  - 17% in football vs. 4% outside sports industries (2016 in Duisburg)
  - Proof for the soft budget constraint assumptions in football (bail out)

• Clubs enter a perennial downward spiral before an insolvency, which often collapses after a relegation (as a shock)

• Limitations
  - Limited club data before 2000
  - No financial and wage information (e.g. Szymanski, 2017)