Reputation and Firm Survival in a Competitive Environment: Empirical Evidence from the German Wine Industry

Bernd Frick
Agenda

1. Why Should We Care About the Effect of Reputation on Firm Survival?

2. A Brief (and Highly Selective) Review of the Literature

3. Hypotheses, Data and Findings

4. Summary, Implications, and Next Steps
When service attributes in general and service quality in particular are difficult to observe, consumers tend to use past quality as an indicator of present or future quality.

Firm’s decision to produce high quality services eventually leads to the gradual emergence of a reputation.

Seller who chooses to enter the high quality segment of the market must initially invests in reputation via production of superior quality. During initial investment period, producer must sell his products at less than cost, because he cannot command the prices associated with high quality until reputation is established.

Implies that in equilibrium high quality items must sell for premium above their costs of production. Premium represents the return on the initial investment in reputation.
- Premium that a reputable firm earns induces it to maintain its reputation.

- Without premiums for high quality products, firms would find that an “opportunistic” strategy of quality reductions is profit maximizing: While quality reductions typically yield immediate cost savings, adverse effects on reputation will arise only in the longer run.

- If opportunistic strategy allows profits to be made, it would always dominate, unless higher profits can be earned via faithful strategy of quality maintenance.

- Nevertheless, there always remains room for potential quality cutting by producers. Due to moral hazard and adverse selection reasons, perfect guarantees are not feasible.
Unrealistic to assume that firm specific quality information is available to consumers or can be acquired at reasonable cost. May be possible (or cheaper) for consumers to acquire information on quality and/or reputation of a group of firms with which individual firm can be identified.

Expected quality of a firm’s output may depend on collective reputation, i.e. on average quality of the goods produced by a group of firms to which an individual firm belongs.

Existence of professional associations that restrict access to particular producers can contribute to maintaining high quality standards by reducing moral hazard behavior.
## 2. A Brief Review of the Literature

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Data and Estimation</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beckert et al. (2016)</td>
<td>1,071 wines from Rheingau and Rheinhessen</td>
<td>Wines framed as a “cultural product” high in aesthetic value sell at significantly higher prices as well as wines whose producers emphasize particular regional traditions.</td>
</tr>
<tr>
<td>Benfratello et al. (2009)</td>
<td>603 Barolo and Barbaresco wines</td>
<td>The regional reputation of wines and producers is far more important in explaining the observable variation in bottle prices than either sensorial traits or “objective” variables.</td>
</tr>
<tr>
<td>Cardebat and Figuet (2004)</td>
<td>254 Bordeaux wines</td>
<td>Regional reputation is most important variable in explaining differences in prices.</td>
</tr>
<tr>
<td>Haeger and Storchmann (2006)</td>
<td>451 Pinot Noir from California</td>
<td>Winemaker reputation matters a lot, expert knowledge has little explanatory power</td>
</tr>
<tr>
<td>Roma et al. (2013)</td>
<td>402 and 558 wines from Sicily</td>
<td>One unit increase in firm reputation (number of stars in a respected wine guide) associated with 4 and 9 percent increase in bottle price.</td>
</tr>
</tbody>
</table>
Frick and Simmons (2016): Other things equal, each additional Gault Millau point is associated with 11% higher bottle prices (sample: 14,000 wines from some 300 different wineries (listed as well as non-listed) in Mosel valley).

Effect is stable across the price distribution (quantile regression model).

However, for VDP members effect increases significantly from quantile to quantile and is three times as large at the .90 percentile compared to the .10 percentile.

Thus, for some wineries (around 10%) returns to reputation increase non-linearly.
3. Hypotheses, Data, and Findings

- **H$_1$**: The higher a firm’s individual reputation, the less likely that firm is to exit the market (exit=not being listed in GM any longer).

- **H$_2$**: Membership in prestigious association (here: VDP) is associated with a lower exit risk.

- **H$_3$**: Firms with a high individual reputation benefit particularly from membership in VDP in terms of reduced exit probability.
3. Hypotheses, Data, and Findings

- Data sources:
  - “Gault Millau” (most prestigious German wine guide); first edition appeared in 1994, most recent version in 2015 (2016 edition to appear in November)
  - List of VDP members of regional branch (Mosel valley) over entire period (including entries and exits)

- So far data set consists of 1,489 German wineries over the period 1994-2013 with 14,058 winery-year-observations (unbalanced panel).
Number of Wineries per Year

Bernd Frick
Wineries by Number of Years in Sample
Characteristics of Firms in Sample

- Original Firms
- New Firms
- Exiting Firms
- Re-Entries

Bar chart showing the comparison between original, new, exiting, and re-entry firms.
Changes in Reputation Scores

Negative  Zero  Positive

0  80  10

22.06.2016  Bernd Frick
FS = \beta_0 + \beta_1 \text{REP}_1 + \beta_2 \text{REP}_2 + \beta_3 \text{REP}_3 \_4 \_5 + \beta_4 \text{VDP} + \beta_5 \Sigma \text{VDP} \times \text{REP}_D + \\
\beta_6 \text{TT} + \beta_7 \text{D1994} + \beta \Sigma \text{FC} + \beta \Sigma \text{RD} + \xi

- **FS**: firm survival (number of years listed in wine guide (Min. 1; Max 20; Mean 9.44; Std Dev 6.59))
- **REP_1 ... REP_3 \_4 \_5**: Dummies indicating reputation values 1, 2 and 3 and more (reference group: reputation value 0.5)
- **VDP**: membership in VDP (Association of German Quality Wine Producers; 0=no; 1=yes)
- **VDP \times \text{REP}_D**: interaction of VDP membership and reputation dummies REP_1 ... REP_3 \_4 \_5
- **D1994**: winery included in first edition already (dummy variable; 0=no; 1=yes)
- **TT**: Linear time trend (1994=1, 1995=2 ... 2013=20)
- **\Sigma FC**: vector of firm characteristics (acreage, number bottles produced per year, etc.)
- **\Sigma RD**: vector of region dummies (n=13, reference region: Pfalz)
Descriptive Evidence

Kaplan-Meier survival estimate

22.06.2016 15
Bernd Frick
### Estimations Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Robust Std. Err.</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>REP_1</td>
<td>1.668</td>
<td>0.281</td>
<td>5.94***</td>
</tr>
<tr>
<td>REP_2</td>
<td>2.722</td>
<td>0.288</td>
<td>9.46***</td>
</tr>
<tr>
<td>REP_3_4_5</td>
<td>3.259</td>
<td>0.370</td>
<td>8.81***</td>
</tr>
<tr>
<td>VDP</td>
<td>5.337</td>
<td>26.462</td>
<td>0.20+</td>
</tr>
<tr>
<td>VDP REP 0.5</td>
<td>0.052</td>
<td>0.269</td>
<td>0.19+</td>
</tr>
<tr>
<td>VDP REP 1</td>
<td>0.056</td>
<td>0.270</td>
<td>0.21+</td>
</tr>
<tr>
<td>VDP REP 2</td>
<td>0.051</td>
<td>0.270</td>
<td>0.19+</td>
</tr>
<tr>
<td>VDP REP 3</td>
<td>0.070</td>
<td>0.268</td>
<td>0.26+</td>
</tr>
<tr>
<td>VDP REP 4</td>
<td>2.287</td>
<td>0.905</td>
<td>2.53**</td>
</tr>
<tr>
<td>VDP REP 5</td>
<td>2.659</td>
<td>1.163</td>
<td>2.29**</td>
</tr>
<tr>
<td>D1994</td>
<td>0.809</td>
<td>0.195</td>
<td>4.16***</td>
</tr>
<tr>
<td>TT</td>
<td>0.696</td>
<td>0.073</td>
<td>9.55***</td>
</tr>
</tbody>
</table>

Firm Characteristics included
Region Dummies included

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>-3.926</td>
<td>26.603</td>
</tr>
<tr>
<td>N of Wineries</td>
<td></td>
<td>1,489</td>
</tr>
<tr>
<td>N of Failures</td>
<td></td>
<td>366</td>
</tr>
<tr>
<td>N of Observations</td>
<td></td>
<td>14.058</td>
</tr>
<tr>
<td>LL Null Model</td>
<td></td>
<td>-2,019.2</td>
</tr>
<tr>
<td>LL Full Model</td>
<td></td>
<td>-1,137.3</td>
</tr>
<tr>
<td>Wald Chi2</td>
<td>3,802.1***</td>
<td></td>
</tr>
</tbody>
</table>

+ not significant; * p < .10; ** p < .05; *** p < .01
It appears that – other things equal – the higher the reputation of a firm the more likely it is to survive in a highly competitive environment, where even the largest producers have negligible market shares only.

Moreover, it appears that the impact of reputation on firm survival is not linear, suggesting that exit costs increase exponentially.

Finally, VDP membership has a positive impact on survival only for wineries with a high individual reputation.

These findings are robust across a variety of specifications and corroborate empirical evidence obtained from hedonic price models.
4. Summary, Implications, and Next Steps

- Reputation matters – not only for product prices, but also for firm survival.
- Combination of individual and collective reputation particularly important.
- What’s next?
  - Extend data set to include most recent years.
  - Add membership in other professional associations (eco labels are included in data set for a short period already).
  - Estimate additional models to document robustness of findings.
- ???


