Market Orientation of German dairy farmers - Moving towards market liberalization

Anneke Hellberg-Bahr and Achim Spiller
Outline

- Challenges in agriculture
- Market Orientation / Policy orientation
- Research design
- Results
- Conclusions
Challenges in agriculture

- Challenges from the environment of agricultural production:
  - Consumer demands
  - Environmental claims
  - Increasing competition
  - Growth and structural change
  - Concentration in food retailing

- Challenges arising from the CAP
  - Market Liberalization (e.g. abolition of the milk quota regime)
  - Development of new state-controlled subsidy programs (e.g. bioenergy)
  - Changing positions of agricultural interest groups
Research Question

Are all farmers ready to meet these challenges? Or are there differences especially among dairy farmers?
Market orientation

- What are the relevant **success factors** for firms and how does market orientation influence their performance?
- According to Kohli and Jaworski (1990): “Market orientation refers to the organizationwide generation, dissemination, and responsiveness to market intelligence”.
  - Behavioral approach

- In 1996 Grunert et al. adapted the marketing research approach to agricultural food supply chains.
- A higher market orientation can lead to a competitive advantage of the firm and within these to a larger success (Grunert et al. 1996).
Policy orientation / subvention orientation

- In 1996 Young and Westcott argue that a reduction of agricultural subvention accelerates the trend towards greater market orientation.
- Vast majority of farmers would adopt cross compliance for economic reasons (Spash and Falconer 1997).
- Increasing subventions for organic production trigger farmers to switch to organic production (in Finland) (Pietola and Lansink, 2001).
- The adaption of organic production depends upon the duration of support (subvention) (Schramek and Schnaut 2004).
- Five farmer groups of different policy orientations were found in 2006 (Davies and Hodge) for adaption of cross compliance.

→ Market Orientation and Policy Orientation in contrast to each other.
Sample

- Size: 532 farmers
- Located in: north-western Germany
- Students of the university of Göttingen recruited farmers to answer the survey online/paper.
- In addition online on the web site of the German journal top agrar.
Sample description

- Average age: 41 Years
- Gender: 92.7% male
- Farm managers: 69.1%
- Professional farms: 89.8%
- Acreage: 198 hectares
- Line of production:
  - arable farming: 38.6%
  - dairy farming: 33.1%
  - fruits and vegetables: 2.0%
  - bioenergy: 3.5%
  - pork production: 22.8%
- Mainly well educated respondents (master, university): 62%
# Attitude towards market pricing

<table>
<thead>
<tr>
<th>Policy makers should build a safety net (guaranteed price) for farmers.*</th>
<th>Arable farming</th>
<th>Dairy farming</th>
<th>Fruit and vegetable</th>
<th>Bioenergy</th>
<th>Pork production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.22</td>
<td>0.13</td>
<td>-0.60</td>
<td>0.30</td>
<td>-0.27</td>
<td>-0.12</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prices should be freely determined by the market.***</th>
<th>Arable farming</th>
<th>Dairy farming</th>
<th>Fruit and vegetable</th>
<th>Bioenergy</th>
<th>Pork production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.06</td>
<td>0.57</td>
<td>1.38</td>
<td>0.50</td>
<td>1.16</td>
<td>0.91</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>My own company growth should not be the disadvantage of my colleagues.***</th>
<th>Arable farming</th>
<th>Dairy farming</th>
<th>Fruit and vegetable</th>
<th>Bioenergy</th>
<th>Pork production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.13</td>
<td>0.53</td>
<td>-0.57</td>
<td>0.33</td>
<td>0.15</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Production prices, which do not cover the production costs, should not be allowed.**</th>
<th>Arable farming</th>
<th>Dairy farming</th>
<th>Fruit and vegetable</th>
<th>Bioenergy</th>
<th>Pork production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.66</td>
<td>-0.06</td>
<td>-0.50</td>
<td>-0.09</td>
<td>-0.39</td>
<td>-0.39</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growing or giving way: this is the right motto for agriculture.***</th>
<th>Arable farming</th>
<th>Dairy farming</th>
<th>Fruit and vegetable</th>
<th>Bioenergy</th>
<th>Pork production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.13</td>
<td>-0.75</td>
<td>0.80</td>
<td>-1.00</td>
<td>-0.25</td>
<td>-0.35</td>
<td></td>
</tr>
</tbody>
</table>

Source: authors calculations, grouped medians with H-Test following Kruskall and Wallis (Bühl, 2008); ***p ≤ 0.001, **p ≤ 0.01, ns = not significant; *p ≤ 0.05; Scale from +2 = totally agree to -2 = totally disagree
### Attitude towards subvention

<table>
<thead>
<tr>
<th></th>
<th>Arable farming</th>
<th>Dairy farming</th>
<th>Fruit and vegetable</th>
<th>Bioenergy</th>
<th>Pork production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural markets have to be protected politically. ***</td>
<td>-0.14</td>
<td>0.38</td>
<td>-1.00</td>
<td>0.36</td>
<td>0.07</td>
<td>0.10</td>
</tr>
<tr>
<td>I am able to produce at internationally competitive prices.***</td>
<td>-0.04</td>
<td>-0.62</td>
<td>-0.25</td>
<td>-0.69</td>
<td>0.04</td>
<td>-0.25</td>
</tr>
<tr>
<td>Guaranteed prices are a useful tool for farmers.***</td>
<td>-0.65</td>
<td>-0.20</td>
<td>-1.00</td>
<td>0.00</td>
<td>-0.46</td>
<td>-0.45</td>
</tr>
<tr>
<td>Pricing should be done by companies without political influence.**</td>
<td>0.94</td>
<td>0.70</td>
<td>1.33</td>
<td>0.67</td>
<td>1.06</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Source: author’s calculations, grouped medians with H-Test following Kruskall and Wallis (Bühl, 2008); ***p ≤ 0.001, **p ≤ 0.01, ns = not significant; *p ≤ 0.05; Scale from +2 = totally agree to -2 = totally disagree
## Results – Confirmatory factor analysis – Clustering variables

### Factor political / state orientation, Cronbach’s Alpha: 0.764

<table>
<thead>
<tr>
<th>Statement</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural markets have to be protected politically.</td>
<td>0.744</td>
</tr>
<tr>
<td>Production prices, which do not cover the production costs, should not be allowed.</td>
<td>0.735</td>
</tr>
<tr>
<td>Guaranteed prices are a useful tool for farmers.</td>
<td>0.723</td>
</tr>
<tr>
<td>Policy makers should build a safety net (guaranteed price) for farmers.</td>
<td>0.695</td>
</tr>
<tr>
<td>We as farmers can request that consumers pay enough money for our products that we are able to survive financially.</td>
<td>0.662</td>
</tr>
<tr>
<td>Subsidies for farmers make sense.</td>
<td>0.489</td>
</tr>
</tbody>
</table>

### Factor Market orientation, Cronbach’s Alpha: 0.632

<table>
<thead>
<tr>
<th>Statement</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices should be freely determined by the market.</td>
<td>0.780</td>
</tr>
<tr>
<td>Pricing should be done by companies without political influence.</td>
<td>0.748</td>
</tr>
<tr>
<td>I am able to produce at internationally competitive prices.</td>
<td>0.630</td>
</tr>
<tr>
<td>Output prices may be below the cost of production for a short time.</td>
<td>0.624</td>
</tr>
</tbody>
</table>

Source: authors calculations
Results

Cluster 1 (n=157) 29.5 %: State oriented
✓ 51.7 % dairy farmers
✓ Especially dairy farmers and bioenergy production
✓ Organic farmers 62.0 % (26)
✓ 52.2 % are older than 45 Years
✓ 64.9 % cultivate less than 100 hectares

Cluster 2 (n=227) 42.6 %: Market liberal
✓ 39.4 arable farming; 27.0 % dairy farming; 29.8 % pork production
✓ Especially pork production
✓ Organic farmers 33.3 % (14)
✓ 58.8 % are older than 44 years
✓ 58.5 % cultivate more than 100 hectares

Cluster 3 (n=149) 28.0 %: Market oriented
✓ 47.5 % arable farming
✓ Especially fruit and vegetable production
✓ Organic farmers 4.8 % (2)
✓ 64.4 % are younger than 44 years
✓ 62.3 % cultivate more than 100 hectares

Cluster Analysis: Ward Algorithm, K-Means
Active Variables have a high degree of homogeneity, variance < 1
Active variables differ significantly
0.7975 eta coefficient displays a middle degree for differences between the clusters
63.55% of the variance of active variables could be explained

Discriminant analysis:
Wilks Lambda displays high significance for the model
98.3 % of grouped cases were classified correctly

Source: author's calculations
### Results

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Prices should be freely determined by the market.***</th>
<th>Pricing should be done by companies without political influence.***</th>
<th>I am able to produce at internationally competitive prices.***</th>
<th>Output prices may be below the cost of production for a short time.***</th>
</tr>
</thead>
<tbody>
<tr>
<td>State oriented</td>
<td>-0.03 (0.891)</td>
<td>0.24 (0.794)</td>
<td>-0.86 (0.909)</td>
<td>-0.60 (1.067)</td>
</tr>
<tr>
<td>Market liberal</td>
<td>0.99 (0.613)</td>
<td>0.88 (0.644)</td>
<td>-0.22 (0.900)</td>
<td>0.29 (0.932)</td>
</tr>
<tr>
<td>Market oriented</td>
<td>1.56 (0.619)</td>
<td>1.53 (0.514)</td>
<td>0.41 (0.854)</td>
<td>1.01 (0.858)</td>
</tr>
<tr>
<td>Total</td>
<td>0.85 (0.936)</td>
<td>0.87 (0.822)</td>
<td>-0.23 (1.010)</td>
<td>0.23 (1.132)</td>
</tr>
</tbody>
</table>

Source: authors calculations, M = mean, SD = standard deviation (in brackets); ***p ≤ 0.001, **p ≤ 0.01, ns = not significant; *p ≤ 0.05; Scale from +2 = totally agree to -2 = totally disagree
## Results

| Cluster                  | Agricultural markets have to be protected politically.*** | Guaranteed prices are a useful tool for farmers.*** | Production prices, which do not cover the production costs, should not be allowed.*** | Policy makers should build a safety net (guaranteed price) for farmers.*** | We as farmers can request that consumers pay enough money for our products that we are able to survive financially.*** | Subsidies for farmers make sense.*** |
|--------------------------|-----------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------|
| State oriented           | 0.82 (0.747)                                              | 0.48 (1.066)                                       | 0.87 (1.136)                                                                        | 0.80 (0.979)                                                                  | 1.43 (0.762)                                                        | 0.53 (0.924)                                                      |
| Market liberal           | 0.17 (0.803)                                              | -0.40 (0.889)                                     | -0.22 (1.087)                                                                     | -0.10 (0.907)                                                                | 0.93 (0.885)                                                      | 0.22 (0.866)                                                      |
| Market oriented          | -0.87 (0.824)                                             | -1.21 (0.660)                                     | -1.34 (0.694)                                                                     | -1.01 (0.810)                                                                 | 0.05 (1.293)                                                      | -0.44 (0.925)                                                     |
| Total                    | 0.07 (1.023)                                              | -0.37 (1.097)                                     | -0.21 (1.310)                                                                     | -0.09 (1.131)                                                                | 0.83 (1.117)                                                      | 0.13 (0.973)                                                      |

Source: authors calculations, M = mean, SD = standard deviation (in brackets); ***p ≤ 0.001, **p ≤ 0.01, ns = not significant; *p ≤ 0.05; Scale from +2 = totally agree to -2 = totally disagree

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Conclusions

- Up to now there has been little research on market orientation of farmers.
- First results show:
  - Differences between production sectors
  - Fruit and vegetable and arable farmers are more market oriented than dairy farmers.
  - For politicians and consultants this is an opportunity to influence dairy farmers to become more market oriented to cope with challenges in the CAP and the agricultural environment.
  - Especially dairy farmers have to change their point of view to deal with the markets and not to rely on the state and subsidies.
  - The results are not representative but give first indications for further research (measurement of MO, what influences the MO of farmers?).
Literature


Thank you for your attention!

Anneke Hellberg-Bahr
Georg-August-University Göttingen
Department for Agricultural Economics
Chair Marketing for Food and Agricultural Products
Platz der Göttinger Sieben 5, 37073 Göttingen
Fon: +49 (0) 551/394485
Mail: abahr@gwdg.de

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