The Persistence of Small Dairy Farms in Austria from an Economic Perspective

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Introduction

- Dairy farms in Austria are rather small
  - 64 tons of milk quote per farm in 2008
  - Half of the dairy farmers held less than 40 tons of milk quota
  - Definitely less milk cows than in many other EU-countries
- Smaller farms show higher production costs
- Conclusion: smaller farms are less competitive and quit farming in a liberalised environment
- Evidence: small dairy farms play still a dominant role

- Why do small farmers still milk their cows?
  - Explanations from theory and empirical data
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Proportion of dairy farms by size classes in tons of milk quota in 1995/96 and 2007/08

- Farms up to 40 tons
- Farms >40 - 100 tons
- Farms >100 tons

<table>
<thead>
<tr>
<th>Size Class</th>
<th>1995/96</th>
<th>2007/08</th>
</tr>
</thead>
<tbody>
<tr>
<td>All dairy farms</td>
<td>71.3%</td>
<td>47.1%</td>
</tr>
<tr>
<td>Farms up to 40 tons</td>
<td>71.3%</td>
<td>47.1%</td>
</tr>
<tr>
<td>Farms &gt;40 - 100 tons</td>
<td>25.3%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Farms &gt;100 tons</td>
<td>3.4%</td>
<td>19.0%</td>
</tr>
</tbody>
</table>

Mountain farms

- Farms up to 40 tons
- Farms >40 - 100 tons
- Farms >100 tons

<table>
<thead>
<tr>
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<th>2007/08</th>
</tr>
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<tbody>
<tr>
<td>Farms up to 40 tons</td>
<td>33.9%</td>
<td>47.1%</td>
</tr>
<tr>
<td>Farms &gt;40 - 100 tons</td>
<td>33.9%</td>
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</tr>
<tr>
<td>Farms &gt;100 tons</td>
<td>19.0%</td>
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</tr>
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</table>

Non-Mountain farms

- Farms up to 40 tons
- Farms >40 - 100 tons
- Farms >100 tons

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<td>19.0%</td>
</tr>
</tbody>
</table>
## Dairy farms 2007/08 by their change in milk quotas since 1995/96

<table>
<thead>
<tr>
<th>Change in milk quota</th>
<th>Dairy farms with</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;= 40t</td>
</tr>
<tr>
<td>Negative</td>
<td>24.2</td>
</tr>
<tr>
<td>0 to 25 percent</td>
<td>54.5</td>
</tr>
<tr>
<td>&gt;25 to 50 percent</td>
<td>10.5</td>
</tr>
<tr>
<td>&gt;50 to 100 percent</td>
<td>7.1</td>
</tr>
<tr>
<td>&gt;100 percent</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: Invekos-Data (own calculation)
"Long-run milk is produced in competitive farms"

Costs of production are often evaluated by production costs

- Small farms usually exhibit higher production costs due to high opportunity costs (mainly for labour)
- Analysis often use an uniform wage rate for a whole region
- Different employment opportunities of family labour should be evaluated critically

The role of the farm household

- Characteristics of small family farms
- Variable possibilities of income acquisition
- => Theory of the farm household
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Theory of the farm household

Source: according to Schmitt, Schulz-Greve und Lee 1996
Production costs and the role of individually assessed opportunity costs
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Costs of milk in dairy farms in Austria

![Bar chart showing costs of milk in dairy farms in Austria. The chart compares costs for farms with different numbers of cows (12, 22, 30, 25, 40, 40 cows) and shows the cost breakdown in Euros per kg ECM. The chart details include:
- Costs from P&L account - non milk returns
- Opportunity cost of labour
- Opportunity cost of land
- Opportunity cost of capital
- Opportunity cost of milk quota
- Milk price]
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Costs of milk as a function of labour hours

![Graph showing costs of milk as a function of labour hours for farms with 12 cows and organic farms with 22 cows.](image)

- **Farms with 12 cows**
  - 2550 h: Costs calculated with 12 Euro per hour.
  - 1700 h: Costs calculated with 12 Euro per hour.
  - 850 h: Costs calculated with 12 Euro per hour.

- **Organic farms with 22 cows**
  - 3380 h: Costs calculated with 12 Euro per hour.
  - 1700 h: Costs calculated with 12 Euro per hour.
  - 850 h: Costs calculated with 12 Euro per hour.

Key:
- **Costs from P&L account - non milk returns**
- **Opportunity cost**
- **Milk price**
Indicators of farms an households (farm-household model)
Income from Agriculture per labour unit

Source: FADN 2007 (own calculation)
Change in equity by farms sizes

Source: FADN 2007 (own calculation)

Net income of agriculture and forestry
Non agricultural income
Social transfers
Private consumption
Social insurance
Change in equity

Small farms
Average farms
Large farms

Source: FADN 2007 (own calculation)
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Share of farms exhibiting different levels of indicators by farm size

Cash Flow
Net Income agri/forestry
Change in Equity

- negative
- low
- average
- high

Proportion in %
Discussion and conclusion

- The bulk of dairy farms operate at a small scale (today and in future)
- One explanation is provided by the opportunity cost principle
  - The costs for own factor inputs might be overestimated
  - Individual opportunities must be assessed
- The role of the household
  - Contribution to the household income
  - Household income outcompete agricultural income
- The impact of non-economic aspects
Cows per Farm in the EU in 2008

Source: Green Report 2008