Background

- **CAP reform post 2015**
  - Internal convergence
  - Implemented at MS level
- **Scottish farm payment**
  - Historically based
  - Higher payments to more intensive farms than extensive
  - 4.6 m ha eligible land
New payment scheme

• 3 regions payment scheme
  – Three rates of payment
    • Region 1: arable land, temporary grassland and permanent grassland
    • Region 2: rough grazing land grade 1 & 2
    • Region 3: rough grazing grade 3
  – Voluntary coupled payments (Calf + Ewe payment)

Impact on farms

• Redistribution of payments
• >85% of land – LFA, majority of which are extensive farming systems
• Effect at farm level could be severe especially for intensive farms
• Dairy farms - among the most efficient and most profitable farms in Scotland
• Expected to loose out financially - how much? How they respond?
Scottish farm types

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## Rates of payment

*Payment rates under 3-Region Scottish payment scheme*

<table>
<thead>
<tr>
<th></th>
<th>BPS+Greening</th>
<th>calf VCS</th>
<th>Sheep VCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable land</td>
<td>220.00</td>
<td></td>
<td>0.00</td>
</tr>
<tr>
<td>Rough Grazing (1-2)</td>
<td>35.00</td>
<td>100.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Rough Grazing (3)</td>
<td>10.00</td>
<td></td>
<td>25.00</td>
</tr>
</tbody>
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Leads to financial pressure for majority of the Scottish dairy farms

BPS $\approx \£176/ha - \£100/ha
Data input

• Scottish Farm Accountancy Survey (FAS)
  – Dairy farms - 55 farms
• Physical data: land, animals, labour
• Production level: milk, crop, grass yields
• Management: feeding, land use, stocking rate
• Prices/costs
• Coefficients: LU, feed contents, labour requirements, feed requirements

ScotFarm – an integrated farm level model

• Linear programming – optimising profits
• Farm system analysis
  – Replicates farm activities
  – Financial and physical parameters
  – Decision makings
• Pseudo-dynamic
  – Runs over 15 year timeframe but results averaged out of middle 9 years
  – yearly runs with month as a subset
Modules

- Livestock module
- Crop module
  - Crop yield model
- Feed module
  - Feed requirement model
- Grass module
  - Grass yield model
- Price projections – FAPRI model

Livestock module
Feed module

- Feed considered
  - Fresh grass, grass silage, hay, maize silage
  - Whole crop grain, concentrate
- Feed – produced on farm/bought in
- Energy and protein content required for each feed

Feed requirement model

- Model is written in excel
- Based on feed requirement criteria set by Alderman and Cottrill (1993)
- Determines monthly requirement of energy, protein and feed intake per animal
- Considers species, age, production level of an individual animal
Feed module

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Crop module

Modules

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- Price projections – FAPRI model
FAPRI price projection

Results (farm margins)

Percentage difference in Farm Net Margin of 14 farm types under payment scenarios compared to the Baseline scenario
Farm responses

- No change in production level and animal numbers
- Slight adjustments to feed rationing – concentrate feeding lowered by up to 5% on some farms

Dairy farming considered most technically advanced sector in Scotland
Conclusions

- The majority of Scottish dairy farms loose out under the new BPS rates
- Coupling the calf and sheep payments had negligible impact on dairy farms
- Large farms are the biggest losers (reduction in margins by up to 30% - 55%)
- No significant adjustments on dairy farm – all of the farms maintain production level and animal numbers on farms
- Only slight change on feed rationing on some farms to adjust over all costs
- Negligible response to reduction in support payment suggests that these farms do not rely significantly on subsidy payments like other farm types and are efficient enough to maintain farming structure