Climate adjusted productivity on cropping farms

The slowdown and the rebound

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7 - 8 March 2017
Total Factor Productivity (TFP)
A ‘data-driven’ approach
Climate adjusted productivity

Index


TFP
Climate adjusted TFP
Climate effect
Climate effect (15 year av.)
Effect of climate on productivity since 2000-01
Climate adjusted wheat yields

<table>
<thead>
<tr>
<th>Year</th>
<th>Wheat yield</th>
<th>Climate adjusted yield</th>
<th>Climate effect</th>
<th>Climate effect (15 year av.)</th>
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</thead>
<tbody>
<tr>
<td>1977-78</td>
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ABARES 2016-17 wheat yield estimate
Farm sensitivity to climate

- TFP
- Climate adjusted TFP
- TFP in wet conditions
- TFP in dry conditions
Farm sensitivity to climate

% change


Average conditions  Wet year effect  Dry year effect
Change in ABARES farm sample, 2000s vs 1990s

Change in sample density
(farms per square km per year)

-100%  > 100%
Key points

- Cropping farm productivity ground to a halt in the mid 1990s
- Productivity has rebounded strongly over the last 10 years
- Climate change is affecting cropping farm productivity
- Farmers are adapting
Change in cropping area by region 2001 to 2011
Effect of climate on wheat yields – 2016-17

Projected climate effect on wheat yield 2016–17

-20 to -10%  -10 to -2%  2 to 10%  > 10%  -2 to 2%
Predicted wheat yields – 2016-17

Projected wheat yields
2016–17 (t/ha)
- < 1.5
- 1.5 – 2
- 2 – 2.5
- 2.5 – 3
- 3 – 3.5
- > 3.5