

# Technological and financial approaches to risk management in agriculture: an integrated approach\*

Robert G. Chambers, John Quiggin

First published: 18 June 2004

<https://doi.org/10.1111/j.1467-8489.2004.00250.x>

\* This research was supported by an Australian Research Council Federation Fellowship.

## Abstract

In the present paper, risk-management problems where farmers manage risk both through production decisions and through the use of market-based and informal risk-management mechanisms are considered. It is shown that many of these problems share a common structure, and that a unified and informative treatment of a broad spectrum of risk-management tools is possible within a cost-minimisation framework, under minimal conditions on their objective functions. Fundamental results are derived that apply regardless of the producer's preference towards risks, using only the no-arbitrage condition that agricultural producers never forego any opportunity to lower costs without lowering returns.

## References

Bardsley, P., Abey, A. and Davenport, S. 1984, 'The economics of insuring crops against drought', *Australian Journal of Agricultural Economics*, vol. 28, pp. 1-14.

[Web of Science®](#) | [Google Scholar](#)

Berge, C. 1963, *Topological Spaces*, Dover Publications, Mineola, New York.

This website utilizes technologies such as cookies to enable essential site functionality, as well as for analytics, personalization, and targeted advertising. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

Manage Preferences

Accept All

Reject Non-Essential

Chambers, R.G. and Quiggin, J. 2002a, 'Optimal producer behaviour in the presence of area-yield crop insurance', *American Journal of Agricultural Economics*, vol. 84, pp. 320-334.

[Web of Science®](#) | [Google Scholar](#)

Chambers, R.G. and Quiggin, J. 2002b, 'Resource allocation and asset pricing', working paper, University of Maryland, College Park, Maryland.

[Google Scholar](#)

Gollier, C. 2001, *The Economics of Risk and Time*, MIT Press, Cambridge, Massachusetts.

[Google Scholar](#)

Halcrow, H. 1949, 'Actuarial structures for crop insurance', *Journal of Farm Economics*, vol. 21, pp. 418-443.

[Web of Science®](#) | [Google Scholar](#)

Industries Assistance Commission 1978, *Report on Rural Income Fluctuations*, Australian Government Publishing Service, Canberra.

[Google Scholar](#)

Miranda, M.J. 1991, 'Area-yield crop insurance', *American Journal of Agricultural Economics*, vol. 73, pp. 233-242.

[Web of Science®](#) | [Google Scholar](#)

Newbery, D. and Stiglitz, J. 1981, *The Theory of Commodity Price Stabilisation: A Study in the Economics of Risk*, Oxford University Press, Oxford.

[Google Scholar](#)

Quiggin, I. 1986. 'A note on the viability of rainfall insurance'. *Australian Journal of Agricultural Economics*.

This website utilizes technologies such as cookies to enable essential site functionality, as well as for analytics, personalization, and targeted advertising. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

Manage Preferences

Accept All

Reject Non-Essential

Robinson, C., McMahon, P. and Quiggin, J. 1982, 'Labour supply and off-farm work by farm operators: theory and estimation', *Australian Journal of Agricultural Economics*, vol. 26, pp. 23-38.

[Web of Science®](#) | [Google Scholar](#)

Sandmo, A. 1971, 'On the theory of the competitive firm under price uncertainty', *American Economic Review*, vol. 61, pp. 65-73.

[Web of Science®](#) | [Google Scholar](#)

Citing Literature

[Download PDF](#)

ABOUT WILEY ONLINE LIBRARY

- Privacy Policy
- Terms of Use
- About Cookies
- Manage Cookies
- Accessibility
- Wiley Research DE&I Statement and Publishing Policies

HELP & SUPPORT

- Contact Us
- Training and Support
- DMCA & Reporting Piracy
- Sitemap

OPPORTUNITIES

- Subscription Agents

This website utilizes technologies such as cookies to enable essential site functionality, as well as for analytics, personalization, and targeted advertising. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

Manage Preferences

Accept All

Reject Non-Essential

This website utilizes technologies such as cookies to enable essential site functionality, as well as for analytics, personalization, and targeted advertising. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)



Manage Preferences

Accept All

Reject Non-Essential