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New Zealand Dairy Farmers and Risk: Perceptions of, Attitude to, Management of, Performance under – and combinations thereof

Professor Nicola Shadbolt
Femi Olubode-Awosola
James Lawn



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Volatility – a fact of life

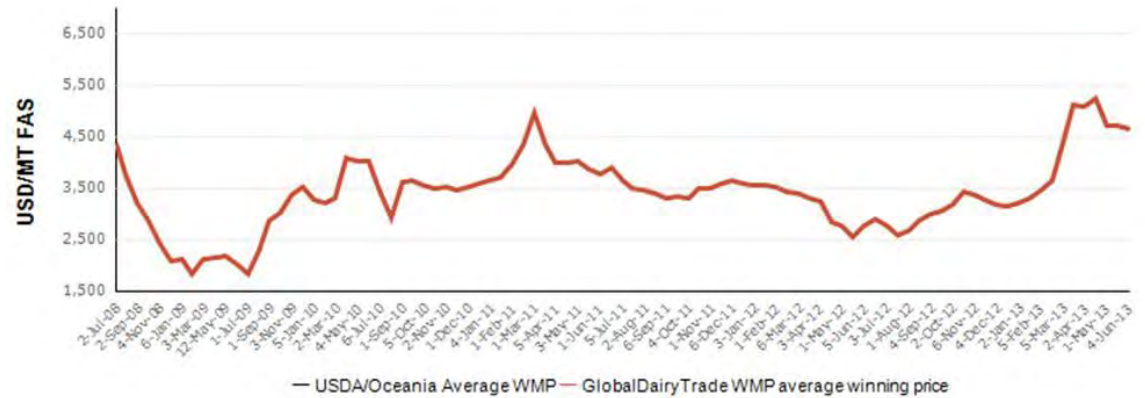
Costs

Price

Exchange rate

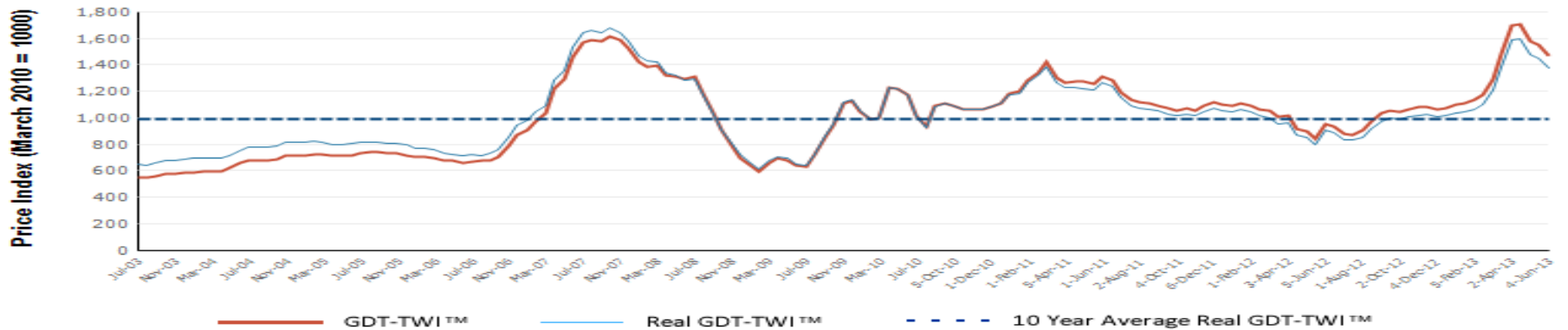
Climate

WMP Prices Past Five Years



Source: USDA International Dairy Market News, GlobalDairyTrade

GlobalDairyTrade Trade Weighted Index



Source: GlobalDairyTrade, Global Trade Atlas, USDA DMN, USDL BLS

Uncertainty provides both opportunities and threats for New Zealand dairy farms and often it is the capacity of the farm manager to interpret and respond to external (and internal) information that determines the extent of the advantage or disadvantage that is eventually realised.



There is a need to understand farmers' identification of the opportunities that uncertainty creates and how farmers adopt strategies that capture those opportunities as much as their identification of threats and necessary mitigation practices.

The aim of this research was to aid both farmer and industry understanding and prioritisation of risks and hence guide the risk management and mitigation strategies they adopt or promote.

Research Objectives

- To compare and contrast the attitudes to risk and perceptions of sources of risk that exist within the wider dairy farmer population, the risk management strategies they adopt, and their personal and demographic characteristics with previous studies.
- To explore any relationships between those perceptions, strategies and attitudes, the DairyBase[®] farm performance data, and other characteristics of farmers and farm businesses.
- To identify and analyse risk profile typologies among NZ dairy farmers (i.e., groupings of farmers with similar risk attitudes).

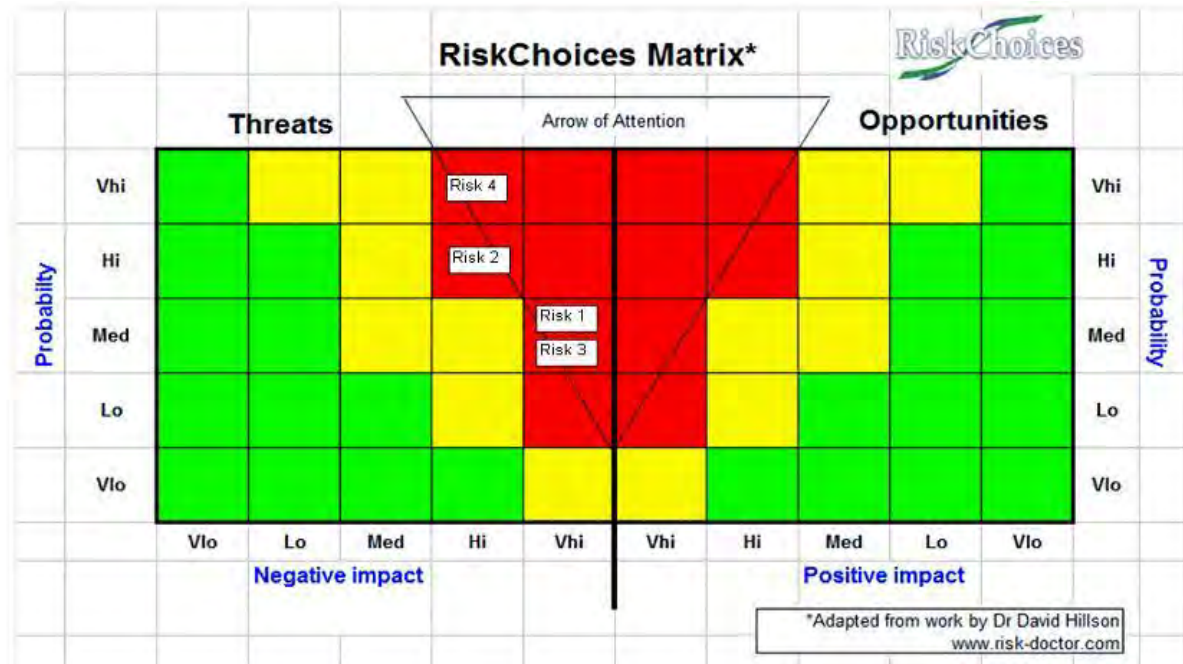
Method

Survey randomly selected group of farmers (257)

- assessed the potential for their businesses to benefit from a range of sources of uncertainty and stated what they believed was the likelihood of this opportunity arising.
- assessed the potential for their business to be disadvantaged from the same range of sources of uncertainty and state what they believed was the likelihood of this threat arising.
- self-assessment was carried out twice, once from a within season perspective and then again from a longer term (5-10 year) perspective
- assessed their attitude to planning, aptitude in decision making and degree of risk aversion.
- assessed the importance of specified risk management techniques and whether they did or did not use each one
- matched DairyBase[®] records to each farm, where possible

Method - analytics

Uncertainty scorecards – heat maps - Riskchoice matrix
 Risk importance index
 Risk management technique importance index.
 Typical risk profiles – based on the diversity and distribution of risk attitudes among the respondents



Attitude to risk

- Within a season I am able to manage almost all uncertainty that occurs
- Over the long term I am able to manage almost all uncertainty that occurs
- I find planning difficult because the future is so uncertain
- When there are a number of solutions to a problem, I find it difficult to make a choice
- When it comes to business, I like to play it safe

Perceptions of Risk

Climate variation

Pasture/crop/animal health

Interest rates

Land values

Product prices

Input prices and availability

Availability of labour (self and family, employees, contractors)

Skills and knowledge of those associated with the business

Technological changes

Business relationships (within supply chain)

Dairy industry structure

The global economic and political situation

Global supply and demand for food

Global competitors & competition

Reputation and image

Government laws and policies

Local body laws and regulations

Risk Management Strategies

- Having more than one type of animal or other enterprises on your property
- Maintaining feed reserves
- Not producing to full capacity so there are reserves in the system
- Having short term flexibility to adjust quickly to weather, price and other factors
- Monitoring programme
- Routine spraying or drenching
- Irrigation
- Spreading sales
- Geographic diversity through having properties in different area
- Using futures markets
- Forward contracting
- Gathering market information
- Arranging overdraft reserves
- Maintaining financial reserves: having cash and easily converted financial assets
- Main farm operator or family working off property
- Managing debt
- Keeping debt low
- Having long term flexibility
- Planning of capital spending
- Having personal and/or business insurance
- Using practical planning steps in your business
- Assessing strengths, weaknesses, threats and opportunities
- Having a clear and shared vision or strategic purpose for your operation
- Using financial ratios for decision making

Results - glass half-full farmers

- More years of experience, older, had fewer staff and higher family input in the business than the earlier study
- There were more owner operators and fewer multiple operations with more consolidating their business and fewer in the growth stage.
- More typical of the average demographics of dairy farmers in New Zealand in previous surveys (Martin 1994; Pinochet-Chateau et al 2005)
- Arrow of Attention provides visual identification of the need to plan strategically to both mitigate the likely negative impact of uncertainty and take advantage of perceived uncertainties.

		Threats			Arrow of Attention				Opportunities					
Likelihood	Almost certain												Almost certain	Likelihood
	Likely				1			A	C	E			Likely	
	Possible		4	3	2			B	D				Possible	
	Unlikely												Unlikely	
	Rare												Rare	
		Very low	Low	Medium	High	Very High	Very High	High	Medium	Low	Very low			
		Negative impact					Positive impact							

Opportunities to benefit from:

- A Product prices, technological changes, global supply and demand for food
- B Skills and knowledge of those associated with the business; Reputation & image
- C The global economic and political situation
- D Climate variation; pasture/crop/animal health; interest rates; land values; input prices and availability; labour availability; Business relationships (within supply chain); Dairy industry structure; Global competitors & competition; Government laws and policies
- E Local body laws and regulations.

		Threats			Arrow of Attention			Opportunities					
Likelihood	Almost certain											Almost certain	Likelihood
	Likely				1			A	C	E		Likely	
	Possible	4	3	2				B	D			Possible	
	Unlikely											Unlikely	
	Rare											Rare	
		Very low	Low	Medium	High	Very High	Very High	High	Medium	Low	Very low		
		Negative impact					Positive impact						

Threats to lose from:

- 1 Input prices and availability, local body laws and regulations
- 2 The global economic and political situation; Government laws and policies
- 3 Climate variation; pasture/crop/animal health; interest rates; labour skills; Business relationships (within supply chain); dairy industry structure; land values; product prices; Global competitors & competition; Reputation & image
- 4 Technological changes, global supply and demand for food.

Results – risk management techniques

As with previous surveys **most important** were:
maintaining feed reserves, having short term
flexibility, managing debt, planning the timing of
capital expenditure, insurance, and a range of
business planning techniques

Additional techniques include:

monitoring programmes, having long-term
flexibility, and using financial ratios for decision
making

As with previous surveys **least important** were:
diversification, not producing to full capacity,
keeping debt low, and the farmer/family working
off the property to add to farm income

Results – risk
management
strategy
importance
index

Ranked according to the importance the farmers place on them and which they make most use of, they include:

1. Managing debt
2. Planning of capital spending
3. Using practical planning steps in your business
4. Having a clear and shared vision or strategic purpose for your operation
5. Maintaining feed reserves
6. Having short term flexibility to adjust quickly to weather, price and other factors
7. Having long-term flexibility
8. Monitoring programme
9. Having personal and/or business insurance
10. Assessing strengths, weaknesses, opportunities and threats

Results –
combinations
thereof

What relationships exist between perceptions of, attitudes to, management of and performance under risk?

Perceptions (+ve/-ve) of and attitudes to

No relationship found long term or within season

Attitudes to and management of

Two risk management strategies relate to attitude

Attitudes to and performance under

A number of KPIs relate to attitude to risk

Perceptions (+ve/-ve) of and performance under

Just one relationship between short term perceptions but many for long-term relationships and KPIs

Management of and performance under

A number of relationships were found here

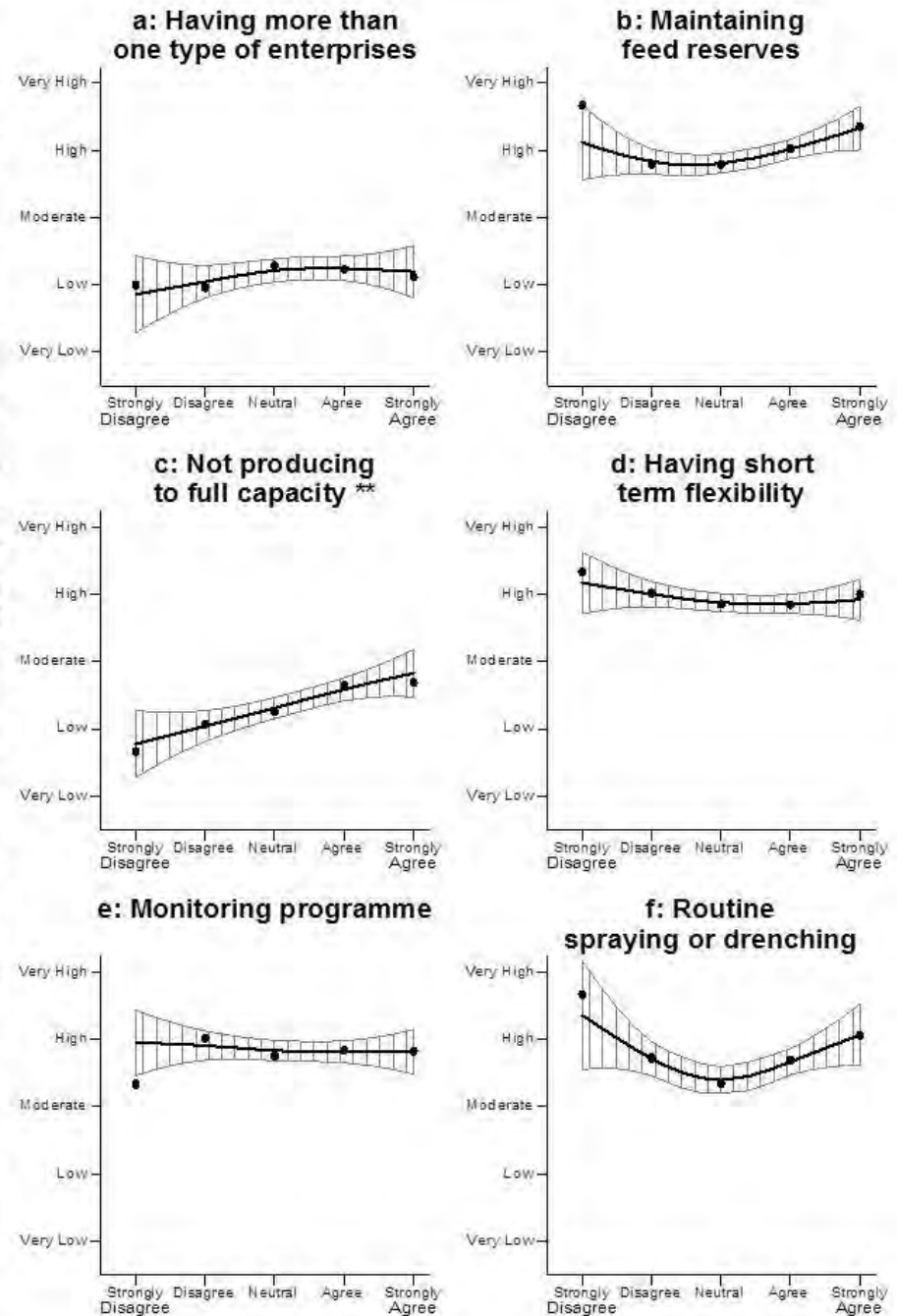


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Results – Attitudes to and management of

Playing it safe :
not producing to
full capacity

Risk Management Strategy (Importance Score)



Risk Attitude (Play it Safe)

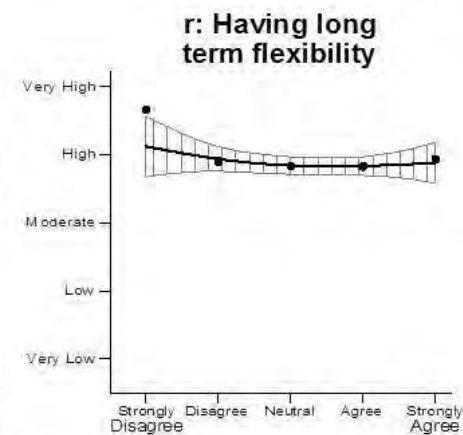
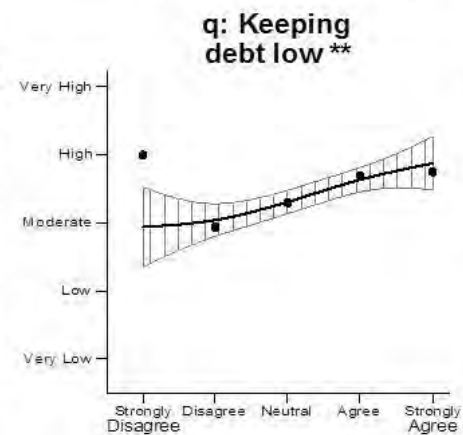
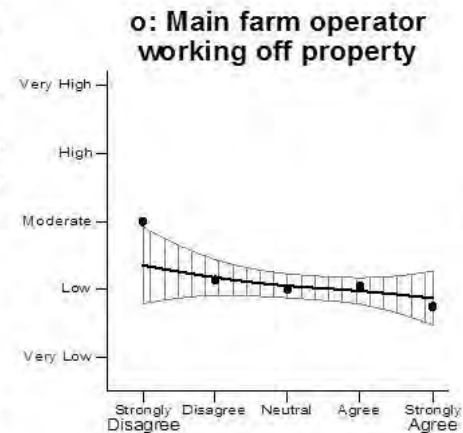
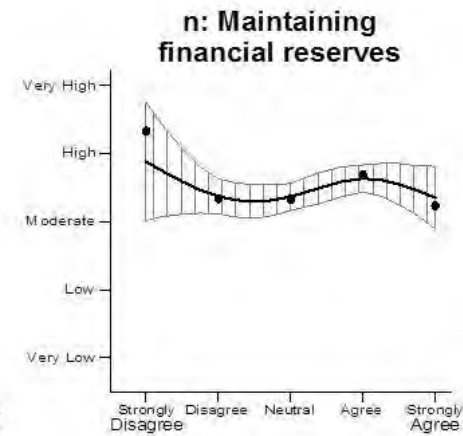
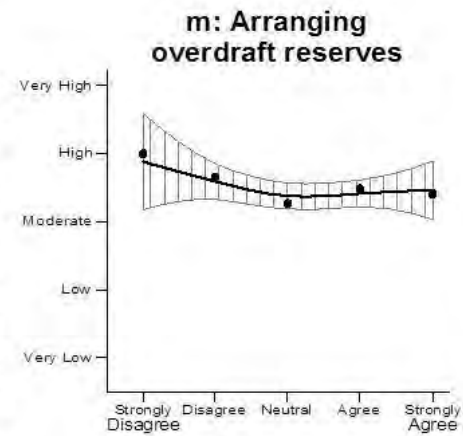


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Results – Attitudes to and management of

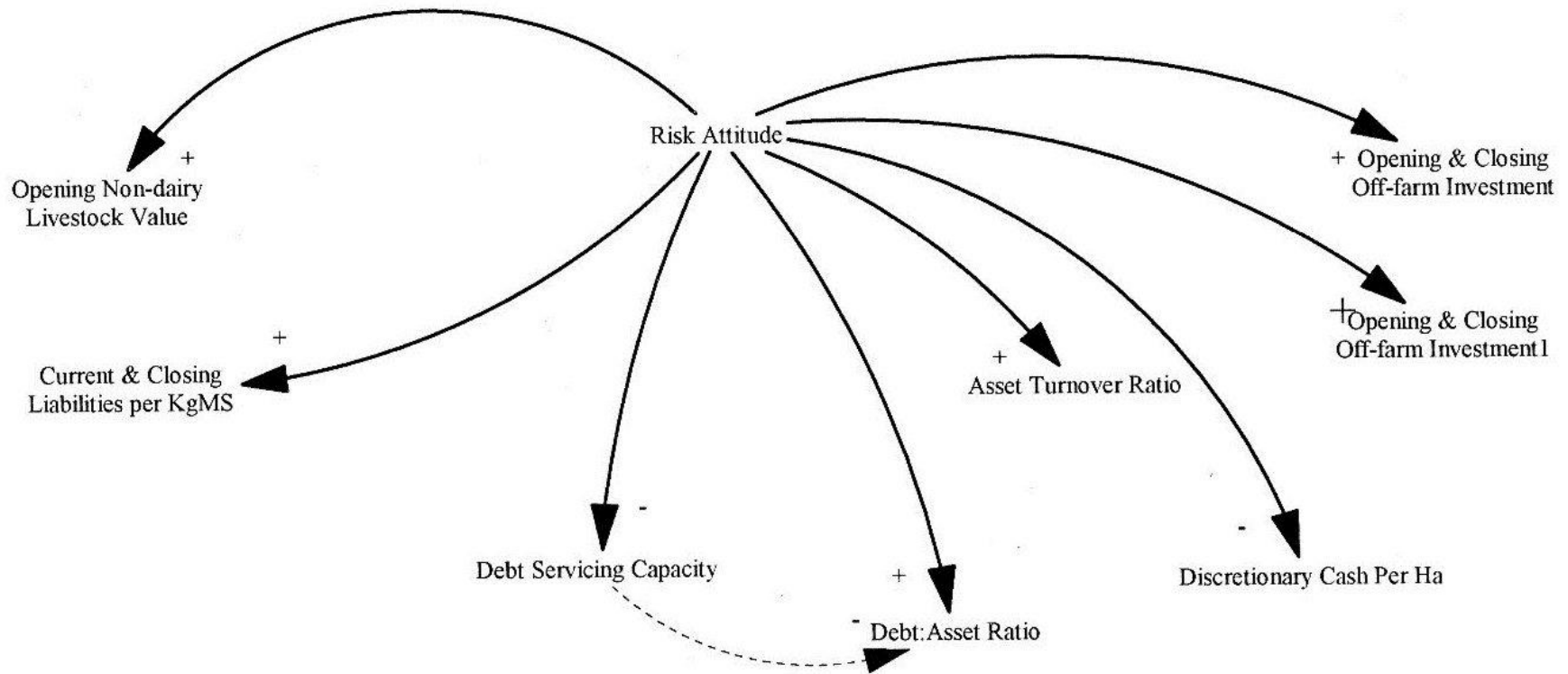
Playing it safe :
keeping debt
low

Risk Management Strategy (Importance Score)

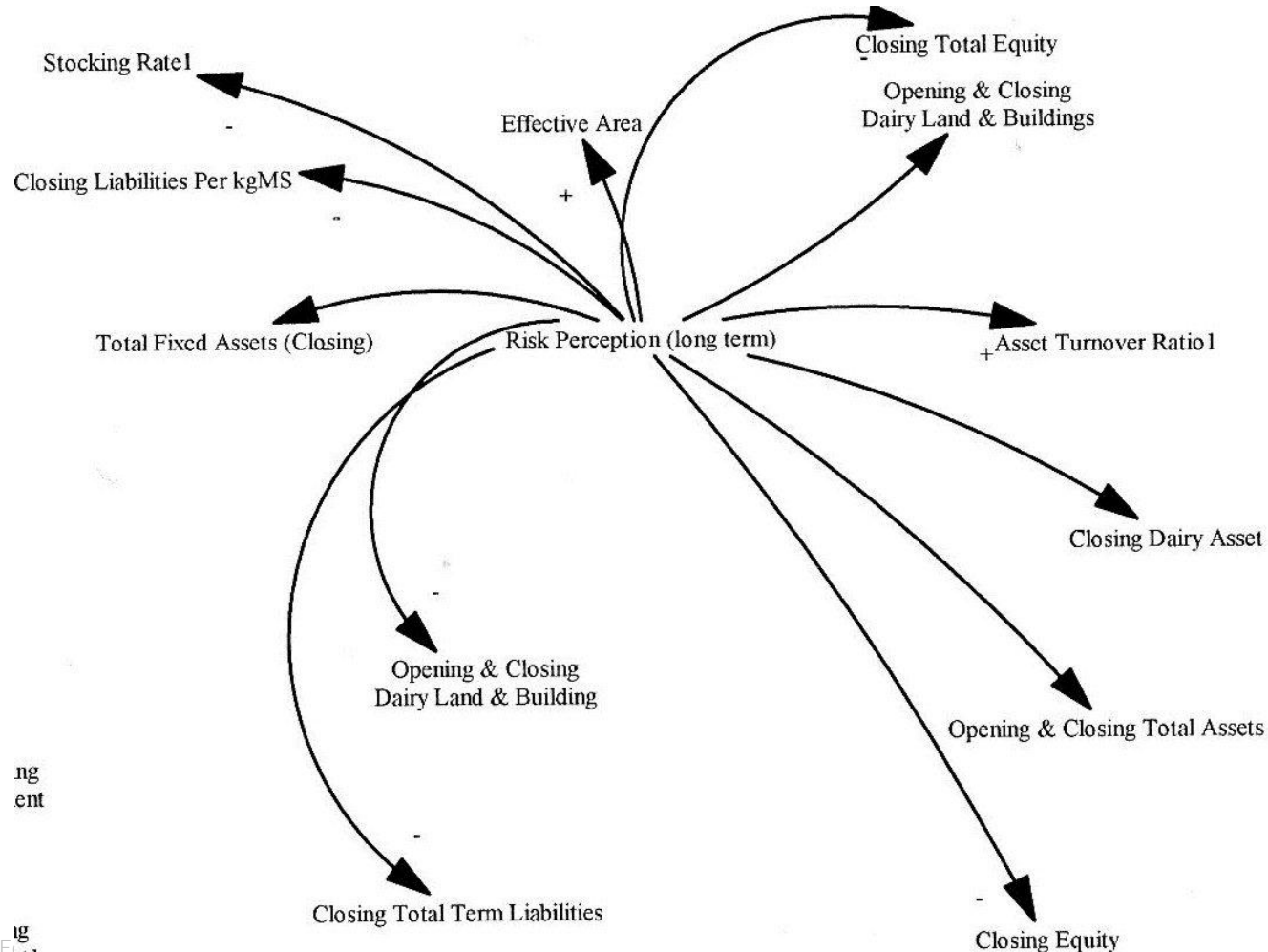


Risk Attitude (Play it Safe)

Results – Attitudes to and performance under The risk seeker attributes...



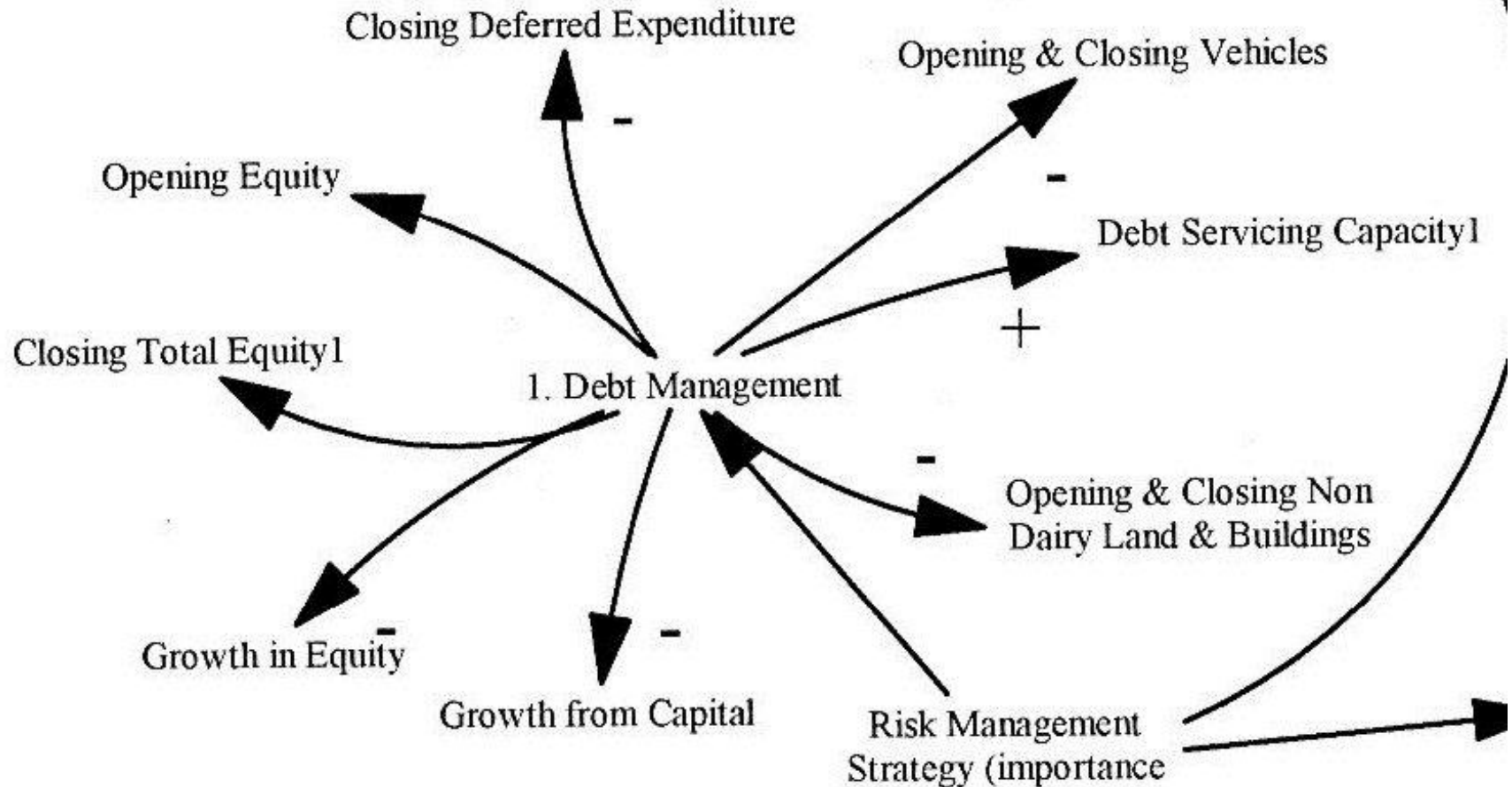
Results –perceptions of (long term) and performance under The positive perception attributes...



ng
ent

ig
at1

Results –management of and performance under The ‘debt management is less important’ attributes...



Three Risk Manager typologies based on attitude to risk

<u>Within a season I am able to manage almost all uncertainty that occurs</u>	<u>Over the long term I am able to manage almost all uncertainty that occurs</u>	I find future planning difficult because the future is so uncertain	When there are a number of solutions to a problem, I find it difficult to make a choice	When it comes to business, I like to play it safe	Typology
Able	Able	Don't	Don't	Don't	Entrepreneurs
Able	Neutral	Do	Don't	Neutral	'Here and now' conservative
Able	Able	Don't	Don't	Neutral	Competent conservative

Conclusions

The perceptions of risk both with respect to time horizon and whether the risk created opportunities or threats to their business identified there were more opportunities created by uncertainty within a season than threats, with more balance long term

The relationships between attitude to, perceptions of, management of and performance under risk revealed interesting connections with respect to farmer propensity and ability to see risk as an opportunity and to turn that into superior performance.

The uncertainties of the business world provide as much opportunity **for success as threat of failure. As such, when assessing farmers'** risk perceptions enquire about both the positive and the negative implications from each source of uncertainty and then help them determine risk management strategies that capture opportunities or mitigate threats.

Dairy farmers in New Zealand will assess the sources of uncertainty facing them, identify both opportunities to exploit and hazards to minimise, and respond as they see fit. This research aims to assist them in this task.



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Thank you

