



Farmer Responses to Brexit: Attitudes towards Risk in Scottish Farming – Briefing Note

Authors

Andrew Barnes^{*1}, Jenny MacMillan¹, Steven Thomson¹, Michael Spencer¹, Jon Hopkins², Lee-Ann Sutherland², Keith Mathews³

Summary

The UK's withdrawal from the European Union presents multiple uncertainties for farm management planning. Encouraging growth within the agricultural economy requires some acceptance of risk within farming decision making. This briefing note outlines the results of a survey of 2,494 farmers, crofters and smallholders, run during the summer of 2018, on their approaches towards farming and how this may affect business planning post-Brexit.

We find three categories of farmers based on their risk perceptions. Risk averse farmers (39%), risk taking farmers (17%), and risk cautious farmers (44%). Risk taking farmers appear to be more likely to have increased their intensity of production and their level of diversification. In addition they are more likely to have invested in new technologies and new capital. On more environmental led approaches, the differences are less extreme, especially in aspects around woodland expansion which may indicate different motivations towards public good activities. There is a fairly even spread of risk perceptions across farming types, with risk takers more likely to emerge from very large farms, and risk averse farmers from very small farms. Older farmers are more risk averse, and a higher proportion of risk cautious and risk takers are under 45. Only a slightly higher proportion of new entrants are risk takers compared to established farmers.

Understanding risk perception is crucial as support systems may change. Risk taking activity can lead to higher levels of investment and therefore increasing on farm efficiencies. On more greener activities there is less evidence. However, whilst risk taking may lead to more sustainable growth, the high level of debt within Scottish farming may support more risk cautious approaches to investment. Nevertheless, supporting farmers away from risk averse behaviours (which compose 39% of the sample) should be encouraged.

¹ Department of Rural Economy, Environment and Society, SRUC, West Mains Road, Edinburgh, UK

² Social, Economic and Geographical Sciences Group, James Hutton Institute, Aberdeen, UK

³ Information and Computational Sciences Group, James Hutton Institute, Aberdeen, UK

1.0 Introduction

Farmer attitudes to risk are particularly pertinent to policy makers who seek to promote recovery from shocks and sustainable growth. The literature has tended to find farmers to be risk averse, which limits investment and entrepreneurial behaviours. However, this general view across a population does not hold considering the pockets of innovation observed within particular sectors, e.g. horticulture. Given the policy uncertainty around Brexit and the desire to improve productivity in Scottish agriculture, this brief reports on a survey of farmers conducted in 2018 to examine, amongst others, their risk attitudes and how this affects business decision-making.

2.0 Method

A telephone-based survey of Scottish farmers, crofters and smallholders was conducted over the summer of 2018. A spatially representative sample of 11,000 businesses was selected using information from the Scottish Government's June Agricultural Census (JAC) stratified by region, business size and farm type. For a large scale survey such as this, the JAC sampling framework is the most appropriate as it gives national level coverage and detailed information on agricultural activity, and it means that background information requirements are minimised. As the JAC reports at an agricultural holding level the data was aggregated (where appropriate) to business level¹ in order to ensure the sampling framework was as representative of Scottish agriculture as possible. A total of 2,494 farmers, crofters and smallholders engaged with the survey, 24 per cent of whom were female.

A parsimonious approach which allows us to understand the current decision-making landscape is typology analysis. This classifies farmers according to the motivations or attitudes to particularly pertinent issues. An approach known as Latent Class Analysis was used to classify these farmers based on 4 attitudinal statements on their risk perceptions (see Figure 1). This is a statistical approach which helps to identify the correct number of classes from the data. The analysis found three categories of risk perception

3.0 Results

SRUC defined the risk categories based on responses to the following statements:

- *Usually I don't take long to make up my mind on investment matters*
- *I'm willing to take substantial investment risks to earn substantial returns*
- *I intend to seek more information on insurance for my agricultural enterprises*
- *I seek to collaborate with other farmers to manage business risk*

Figure 1 shows the three classes of risk perception and their level of agreement with the statements used to determine these classes. Essentially these show the following

- Risk taking farmers were willing to take substantial investment risks and tend to take less time in making up their minds to invest
- Risk cautious farmers² mostly seek information around investments and they tend to take longer to consider investments and seek safety nets, such as insurance, to support their business decisions. Hence, whilst they do undertake investments they seek support for the decision
- Risk averse farmers were the least likely to take risks for investments and limited their opportunities for risk taking

¹ A farm or croft business may be made up of multiple agricultural holdings

² These are similar to risk neutral farmers found in the literature, but it is worth emphasising that this group are willing to invest but need to consider the consequences before they invest

Figure 1. Level of agreement with 4 risk related statements across the 3 identified categories, percentage response per statement for each category

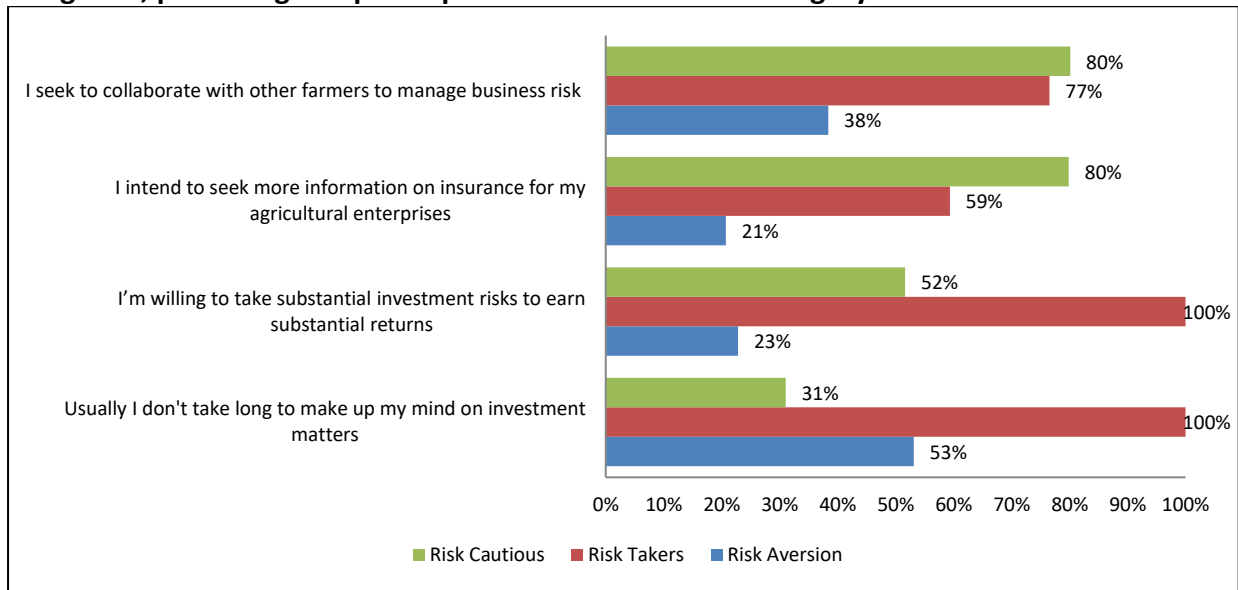
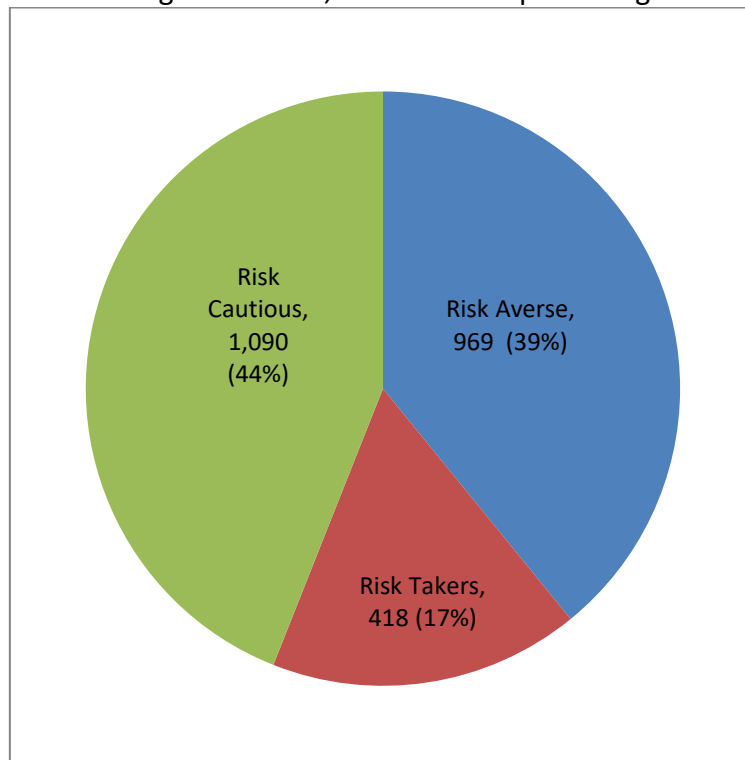


Figure 2 shows the overall distribution within the sample and this tends to agree with past studies that farmers are less likely to take risks and are more averse or cautious towards investment.

Figure 2. Distribution of categories of risk, numbers and percentage of survey



The risk taking farmers compose only 17% of the sample, whereas risk aversion and risk caution make up the bulk of the remainder.

3.1. Risk Behaviours and on-farm activities

The table below shows a set of on-farm activities that farmers have increased activity over a 5-year period (2013-2018). These are split across our risk classification and indicates whether there are significant differences between the types. In some areas significantly higher proportions of risk takers are increasing their on-farm activities. Notably, risk takers are more likely to have increased their intensity of production, the level of employed labour, the level of diversification and renewable energy. Moreover, they are more likely to have invested in new technologies and new capital. On more environmental led approaches, the differences are less extreme, especially in aspects around woodland and forestry which may indicate different motivates towards more public good activities.

Table 1. Farmers who have increased the level of their on-farm activity over a 5 year period by risk classification, row percentages

	Risk Aversion	Risk Takers	Risk Cautious	Sig. Different
Intensity of Production	19%	31%	26%	***
Employed Labour	9%	18%	9%	***
Amount of land let out	4%	6%	5%	
Amount of land let in	9%	19%	17%	***
Level of diversification	17%	29%	20%	***
Level of renewable energy	17%	30%	19%	***
Amount of tourism	11%	14%	11%	
New investment in technologies	25%	45%	33%	***
Level of capital investment	31%	51%	38%	***
Amount of forestry area	7%	11%	7%	**
Amount of small-scale woodland	7%	10%	7%	
Amount of agri-environmental scheme activity	16%	25%	21%	***

* significantly different at 0.05; ** significantly different at 0.01; *** significantly different at 0.001

3.2 Characteristics of Planning Responses

The table below shows the distribution of farm and farmer characteristics across the three risk classifications. These are presented as percentages per row to highlight the differences between the categories and whether these are significantly different. In summary these show:

- There is a fairly even spread across systems, though a high proportion of mixed farms are categorised as risk averse. Risk takers are evenly spread across farming systems
- Risk cautious farmers are less likely to have a college or university education, compared to the risk averse or risk takers
- Risk taking farmers mostly operate very large farm sizes, with half of very small farms operated by risk averse farmers
- Older farmers are risk averse, and risk cautious and risk taking farmers are mostly younger.
- Those receiving no subsidy are mostly risk averse. The majority of farmers who receive subsidy are either risk averse or risk cautious.

- A slightly higher proportion of risk takers (25%) are receiving subsidy, compared to those not receiving subsidy (20%).
- A slightly higher proportion of new entrants are risk takers compared to established farmers.
- Factors which seem to have no effect on risk perceptions include LFA designation, the agricultural region or whether they are crofters.

Table 2. General characteristics of the response across the 3 risk types, row percentages and significance

		n	Risk Aversion	Risk Takers	Risk Cautious	Sig. Different
System	Arable	442	37%	26%	37%	
	Livestock	1664	37%	23%	40%	
	Mixed	387	42%	26%	32%	*
Education	School Only	882	38%	22%	40%	
	College	907	34%	24%	42%	
	University	704	42%	27%	31%	***
Size	Very Small	735	48%	18%	33%	
	Small	388	35%	20%	45%	
	Medium	244	37%	23%	40%	
	Large	466	31%	25%	44%	
	Very Large	660	32%	33%	34%	***
LFA status	LFA	1775	39%	23%	38%	
	Non-LFA	718	34%	26%	39%	
Gender	Female	613	45%	19%	36%	
	Male	1859	35%	26%	39%	
Age	<45	336	23%	31%	46%	
	45-64	1341	38%	24%	38%	
	>65	816	43%	22%	35%	***
Tenure	Owned	1594	39%	24%	37%	
	Tenant	433	31%	27%	42%	
	Mixed	466	39%	21%	39%	
Croft	Not Croft	2171	37%	25%	38%	
	Croft	322	40%	20%	40%	
Subsidy	Receive subsidy	2041	35%	25%	40%	
	No Subsidy	424	51%	20%	29%	***
Entrant	Established	2293	38%	24%	38%	
	New Entrant	200	30%	27%	44%	*
Region	Eastern Scotland	481	38%	26%	36%	
	Highlands & Islands	888	39%	22%	39%	
	North East Scotland	314	36%	25%	38%	
	Southern & West					
	Scotland	810	37%	25%	39%	

* significantly different at 0.05; ** significantly different at 0.01; *** significantly different at 0.001

4.0 Summary

- Understanding risk perception is crucial to targeting measures which encourage productivity and resilience within Scottish farming.
- Risk taking activity can lead to higher levels of investment and therefore increase on farm efficiencies.
- Risk taking farmers are more willing to invest in renewables compared to other groups, but the evidence is more diffuse for woodland expansion.
- However, the current high level of debt within Scottish farming may lead to targeting information to these farmers to allow more considered investments.
- Nevertheless, to meet future policy goals, encouraging farmers to be less risk averse (which makes up 39% of the sample) should be a focus of future intervention.

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For further details please contact:

Andrew Barnes 

☎: +44(0)131 535 4042

✉: andrew.barnes@sruc.ac.uk

or

Jenny MacMillan 

☎: +44(0)131 535 4189



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