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Small towns and agriculture: Understanding the spatial pattern of farm linkages

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Abstract

Agricultural policy and farm lobby groups often stress the role of farm production in sustaining local economies. This paper considers the spatial pattern of upstream and downstream agricultural transactions of farms in North East Scotland and, in particular, the extent to which they take place within the locality of the farm holding. Three alternative definitions of “local” are considered: a distance based measure; a measure which takes into account the location of the farm in relation to the nearest town; and finally a new measure which takes into account the location of agribusinesses and defining a transaction as local if the farmer buys from (sells to) the nearest available input supplier (output purchaser). The results highlight the importance of allowing for context when explaining farmer purchasing and sales decisions with the final measure indicating a far higher proportion of local transactions as compared to the two other, more commonly-utilised, measures. However they also reveal a highly complex pattern of production-related linkages in the region with many farmers choosing to bypass their most proximate agribusinesses. Certain towns are found to dominate agriculture-related transactions in the region reflecting the spatial concentration of upstream and downstream agribusinesses. The findings provide new insights into theoretical debates on the role of small towns in the urban system and changing the changing importance of geographical distance in determining business transactions.

Keywords local transactions, spatial networks, small towns, farming, agribusiness

JEL codes R12, Q12, Q13.

1. Introduction

Farms and farm households contribute to local economies in multiple ways. Apart from the business transactions associated with agricultural production, farm businesses may have non-agricultural enterprises giving rise to other business-related transactions, members of farm households may undertake off-farm work, and farm household consumption expenditure in the local economy. However the discourse of both farmer lobby groups and EU communications on the Common Agricultural Policy (CAP) tends to stress the importance of production-related links in maintaining local economies (see, for example, National Farmers Union of Scotland, 2009; European Commission, 2010). This contrasts with the more urban dominated perspective on rural development epitomised by the European Spatial Development Perspective adopted in 1999, which reflects an understanding of rural areas as increasingly spaces of consumption and leisure by the new (urban) middle class (Hadjimichalis, 2003), rather than spaces of industry and production.

There is a substantial body of rural sociology literature concerned with farm households and local economic development. This stems largely from Goldschmidt's hypothesis on the socially detrimental effects of large scale farms and industrial agriculture (Goldschmidt, 1978; Hoggart, 1987; Lobao and Stofferahn, 2008). Far less work has been done by economists on the local economic impact of agriculture. Instead, research has tended to focus on the "rural" as opposed to "local" economic impacts of farm household transactions and is based on multiplier or general equilibrium models (Kilkenny, 1993; Midmore and Harrison-Mayfield, 1996; Psaltopoulos et al., 2006). Apart from the issue of geographic scale, such models are aspatial with even the bi-regional rural-urban models treating each sub-area as point economies. As a consequence, they fail to provide any indication of the spatial distribution of impacts within the area they are studying.

Those studies which have focussed at the local level have, arguably, failed to give sufficient attention to how local context influences farmer behaviour. Purchasing and sales patterns have been explained by farm characteristics (farm type, size and distance to urban settlements) and farmer and farm household characteristics (demographic profile, engagement in off farm work, community attachment) (see, for example, Lobley et al., 2010; Lawrence et al., 1997; Harrison 1993). However, a farmer can only buy inputs and sell output locally if local input sellers and output purchasers exist and are competitive, yet previous analyses have paid little or no attention to the structure of the agribusiness sector in the area.

Given the significant market concentration of upstream and downstream sectors in recent years (Busch and Bain, 2004) this issue is of growing relevance.

Against this background, this paper considers the spatial distribution of direct or “first-stage” farm business transactions of a sample of 224 farmers in North East Scotland. Building on a critique of previous studies, empirical analysis compares the findings from three alternative definitions of a “local” transaction: A simple distance-based measure; a measure which takes into account the distance of the farm to the nearest settlement of a certain minimum population; and a measure which takes into account the location of the nearest input suppliers/output purchasers.

The results show a highly complex pattern of farm production-related linkages in the region. The proportion of farmers dealing with their nearest input supplier or output purchaser is far higher than would be anticipated from the simple distance based measures of local integration. Consistent with Pritchard et al.’s findings on farm-small town relations in rural Australia, the results suggest there are more localised preferences for the most frequently occurring input transactions (Pritchard et al., 2012). However, a significant proportion of farmers chose to bypass their most local input-suppliers and output purchasers. The simpler definitions of a local transaction mask these complex patterns. Further, location analysis shows that certain towns in the case study region dominate agriculture related transactions, reflecting a long term trend of market concentration in upstream and downstream sectors.

The findings provide new insights into theoretical debates on urban-rural relations and changing the changing importance of geographical distance in determining business transactions (Copus, 2013; Dubois, et al., 2011). More broadly they support Mayer and Knox’s call for further analysis of the sustainability of small towns within the broader urban system in the context of globalization (Mayer and Knox, 2010).

The remainder of the paper is structured as follows. Section 2 reviews relevant background literature. Section 3 gives a brief introduction to the study area and the characteristics of the sample. The results are presented in Section 4. Finally, Section 5 concludes with a discussion of the implications for conceptualising the local economy in rural contexts, the policy implications of the findings, and areas for further research.

2. Background Literature and research methods

Perhaps the most well-known study of the spatial distribution of first-stage agricultural linkages within the UK was conducted by Harrison (1993). Harrison used the postcode origin (destination) of farm invoices (receipts) of a sample of farms in the Reading Farm Business Survey to assess the distance over which transactions took place and classified each source/destination as either rural or urban. Amongst other findings, the mean value of transactions was found to increase with distance from the farm and farm size while smaller farms were found to have more transactions with rural-based businesses. More recently, Lobley et al. (2009) adapted Harrison's approach to consider differences in the direct or "first stage" transactions of organic and non-organic farms in England. Based on survey data, transactions were classified according to whether they occurred within a set distance from the farm (10 miles) or, for those beyond this distance, according to administrative boundaries of ascending scale. While both studies provide useful new insights into the nature of farm business transactions, they fail to take into account local context. For example, the shorter transaction distance of small farmers found by Harrison (1993) may be due to a denser network of input suppliers and output buyers in localities where small farms predominate. Similarly, the lack of difference found by Lobley et al. (2009) between organic and non-organic businesses may be because the distance they adopt to define a local transaction is too small to capture differences in the distribution of agribusinesses used by the two farm types.

Within a US context, the USDA's Agricultural Resource Management Survey (ARMS) requires respondents to reveal the distance over which particular transactions occur as well as the distance of the farm holding to the nearest town of 10,000 people or more. As a consequence the USDA regularly report on the extent of farm household integration with local economies with transactions within the market reach of the nearest town being defined as local while transactions made beyond the distance to the town are classified as non-local. Findings suggest that the pattern of linkages (in terms of local and non-local transactions) vary by farm size, type and ownership structure of the farm business (USDA, 2008). In particular, large farms tend to have their strongest relationships with local communities through their production activities while small household enterprises have strongest ties through farm-related activities and off-farm businesses and employment. This approach to measuring local integration avoids the (arbitrary) choice of a single distance to define a local transaction regardless of geographic context, but again fails to take into account the structure of the agribusiness sector. Indeed, the distance and ARMS approaches will produce very

similar results in situations where the economic geography (in terms of distance between conurbations) coincides with the choice of distance used to categorise local transactions.

Clearly, it is not just the existence or otherwise of local agribusinesses which will affect the pattern of farm-related transactions but also their relative competitiveness. Lawrence et al.'s study of the purchasing pattern of hog producers in the 1990s showed that those most likely to bypass a local input supplier had large scale operations, higher levels of education, and fewer years of experience (Lawrence et al., 1997). However, the authors also found that producers of all sizes indicated a willingness to purchase inputs over considerable distances if price or non-price attributes were sufficiently attractive.

Building on this, Folz and Zeuli (2005) showed how local context as well as demand side factors influence farm input-purchasing patterns of dairy farmers in Wisconsin. Their findings suggested that purchasing patterns vary by type of input but, contrary to expectations are not systematically determined by particular farm or farmer characteristics. Rather the authors highlighted the importance of allowing for community characteristics (including the diversity of market outlets) in explaining farmer purchasing behaviour.

The issue of context is particularly important given changes in the nature of both the upstream and downstream agribusiness sectors. In particular, globalisation and integration processes have changed the structure and the interrelationships in the agri-food chain, creating a new economic environment for production agriculture (Busch and Bain, 2004). Upstream, the supply chain has been affected by the movement away from production growth and increase in environmental concern, the latter affecting the range of farm inputs that can be offered. The result has been vertical integration as well as greater horizontal integration across businesses (Bijman and Joly, 2001). Downstream, the market for agricultural output has been substantially internationalised as a consequence of successive agreements on tariffs and trade, but also as a result of new food manufacturing technologies and changes in long distance transportation (Nadvi, 2004; Henson and Reardon, 2005). The consequence has been an increase in both vertical and horizontal integration to mirror that occurring upstream in the agri-food chain.

Such market consolidation has a spatial dimension globally but also at the local level. In particular, in many regions the choice of farm input suppliers and output purchasers will have declined as outlets and distributors undergo an allied consolidation process. Concomitantly

the extent to which farmers have opportunities to undertake transactions with businesses based within their immediate local economy will have declined.

From the above, a key methodological issue which emerges is how to define a “local” farm transaction while allowing for the structural characteristics of the region and, in particular, the structure of the upstream and downstream agribusiness sectors. This paper builds on previous analyses, by comparing and contrasting findings based on three alternative measures:

- 1) A simple distance-based measure where a transaction is defined as local if it occurs within 10 miles of the location of the holding. This is the approach taken by Lobley et al. (2009).
- 2) A relative measure of “local” which takes into account the location of the farm and the location of the nearest town with a minimum population of 3,000. A transaction is defined as local if it occurs at or within the distance of the nearest town. This is the approach taken by the USDA (2008).
- 3) An alternative relative measure of “local” which takes into account the market context, in particular the location of agribusinesses. In this case, a transaction is defined as local if the farmer buys from (sells to) the nearest available input supplier (output purchaser).

As far as the authors are aware, this is the first time the third approach has been used to assess the extent of local economic integration of farmers. The measure allows for situations where a farmer may buy, for example, fertilizer from the nearest supplier but that supplier may be a considerable distance from the farm and beyond the reach of the nearest town, and thus, according to the other two measures, not normally considered local. The new measure relies on the availability of information on the postcode of each farm and the place name (either the origin or destination) of all transactions in addition to information on the distance over which these transactions take place. Comparing the location of each farm with all named sources (destinations) of particular inputs (outputs) provides a means of differentiating between cases where i) a transaction took place over a long distance but still with the most local supplier (buyer) to that farm as identified within the sample, to ii) a case where a farmer chose to bypass a certain (potential) supplier (buyer) in preference for another located further away. In the former case the transaction is classified as local, in the latter, non-local.

A key decision was to restrict the focus of the paper to the spatial pattern as opposed to value of the direct economic transactions. As the majority of direct economic transactions will involve market intermediaries (wholesalers, merchants, and retailers) rather than manufactures or processors, only a portion of the value of the exchange will be retained locally and therefore it is incorrect to infer that the value of each transaction represents an equivalent injection of income into the local economy. However, the insights gained from an analysis of the spatial pattern of transactions will add significantly to existing understanding of the local integration of farmers and provides a basis for further research in the topic area.

3. Study area, data and sample characteristics

The North East of Scotland case study area (NUTS 3 area UKM50) comprises the two unitary authorities of Aberdeen City and Aberdeenshire. Nearly half the region's 457,320 population (9% of Scotland's total population) lives in the region's one city, Aberdeen (General Register Office for Scotland, 2010). The region has the third highest per capita Gross Value Added (GVA) in the UK, underpinned by activity within the Oil and Gas sector (ACSEF, 2009).

Historically North East Scotland has been an important agricultural region, however, in line with national and international trends, the number of farms and employment within agriculture has declined over the last two decades and part-time employees and part-time farmers have increased in significance (Aberdeenshire Council, 2009). Farms are predominantly mixed, with beef and sheep production important (Aberdeen Consortium, 2008).

Data were collected through a telephone survey of farm businesses conducted during November 2009. The questionnaire included sections covering individual and household characteristics, holding details, output, on-farm diversification, labour, inputs and off-farm work. Particular emphasis was given in the questionnaire to spatial aspects of input and output-related transactions. Three hundred businesses were contacted, drawn from a sampling frame of 2,900 Single Farm Payment (SFP)ⁱ recipients in 2008. Of these, 75% willingly participated in the survey while around 25% refused to participate due to a variety of reasons including pressure of work, survey fatigue and unwillingness to share information. Due to an

incomplete questionnaire, the final sample used in the analysis comprised 224 farm businesses.

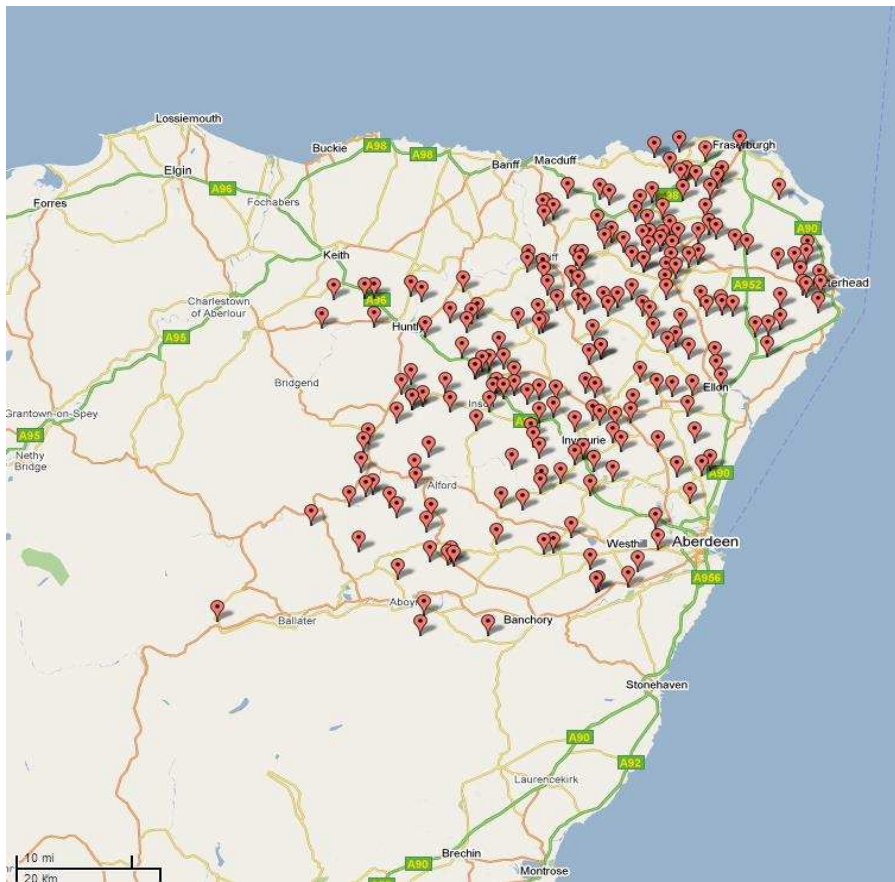
Table 1 indicates the farm types represented in the sample where the definition of farm types is based on the standard EU typology (European Commission, 2013). Data on characteristics of SFP recipients is not available, thus it is impossible to formally check how representative the sample is of the population of SFP recipients. However, in terms of farm type, the sample reflects well the distribution of farms in the region. In relation to geographical representativeness (see Figure 1), there were fewer respondents from the southern part of the study area than expected but at a general level, the spatial coverage is sufficient to be able to draw insights into the distribution of input and output flows.

Table 1 Sample Characteristics: Farm type

Farm Type	Sample		Mean Ha	Population ¹	
	n	%		n	%
Cattle	135	60	193	2,547	29
Crops	48	21	179	2,023	23
Dairy	3	1	n/a	53	1
Mixed	34	15	183	3,715	42
Granivores	4	2	n/a	456	5
Total	224	100	191	8,794	100

¹Scottish Government (2010).

Figure 1 Distribution of farms in the sample



To set the context for the spatial analysis, each respondent was asked the distance to various services and urban settlements of certain minimum size. The results are shown in Table 2 below.

Table 2 Distance from household to principal locations for household inputs (miles)

	Mean	Standard Deviation
Groceries	6.8	5.1
Major household items	17.2	10.9
Local primary school	2.9	1.8
Local secondary school	7.0	3.7
Nearest hospital	12.1	9.2
Nearest town >3,000	8.2	5.0

Nearest city >50,000	27.9	9.5
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As expected, for household purchases, the mean distance travelled for major household items is larger than for groceries, and the mean distances to the education and healthcare services included in the table all follow hierarchical pattern expected consistent with central place theory. Across all respondents, the mean distances to nearest town and to the nearest city (Aberdeen is the only settlement in the region with a population of more than 50,000), are 8 and 28 miles respectively.

Figures 2 and 3 below show the mean distances at which various farm input purchases are made and outputs sold. In terms of averages, all inputs are sourced at distances further than that to the nearest town with the distance to fertilizer suppliers beyond the distance of the nearest city. The average distance to output purchasers varied by type of output but again distances were well beyond the nearest town. However, the comparison of average distances ignores differences in the geographic and socio-economic contexts of individual farm households in the sample. To correct for this, attention turns to the proportion of transactions of different types that can be classified as local according to the three alternative measures described in section 2 above.

Figure 2 Average distances to farm input suppliers (miles)

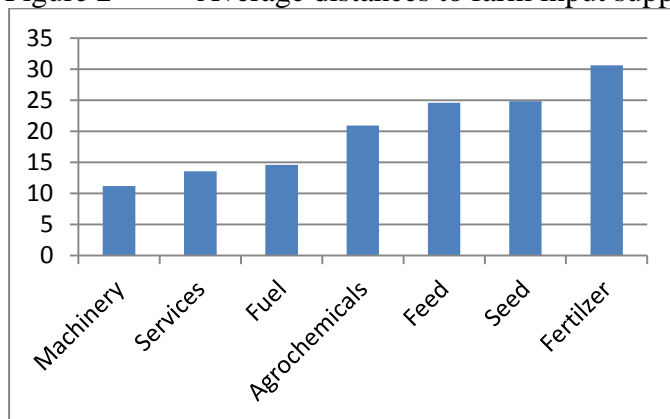
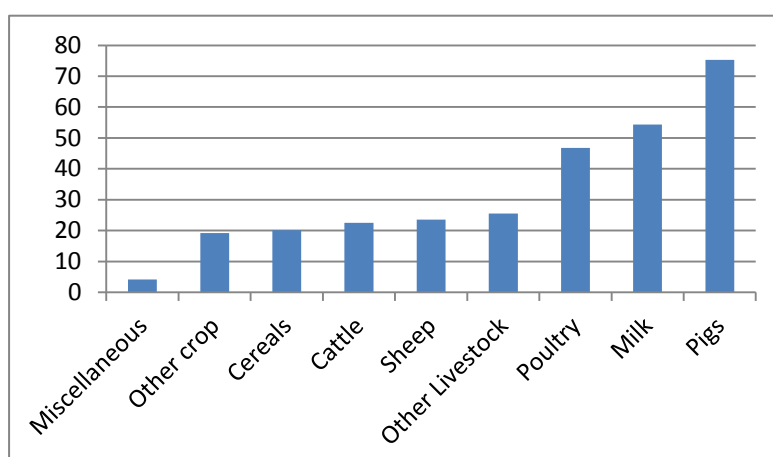


Figure 3 Average distance to (first-stage) output purchaser (miles)



4. Results

Comparison of the three locality measures

Table 3 indicates, by input type, the percentage of farms in the sample who had transactions which could be classified as local according to the three alternative definitions: within 10 miles of the farm, within reach of the nearest town to the farm or with the nearest supplier as identified using postcode based analysis.

Table 3 Percentage of farmers purchasing inputs by alternative definitions of a local transaction

	% within 10 miles	% within reach of town	% from nearest supplier
Fertilizer	22.4	19.3	41.7
Chemicals	34.0	30.1	47.9
Seed	37.8	35.5	58.3
Feed	38.8	30.5	65.8
Machinery services	40.0	56.1	82.7
Fuel	40.8	43.2	43.2
Other Services	50.6	53.9	72.7

Concentrating first on the distance based definition, the percentage of input transactions occurring within 10 miles of the holding, varies by type of input. As expected, a higher percentage of farmers sourced inputs purchased on a frequent basis (such as fuel or services) from within 10 miles of the farm than was the case with more specialist, less frequent input

purchases (such as fertilisers or agrichemicals). In general however, the percentage buying within the 10 mile limit is lower than might be expected, ranging from 22% in the case of fertilisers to 51% in case of services.

The percentages buying the same inputs within reach of their nearest town follow a very similar pattern reflecting the economic geography of this particular region. The fact that the within reach of nearest town percentage is slightly higher than the within 10 miles percentage for the more frequent low cost purchases is consistent with the less specialised nature of these goods and services and the fact that they are more likely to be still available from the local town should the farmer chose to source locally. In contrast the lower percentage of farmers sourcing seed and chemicals, from the local town suggests that either a) the suppliers of these products are more spatially dispersed (with the products not available from the local town) or b) farmers are such that they are more likely to bypass local suppliers when purchasing these higher cost inputs, or c) a combination of these two factors.

The final column in Table 3 provides further insights into the underlying spatial pattern of transactions. The higher percentage of transactions occurring with the nearest available supplier across all input categories suggests that for many farmers, the lack of local integration suggested by the first two measures is due to a lack of a supplier geographically close to the farm. In particular, as indicated in Table 4 below which focuses on fertiliser transactions only, an additional 41 farms were found to purchase locally in terms of their market opportunities as compared to the simple distance based measures. However even allowing for the geographical distribution of agribusinesses, Table 3 indicates that a high proportion of farmers, across all input categories, chose not to purchase from their nearest input supplier. In the case of fertiliser and agrichemical transactions, over half farmers fall into this category.

Table 4 Cross tabulation of fertiliser purchasing patterns by alternative definitions of a local transaction

		Nearest purchaser		Total
		No	Yes	
Within 10 miles	No	100	39	139
	%	71.94	28.06	100
	Yes	5	36	41
	%	12.20	87.80	100
Total		105	75	180
% Total		58.33	41.67	100

Tables 5 and 6 replicate the same analyses as above but in this case focus on output sales. In particular, the tables relate to the sales of a farm's main output where the latter is defined as accounting for 50% or more of the farm's total revenue.

Table 5 Percentage of main output sales

	% within 10 km	% within reach of town	% from nearest buyer
Main output	25.3	25.9	70.21

Table 6 Comparison of sales by alternative definitions of a local transaction

		Nearest purchaser		Total
		No	Yes	
Within 10 miles	No	55	87	142
	%	38.73	61.27	100
	Yes	1	45	46
	%	2.17	97.83	100
Total		56	132	188
%		29.79	70.21	100

The majority (almost 70%) of farmers sell to their most local buyer. However Table 5 indicates that often these buyers are often not geographically close to the farm holding: the equivalent percentages selling within 10 miles or reach of the local town are far less at 25% and 26% respectively. Thus in the case of output sales patterns, even more than in the case of inputs, the results confirm that the agribusiness context within which the farmer is located influences his or her ability to contribute to the local economy.

Location Analyses

To provide further insights, the (named) locations associated with each type of transaction were mapped and compared to the centre of the postcode sector of the farm holding(s) from which the transaction(s) emanates. This provides a means of showing graphically cases where transactions took place over long distances but still with the most local supplier/ buyer to other cases where farmers chose to by-pass certain (potential) suppliers/buyers in preference for others located further away. It also indicates the degree of complexity of

transaction patterns and the extent to which both upstream and downstream transactions occurring within the study area are concentrated in certain towns in the region.

The spatial pull of two such towns – Turriff and Inverurie - is demonstrated in Figures 4 and 5 below. Figure 4 concentrates on the spatial pattern of fertilizer transactions (the most widely used input in the sample), and Figure 5 shows the spatial pattern of cattle sales. In both cases, only those locations identified by more than 10 farms in the sample are shown. The origin of the arrows represents the postcode sector of the farms involved in the transaction, the end of the arrow where the transaction takes place, and the thickness of the arrows indicates the number of farms involved in the transaction.

Figure 4 Fertiliser purchases, main locations

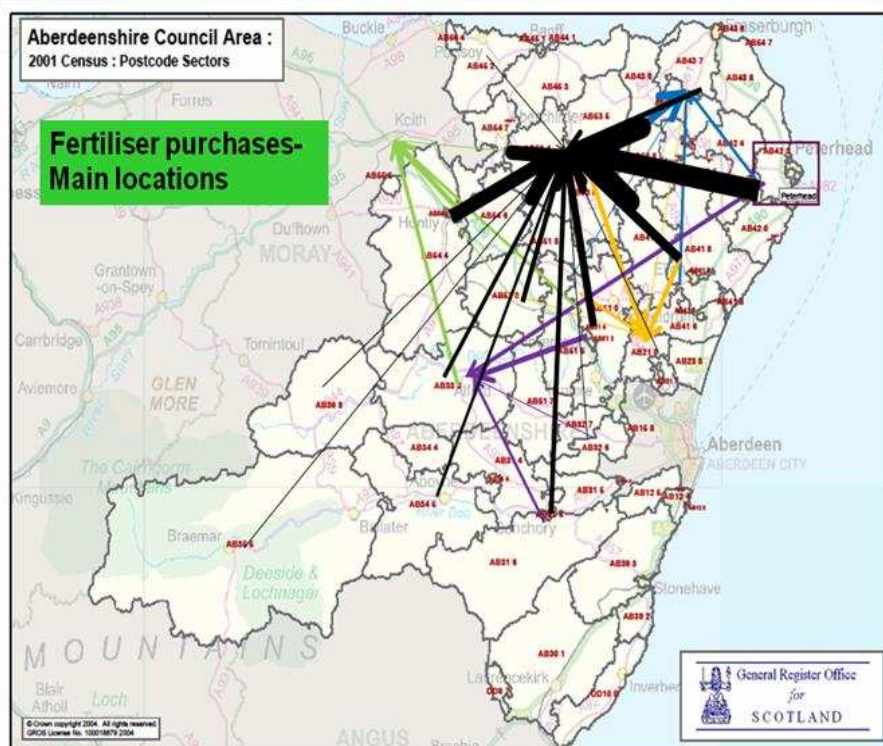


Figure 5 Cattle Sales, main locations

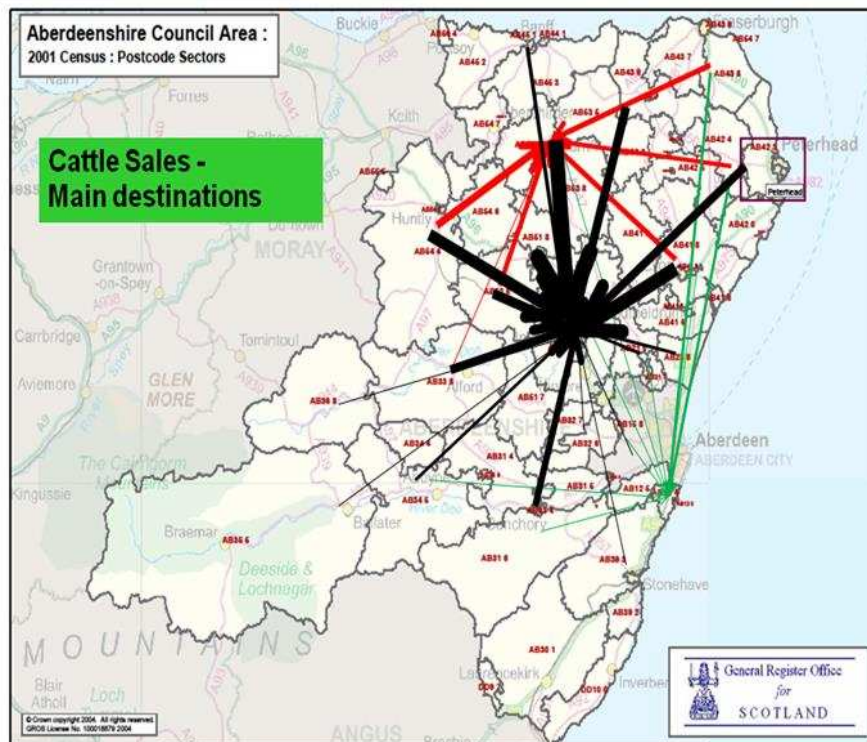


Figure 4 reveals that there are five towns which sell fertilizer to more than 10 farms in the sample (with the town of Keith outside the administrative boundaries of the study area). One town, Turriff, clearly dominates as the source of fertilizer for 40% of farm households in the sample. There is a noticeable number of distant farms purchasing their fertilizer from suppliers located in Turriff, potentially by-passing more local sources. Turriff was also found to be the major source of all other input categories apart from general services, accounting for between 18% (machinery services) and 35% (agricultural services) respectively.

Figure 5 demonstrates an equivalent pull effect for cattle sales. It should be noted that there are fewer opportunities in livestock trading, with only three locations appearing. Nevertheless, these locations are not equally popular. The heaviest focus is on one town, Inverurie, the location of the major regional auction mart, with farms from throughout the region converging here to sell livestock. Inverurie was found to be the destination of 63% of cattle sales in the sample.

5. Conclusion

The aim of this paper was to provide new insights into the spatial distribution of farm production-related transactions. Research was motivated on the basis that agricultural policy documents and farm lobby groups often argue that such transactions help sustain local economies (particularly where other production activities are limited). Our analysis contributes to testing that assumption, by highlighting the conceptual difficulty of defining what local means in a modern globalised agribusiness system.

Previous methods for measuring the spatial distribution of farm linkages were criticised for paying insufficient attention to local context and, in particular the spatial distribution of agribusinesses. In particular, it was argued that market concentration in upstream and downstream agri-food sectors has reduced the opportunities for farmers to buy and sell locally.

Empirical analysis was based on data collected from a sample of 224 farm businesses in North East Scotland. To assess the extent to which local context influences findings, a new definition of a local transaction was developed, based on a post code analysis of transactions for the whole sample. In particular, to supplement measures based on distance from the holding and distance to the local town, a market context measure based on whether or not the transaction was with the nearest buyer or seller was developed and used in the analysis.

The results confirmed the importance of context with a far higher proportion of farmers carrying out transactions with their local businesses than suggested by the distance based measures. In other words, the results showed that the spatial concentration of up- and downstream agribusinesses is a key issue in determining the degree of local economic integration. At the same time, a high proportion of farmers, particularly in the case of infrequent high cost input purchases were found to bypass the most local suppliers confirming the role of other factors on purchasing and sales decisions.

A striking finding from the analysis was the extent to which certain towns in the case study region have come to dominate agriculture related transactions. This suggests that the impacts of changes in agricultural activity (arising, for example, from CAP reform) will be spatially concentrated as opposed to being dissipated across rural space. While rural development policy makers often have to deal with problems that are spatially concentrated, the insight that agricultural production which is spread relatively evenly across rural space may also result in spatially concentrated rural development problems is important. The findings

provide a link between changes in agricultural systems and the work of urban geographers interested in the sustainability strategies of small towns, in which grass-roots community movements seek to enhance and harness what remains of their local distinctiveness for economic development. In order to do this, the activists and partnerships often have to connect across regional and national boundaries to networks of others pursuing the same chosen course (Mayer and Knox, 2010). One of the dominant towns in our case study, Inverurie, hosts the wider region's annual food festival at the auction mart. This capitalizes on the association of the region's livestock production with high quality food products, and other small towns in the region have introduced farmers' markets on a small scale. These downstream food-related initiatives can bypass some of the effects of globalisation of agribusiness by tapping into the consumerist, new urban perspective highlighted by Hadjimichalis (2003), but this is not an option for sustaining more local outlets for upstream agribusiness. As the results also support Folz and Zeuli's argument regarding the endogenous relationship between the competitiveness of farms and their local upstream and downstream businesses, there may be a case for switching policy attention away from agriculture itself to supporting retention of agribusinesses in the local economy.

From a methodological perspective, the analysis has several weaknesses. First, the focus on the spatial pattern of transactions rather than value of these transactions is a limitation which could be overcome by supplementing the analysis with a survey of agribusinesses. Second, the focus on direct transactions while ignoring the indirect and induced effects arising from those transactions could be criticised. In the absence of reliable information on value-related flows and on the extent to which these are locally retained, measuring such "knock-on" effects is problematic. The New Economics Foundation's Local Multiplier 3 (LM3) technique has some potential in this respect but also several methodological shortcomings (Thatcher and Sharp, 2008). Third, contrary to expectations, statistical analyses (not reported in the paper) found very little evidence to suggest that farm characteristics (farm type and size), farm household characteristics (demographic structure, whether or not the farmer is involved in a community group, and attitudes to risk) and off farm work systematically influence whether or not a farmer conducts transactions locally. While this may, in part, be due to the limited sample size, there is potential for further developing the theory on farmer purchasing and sales decisions through the use of in-depth qualitative methods.

Finally, farm households have multiple links with wider local economy. Apart from the agriculture-related links which are the focus of this paper, there are labour market links (through employees and the off-farm work of farm household members), other production-related economic links through farm diversification strategies, and farm household consumption links, not to mention the cultural and social contributions to made by farm households to local communities. Analysis of the spatial characteristics of these other linkages is required to provide a fuller understanding of the role farm households play in sustaining their local economies.

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ⁱ Single Farm Payments are subsidies paid to farmers within the EU through the Common Agricultural Policy. In Scotland they were introduced in 2005 and represent the most significant form of support received by farmers in terms of both distribution and magnitude.