



Farm household interactions with local economies: A comparison of two EU case study areas

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ABSTRACT

Despite the emphasis given in the EU's Common Agricultural Policy to the local economic benefits of a maintaining a strong agricultural sector, relatively little research has focused on the interactions between farm households and their local economies. The paper presents findings from an analysis of the direct economic transactions of farm households drawn from two EU case study areas, one a transition economy with an underdeveloped agricultural sector (Podlaskie, Poland), the other a mature economy with a highly developed agricultural sector (North East Scotland, UK). The results confirm that the contribution of farm households to their immediate surrounding locality is highly context-specific and depends upon both demand and supply-side factors. With the exception of off-farm work, farm households within North East Scotland study have more distant and spatially concentrated agricultural transactions due to the consolidation of upstream and downstream agri-businesses in the region. In contrast, transactions in Podlaskie take place far closer to the farm holding and are more spatially dispersed. The rural development and policy implications of the findings are discussed.

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Introduction

Official communications on the Common Agricultural Policy (CAP) often stress the role of agriculture and farm households in maintaining the strength and vitality of local economies (for example, European Commission, 2006, 2010). Farm households support employment and generate income in the wider economy in a number of ways. Through agricultural production activities, they contribute to local labour demand plus support income and employment in businesses upstream and downstream in the food chain. The extent to which these agriculture-related employment and income benefits are retained locally depends on both demand-side factors (farmer purchasing, hiring and sales decisions) and supply-side factors (the number and competitiveness of local input suppliers, strength of the local labour market, presence of local marts and food processors, etc.). Farm households also contribute to the wider economy through non-agricultural activities including on-farm diversification, off-farm work by household members, and farm household consumption. The extent to which these activities create local benefits also depends on both demand and supply-side factors including household expenditure patterns, opportunities

for local off-farm employment, and the number and range of local shops. It follows that the contribution of farm households to local economies is likely to vary across territories depending on both the nature of the agricultural economy and the structure of the broader local economy.

While there has been substantial research on the role of farm households in local economic development in a US context, research on the EU has been more limited. In particular, it has tended to take a wider spatial perspective (for example, Rocchi, 2009; Roberts, 1995). It has also tended to focus on the demand-side factors influencing agriculture related farm household transactions (Lobley et al., 2009; Psaltopoulos et al., 2006; Doyle et al., 1997; Harrison, 1993). The ability of farm households to support the local economy through production activities clearly depends on whether or not agri-businesses are present in the local economy and competitive relative to more distant suppliers or buyers. Thus supply-side factors need to be taken into account in an analysis of farm household integration (Foltz and Zeuli, 2005; Lambert et al., 2009). Moreover, the focus on agriculture-related transactions means that the contribution of farm households to local economies may have previously been underestimated, particularly in areas where farming is diversified, farm households constitute a significant proportion of the local consumer base, and/or where family members contribute to the non-farm local labour market.

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Against this background, the aim of this paper is to increase understanding of the nature and strength of farm household contributions to local economies, ensuring that both demand and supply-side influences on interactions are taken into account, and ensuring that not only production linkages but also linkages associated with farm household consumption and off-farm work are considered. This requires changing the unit of analysis from farm and farmer to the farm household. Following [Lobley et al. \(2009\)](#), the focus is on direct economic transactions. These are defined as transactions involving the farm household in a monetary exchange (either an expenditure or receipt). The majority of direct or “first stage” economic transactions will involve market intermediaries (wholesalers, merchants, and retailers). In these cases, only a portion of the value of the exchange will be retained locally. For this reason, the paper focuses on the patterns of transactions (as distinct from the value of those transactions) as these provide a first and fundamental indication of the degree of local integration.

The specific research objectives of the paper are to assess how local integration varies by input and output type, to assess whether agriculture-related transactions are more or less likely to occur locally compared to non-agriculture-related farm household transactions, and to assess whether there are factors which systematically affect the likelihood of a farm household having local as opposed to more distant economic transactions. Another objective of the paper is to show the extent to which the strength and pattern of farm household economic transactions are context-specific. In relation to the latter, it is hypothesised that structural change and ongoing processes of market concentration in the agri-food chain results in farm household transactions becoming more distant and spatially concentrated as the agricultural sector develops.

A key issue given the aims and objectives of the paper is how to define “local” in the context of farm household transactions. Several different approaches have been taken in previous studies. For example, [Lobley et al. \(2009\)](#) define local on the basis of a set distance from a farm while [Courtney et al. \(2006\)](#) define a local transaction on the basis of a drive time from a particular town. Other authors have used administrative boundaries to define what are recorded as local or non-local transactions, or alternatively, rural, urban and non-regional transactions ([Roberts, 2000](#); [Psaltopoulos et al., 2006](#)). As [Lambert et al. \(2009\)](#) note, administrative boundaries and functional economic boundaries (such as travel-to-work areas or retail market areas) usually have little correspondence with one another, while simple distance-based measures of locality ignore the structural characteristics of a region. For example, a farmer may buy fertiliser from the local supplier but that supplier may be based in a different administrative area and/or may be distant from the farm simply due to a lack of outlets or geographic barriers. It follows that the definition of local needs to take into account supply-side factors.

The approach used in the paper follows that used by the USDA in their analysis of Agricultural Resource Management Survey (ARMS) data ([USDA, 2008](#)). In particular, data are collected on both the distance over which each type of farm household transaction takes place and the distance of the farm holding to a settlement of a certain minimum population size. Transactions within the market reach of the settlement are defined as local while transactions made beyond the settlement are classified as occurring outside the local economy. This basic ARMS approach is however extended in two ways. First, rather than compare transactions against the distance to a single settlement, the distance to three different urban areas are identified and used as benchmarks for comparison. This allows the definition of local to vary according to empirical evidence, taking into account context-specific factors such as the concentration of agribusiness activities in some regions. Second, to provide greater insights into supply-side considerations, the survey instrument collected data on the actual place (location) of transactions. This is

subsequently used to analyse the spatial concentration and pattern of transactions.

Empirical analysis focuses on two EU case study areas – North East Scotland, UK, and Podlaskie, Poland. Agriculture in North East Scotland is dominated by large farms and high levels of capitalisation and specialisation. In contrast, agriculture in Podlaskie is characterised by small farms, very high labour intensity and, compared to the farm sectors of other central and eastern European countries, low productivity growth ([Swinnen and Vranken, 2010](#)). By selecting two strongly contrasting study areas, the analysis provides a basis for exploring the influence of context on farm household transactions. It also provides the basis for testing the hypothesis that farm-related transactions are more distant in areas with more developed agricultural sectors.

Detailed information was collected from a sample of farm households in each study area covering input purchasing patterns, output sales and off-farm work. Following a descriptive analysis of the data, a multivariate probit model is used to examine the factors influencing the probability of a farmer purchasing an input locally rather than from non-local sources. The explanatory variables in the model are selected to be consistent with underlying theory and/or findings of previous research. Finally a GIS-based mapping analysis of different types of transactions is carried out to show the spatial patterns of transactions and how these vary by input type, between input and output-related transactions, and between farm-related transactions and off-farm work. This provides further depth and understanding to the findings from the quantitative analysis.

The following section reviews previous studies of farm household economic integration, contrasting the various methodological approaches that have been adopted and highlighting gaps in existing understanding. This is followed by a section describing the two case study areas and sample characteristics. The results section presents both descriptive findings of the extent to which transactions are local and the results from the multivariate probit and GIS-based analyses. Finally, the Discussion and Conclusion section draws out both the methodological and policy implications of the findings.

Background literature

The most common approach to investigating the nature and importance of farm household transactions beyond the farm gate has been through general equilibrium models, in particular, Leontief input output models ([Midmore, 1991](#)), Social Accounting Matrix (SAM) multiplier models ([Psaltopoulos et al., 2006](#); [Roberts, 1995](#); [Waters et al., 1999](#)) or using Computable General Equilibrium (CGE) modelling approaches (for example, [Gohin and Latruffe, 2006](#); [Kilkenny, 1993](#)). Such studies take into account the indirect and induced as well as the direct effects arising from farm and farm household activities and have provided valuable insights into the potential impacts on the wider economy of a change in the agriculture sector. They have been used to show, amongst other things, the types of farms that generate the largest direct and indirect income and employment effects ([Lindberg et al., 2011](#)), how different farm policy instruments give rise to different economy-wide impacts ([Rocchi, 2009](#)), and the economy-wide impacts of changes in agricultural policy ([Kilkenny, 1993](#)). However, both Leontief multiplier models and CGE models tend to focus on impacts at the regional or national level as opposed to local level.¹

A related limitation of extant general equilibrium models is that they fail to provide an indication of the spatial distribution of impacts within the area they are studying. Essentially, such models

¹ A notable exception is the studies stemming from [Taylor and Adelman \(1996\)](#) village-level general equilibrium models.

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