

Project number: 6360
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Understanding the economics of land access



Key external stakeholders:

Polymakers, farmers

Practical implications for stakeholders:

Farmland rental rates in Ireland are far below the European average, which may hinder future expansion in dairy farming.

- This project finds that leasing out land can be more economically beneficial to land owners than farming and that farmers are more willing to enter land rental markets than is currently thought.

Main results:

- Leasing out land can be more profitable to many farmers than farming the land.
- Non-economic factors such as farmer attitudes are an important determinant of farmers' willingness to enter farmland markets
- Price, soil quality, type of rental contract and distance from farmyard all affect farmers' willingness to rent land in and out.

Opportunity / Benefit:

Polymakers can make more information available to farmers regarding the economic benefits of leasing land and target the types of farmers who may be more open to entering farmland markets.

Collaborating Institutions:

NUI Galway

Teagasc project team: Prof. Cathal O'Donoghue (PI)
Dr. Cathal Geoghegan
Ms. Anne Kinsella

External collaborators: Dr. Stephen Hynes

1. Project background:

This research takes place in the context of changing agricultural policy at both the Irish and EU level. In particular, the removal of the EU quota on milk production in 2015 has been seen by Irish polymakers as an opportunity for growth in the Irish dairy industry. As a result, a target of 50% growth in milk output by the year 2020 was set. In order to achieve this growth, changes may be required in Ireland's agricultural land structures. These structural changes will require land mobility through agricultural land markets. However, previous research has shown Irish farmland markets to be relatively static with little land being bought and sold and relatively low levels of land rental.

2. Questions addressed by the project:

- What is the structure of agricultural land holdings in Ireland according to the agronomic characteristics of the land and the farm system?
- What is the likelihood of land restructuring occurring as a result of current farmers switching farm system?
- What are the financial returns from long-term leasing out land compared with returns from farming?
- What is the role of farmer attitudes on willingness to enter the land market?
- How do the characteristics of farmers who are willing to enter the land market differ from the characteristics of farmers not willing to enter the land market?
- Which features of agricultural land are important to farmers when transacting land?
- What are farmers willing to pay (WTP) and willing to accept (WTA) for different farmland attributes?

3. The experimental studies:

- Teagasc National Farm Survey (NFS) data is utilized to identify the structure of agricultural land holdings and the likelihood of land restructuring.
- A farm microsimulation model is developed to consider the effect of taxation policy at a farm level and compare financial returns arising from a range of agricultural land use options in order to examine the effect of policy instruments on land mobility in Ireland.
- A nationally representative survey of Irish farmers across the major farm systems is carried out to examine current farm characteristics, attitudes to land, farming, and the future and farmers' knowledge about policy initiatives.
- A discrete choice experiment (DCE) is used to estimate the value of land attributes to farmers in terms of renting in and renting out land and farmers' willingness to pay (WTP) and willingness to accept (WTA) for land attributes. The examined land attributes are contract type, distance, soil quality and price.

4. Main results:

Given current agricultural land structures in Ireland, it is unlikely that increases in milk production will occur without additional land being made available to dairy farmers. Additionally, it appears unlikely that farmers from other farm systems will convert to dairy on a large enough scale to meet planned milk supply increases. As a result, increased land mobility will have to be facilitated through land markets in order for dairy farmers to have a large enough land base to reach policy targets.

Results from the hypothetical microsimulation model suggest that the financial rewards possible for those wishing to make their land available through the rental market are substantial. Leasing out agricultural land on a long-term basis can prove more profitable for typical cattle and tillage farmers than farming the land. Only dairy farmers derive consistently higher disposable incomes from farming their land as opposed to leasing it out. However, changes in agricultural support policy can pose a risk to earnings derived from leasing.

The project examines the characteristics of farmers who are open to entering the agricultural land market. Along with socio-economic and agricultural factors, attitudinal variables are predictive of a farmer's willingness to enter the land market. Farmers motivated by the pleasure of farming are more likely to demand land while farmers of an innovative nature are more likely to be willing to supply land. Conservative farmers are unlikely to be open to either supplying or demanding land. Dairy farmers and farmers with a high stocking rate are open to adding land while cattle farmers are more open to supplying land. Other factors such as age, income from farming and the presence of a successor influence farmers' willingness to enter the land market. Generally speaking, factors that significantly influence farmers' openness to temporary land transactions such as leasing also seem to significantly influence permanent transactions such as buying and selling.

The choice experiment finds that farmers value various land attributes differently when deciding whether to rent in or rent out a piece of land. The model revealed a significant preference for leasing land rather than renting under the conacre system with farmers showing a preference for long-term lease contracts over short-term conacre contracts. When renting in land, farmers are willing to pay €123/ha more for a long-term lease contract of at least five years compared to a conacre agreement. Farmers prefer land adjacent to their farmyard compared to land further away and are prepared to pay €221/ha more for land adjacent to the farmyard compared to 1km away, and €155/ha more for adjacent land compared to land 5km away.

Regarding distance, farmers prefer to rent out land the further away the plot of land is from the farmyard. Compared to land 5km away, farmers require €445 more to rent out a hectare of land adjacent to the farmyard and €314/ha to rent out land 1km from the farmyard.

A significant preference is found for good soils over poor soils. Farmers prefer to rent in land of good quality compared to land of medium and poor quality, with farmers willing to pay €251/ha more for land with good quality soil compared to land with soil of poor quality. They are prepared to pay €182/ha more for good quality land compared to that of medium quality. Farmers require €495 more to rent out land of good quality compared to land of poor quality and €576 more to rent out land of medium quality compared to poor quality land.

The results from the choice experiment show that each of the studied attributes contributes significantly to WTP and WTA amounts. Therefore, all the attributes can be said to be important factors in farmers' decision making regarding land transactions. The results also show that a ranking of attributes is possible. In terms of renting in land, soil quality is the most important factor, followed by distance and then contract type. Regarding renting out land, contract type is the most important attribute, followed by soil type and finally distance. Average WTA prices are much higher than average WTP prices for the same attributes, which may help to explain the static nature of Ireland's agricultural land market. However, it can be assumed that some land transactions would still take place within this hypothetical market due to the observed overlap between the confidence intervals of the WTP and WTA estimates.

5. Opportunity/Benefit:

The research provides insight into the characteristics of farmers who are open to supplying and demanding farmland. This can provide useful information to policy makers in terms of better targeting agricultural land mobility policies. The importance of farmer attitudes is highlighted in relation to land mobility. This shows that land use decisions by farmers are not solely driven by economic concerns, a finding which contributes to the attitudinal literature as a whole.

The study presents Ireland as a case study to examine the effects of institutions on farmland markets. The finding that tax and subsidy policy can have significant distorting effects on agricultural land markets adds to the literature in this area. The structural analysis of Irish farmland shows that Ireland has sufficient land to reach agricultural policy targets but that the current prevailing land structures will provide an impediment to reaching stated policy goals. Land restructuring through existing farmers switching farm systems is also unlikely to occur. These findings can contribute to Irish agricultural policy discussions going forward.

6. Dissemination:

- "Socio-economic drivers of land mobility in Irish agriculture" was presented at the Agricultural Economics Society 89th annual conference at the University of Warwick in April 2015.
- "Institutional drivers of land mobility in Ireland" was accepted for presentation at the 5th World Congress of the International Microsimulation Association (IMA). This Congress was held 2-4 September 2015 in Luxembourg.
- "The effect of farmer attitudes on openness to land mobility" was presented at the 7th EUGEO Conference on the Geography of Europe at NUI Galway in May 2019.

Main publications:

- Geoghegan, C., Kinsella, A., & O'Donoghue, C. (2017). Institutional drivers of land mobility: The impact of CAP rules and tax policy on land mobility incentives in Ireland. *Agricultural Finance Review*, 77(3), 376-392.
- O'Donoghue, C., Geoghegan, C., Leonard, B., & Kinsella, A. (2017). Hypothetical microsimulation modelling. In C. O'Donoghue (Ed.), *Farm level microsimulation modelling* (pp. 63-86). Basingstoke: Palgrave Macmillan.
- Geoghegan, C., & O'Donoghue, C. (2018). Socioeconomic drivers of land mobility in Irish agriculture. *International Journal of Agricultural Management*, 7(2), 26-34.

Popular publications:

- A newspaper article based on this research was published in the Irish Independent newspaper on November 18th, 2015. The article was co-written with Anne Kinsella. The article can be

accessed at: <http://www.independent.ie/business/farming/leasing-land-can-bring-huge-advantages-with-tax-incentives-34205616.html>

- An article in Teagasc's TRResearch was published in April 2019. The article can be accessed at: https://www.teagasc.ie/media/website/publications/2019/TRResearch_Spring2019_FarmersLand_p28-29_proof.pdf

7. Compiled by: Cathal Geoghegan
