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# Attachment to Land and its Downfalls: Can Policy Encourage Land Mobility?

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**Abstract**

Sentimental ties to land in Ireland result in less than 1 percent of agricultural land being sold each year and land rental is among the lowest of countries in the European Union. The findings highlight that longer leases are associated with large farms and those with a high percentage of land rented in, but revised policies are required to encourage more landowners to rent out their land. Improved land mobility can reduce issues such as barriers to entry for farmers, the economic vulnerability of farms, low farm succession rates, low pensions and an ageing farmer population. The history of land in Ireland and the non-pecuniary benefits of farming are also discussed.

## 1. Introduction

High levels of sentiment towards land can result in low mobility of agricultural land. A reasoning for such sentiment towards land is the wish to honour the commitment and sacrifices of previous generations (Cassidy and McGrath, 2014). Quinn and Halfacre (2014) find that farmers report their attachment to farmland as due to their want for security, by creating a prosperous economic business and leaving a family legacy. Land also provides a place to live and a way to own a means of production (Sikorska, 2008; Marks-Bielska, 2013).

The motivation of this paper is to discuss the history of Ireland's land market and the impact sentiment has on Ireland's current land market, with the aim of providing recommendations for increased land mobility. The implications of low land mobility are discussed in the context of how it limits the land available to expanding or

new entrant farmers, which may otherwise be under-utilised or idle. Issues around succession and the ageing farmer are also discussed. Ireland's agricultural land market is an important case study because at 72 percent, the country has the greatest percentage of land dedicated to agriculture in the European Union (EU) (Eurostat, 2022), highlighting the requirement for an efficient agricultural land market for sustainable rural development. However, the market experiences low sales each year with 0.25 percent of available agricultural land being sold in 2019 (CSO, 2022a). Ireland also has the second lowest portion of rented agricultural land in the EU at 19%, compared to an EU average of 57% (European Commission, 2022).[1] Like its European counterparts, farms in Ireland are predominantly family owned. 95 percent of European farm holdings in 2020 were family farms[2] with this figure being 91 percent in Ireland (Eurostat, 2022). This highlights the central role that the family unit plays in the decision-making of landowners in Ireland.

This is the first paper to assess the characteristics of farms that currently engage in the long-term renting in of land in Ireland, with secure leases being a means to improve land mobility when sales are low. Data are utilised from the Farm Accountancy Data Network (FADN) for Ireland, collected as part of the Teagasc National Farm Survey (NFS). This research is timely as policy measures were enhanced in 2015 to encourage increased land rental where a farmer renting out his land for 15 years or more can avail of up to €40,000 income tax relief (Revenue, 2019).

In Section 2, a literature review includes discussion of agricultural land markets and sentimentality, European agricultural land markets, the history of Ireland's land

[1] Farms in Portugal have the lowest average portion of rented land to utilised agricultural area at 17 percent (European Commission, 2022).
[2] A farm is considered a 'family farm' if over 50 per cent of the regular labour force are family members (Eurostat, 2022).

market and the current land market in Ireland. This section also discusses factors such as succession and tax incentives which aid land transfers. Section 3 explains the data and methodology used for the econometric analysis, and the subsequent results are presented in Section 4. Section 5 provides a discussion of the findings in the paper and Section 6 offers concluding policy recommendations for overcoming the challenges presented within the paper.

## 2. Literature Review

### 2.1 Agricultural Land Markets and Sentiment

From a social science perspective, neoclassical economics assumes that decision-makers act rationally. This means that there is an assumption that landowners act as profit maximising firms and add units of a factor of production to the point where the price of the factor of production equals the value of its marginal product, or return. In addition to price, land supply can be affected by landholders' preferences for holding land relative to other assets, expectations about the future prices of land and the expected returns from land compared to the expected returns from income-earning alternatives (Geoghegan, 2018). Where landowners do not believe other assets would be a good substitute for land, the supply of land has a low level of response to price changes.

Markets for land can be distorted by the significant role sentiment plays in reducing landowners' willingness to sell land. The endowment effect is evident in land markets as sentiment results in many landowners feeling that ownership of their land is worth more than its potential market value. This can be to the extent where a farm is perceived to be intangible and unsaleable from a landowner's perspective in Ireland (Cassidy and McGrath, 2014). Baldwin et al. (2017) surmise that attachment can be

described by three dimensions. Attachment can be ‘affective’ when there is a genealogical linkage, which stems from the history of land parcels. It is ‘functional’ when land satisfies a need or purpose such as the production of food and an income, and it is ‘cognitive’ when it includes a knowing and understanding of the environment, which can often relate to self-identity. Each of these traits may contribute to a reluctance of farmers to sell their land.

### 2.2 Land Markets in Europe

The sale of land is often the preferred form of land transfer when compared to land rental. Reasons supporting this argument are that land sales transfer full rights to the new user; owned land can be used as collateral to increase access to credit and owned land provides optimal incentives for investment (Binswanger et al., 1995). However, sales are dependent on the supply of agricultural land. Loughrey et al. (2019) find, with the exception of Denmark (at approximately 1.5 percent), that the annual share of agricultural land sold in many EU Member States was below 1 percent between 2005 and 2015. Deininger (2003) concludes that transaction costs, risk considerations, limited access to credit markets, and the immobility of land all indicate that the performance of land sales markets may be far from the theoretical ideal[3]. Attachment to land could also be added to this list to reflect the findings of Cassidy and McGrath (2014).

Land rental markets, including share tenancy, help to overcome the problem of low land sales by reallocating land holdings. Marks-Bielska (2013) notes that the prevalence of land leasing in Europe results from the high purchase prices of

[3] This means that higher agricultural productivity is not necessarily translated into higher demand for land and land sales markets may lead to outcomes that do not enhance productivity.

agricultural land, which is due to the lack of supply in some areas. In the EU, farmland rental rates vary significantly from 17 percent in Portugal to 90 percent in Slovakia (European Commission, 2022). One explanation for such variation is the differences in historical context between countries. The reason for this high percentage in Slovakia, as well as across many parts of Eastern Europe, is that most of the agricultural land is used by large corporate farms as opposed to family-run farms in Ireland (Swinnen et al., 2016). Under Communist regimes, land in Eastern Europe was mostly managed by large collective and state farms and Swinnen et al. (2016) find a strong correlation between countries' levels of rented land and the portion of land used by corporation farms. This explains why Slovakia and the Czech Republic (where 72 percent of farmland is rented[4]), which have a high portion of land used by corporations, have relatively high levels of rented land. Renting land for at least five years is one of the requirements imposed by European funds for Slovakia (Vranken et al., 2021), which motivates farmers to agree to contracts with a long duration. Over the past decades, most countries in Eastern Europe have reformed their land rights and deregulated land exchange (Swinnen et al., 2016).

Current policies and possible future ones also affect land rental rates. Adenuga et al. (2021) note that the uptake of rental agreements can be limited by a fear amongst farmers of sudden changes to policy, high levels of bureaucracy and a lack of awareness of government policies. There are major differences between countries in the regulation of land exchanges. Ireland has the most liberal land market in Europe and the most heavily regulated land markets are in France (where 84% of farmland is rented) and Hungary (where the figure is 59%) (Swinnen et al., 2016). In Hungary, land ownership is restricted to Hungarian nationals, and owners have an obligation to

[4] Figures on average agricultural land rental rates are provided by the European Commission (2022).

farm the land (Swinnen et al., 2016). As recommended by Adenuga et al. (2021), break clauses within land rental contracts may encourage more rental agreements as each party knows there is a possibility to break the agreement.

In the Netherlands and France, improvements in conditions for tenants resulted in the rental share of land being relatively high and farmers no longer wanting to purchase land. In France, regional authoritative organisations determine a minimum and maximum price bracket within which the tenant and the owner can agree a contract price, effectively overseeing the local land markets through their powers to control the buying, selling, and renting of agricultural land. They ensure that land is only owned by working farmers. These organisations also control the level of farm restructuring and growth by requiring farmers to get authorisation from them for farm expansion. There has been a decline in land rental in the Netherlands as strict regulations protecting tenants have resulted in a gap in land sales prices between land that does and does not have a tenant. As regulated land tends to achieve lower market prices, farmers in these countries became discouraged from renting out their land. Between 1950 and 2010, the percentage of land rented fell from 56 to 27 percent (Swinnen et al., 2016). As of 2020, this figure is 42 percent (European Commission, 2022).

Policy in Norway has successfully increased land rental in recent years. Since 1995, it has been the responsibility of a landowner to ensure that their land is being actively farmed either by farming it themselves or by renting out the land to an active farmer. To ensure the leasing of farmland provides certainty for both the tenant and owner, the Act requires a minimum rental period of 10 years. The contract is to be formally written and the land must be maintained in good condition (Forbord et al., 2014). These conditions have contributed to an increase in land rental in Norway. In

1959, 87 percent of farms in Norway were wholly owned (Statistics Norway, 2002; Forbord et al., 2014). By 2008, farmers in Norway were leasing an average of 40 percent of their land (Forbard et al., 2014).

In some countries, there are policies in place to reduce land fragmentation. For example, there are plot size limits in Bulgaria, Spain and Slovakia below which land cannot be subdivided. In Austria, land sales can be refused if they increase land fragmentation (Vranken et al., 2021). Bradfield et al. (2021a) find that land fragmentation reduces the technical efficiency of dairy farms in Ireland. Capital Gains Tax and Stamp Duty relief is available in Ireland for land consolidated by sale, purchase, or exchange (Revenue, 2020a). However, no regulations are in place to reduce land fragmentation.

### 2.3 The History of Agricultural Land in Ireland

The attachment of Irish people to land is evident in everyday culture. This ranges from an unwritten pride in working the land, folklore, songs, and literature, to the notable performance by Oscar nominated Richard Harris of an Irish man's fight for his land in 'The Field' by John B. Keane. It is clear that Irish people's love for the land arises from the history embedded in it.

Throughout the fifteenth and sixteenth centuries, the organisation of Irish agricultural land resembled feudalism. This meant that land was controlled by English lords who each possessed large tracts of land. They kept a parcel for themselves and divided the remainder into smaller plots that were distributed to the lower serfs (Smyth, 1993). In 1603[5], the Celtic feudal system was replaced by a series of confiscations that transferred the ownership of Irish land from the Celtic peasants and their chieftains

[5] The arrival of King James I as monarch of England.

to the English (Smyth, 1993). Under this system, the land was let to Irish tenants. The Irish became tenants ‘at will’ who could be evicted at any time and for any reason. Additionally, tenants received no compensation for improvements made on the land during their tenancy and received no protection from eviction or rent hikes (Lefevre, 1893; Smyth, 1993).

To collect as many rents as possible, the landlords subdivided the land into several small plots. As a result of the unprecedented population growth in pre-Famine[6] Ireland, the demand for land rose greatly. This increased the price individuals were willing to pay for rent, which resulted in a greater incentive for the landlord to evict tenants and further subdivide their holdings. The 1841 Census reported that landlords subdivided their holdings to such an extent that forty five percent of the tenants' holdings contained fewer than five acres with the rents often being higher than the value of the holding (Smyth, 1993).[7]

The struggle for Irish independence that created conflict between Irish tenants and, mostly absentee English landlords, resulted in increased demand for tenure security (Swinnen et al., 2016). Several acts were passed to enable Irish tenants to purchase their land holdings. Between 1870 and 1909, the Irish state gradually increased the percentage of the purchasing price it was willing to lend from 66 to 100 percent. This meant that tenants who had insufficient capital were no longer excluded from the market. The Government’s intervention in the market was highly effective in increasing the share of Irish farmers who were owner-occupiers (Foley-Fisher and McLaughlin, 2016).

[6] The Irish Famine lasted from 1845 to 1852.
[7] This calculation did not consider holdings under one acre, which were probably considerable prior to the Famine (Woodham-Smith, 1962).

Changes in farm structure can be linked to the Land Commission, established by the Land Act in 1881, to adjudicate on the fairness of rents and it continued to be a tool for applying land policy. It had the power to buy land on a compulsory basis that was either not being used to capacity or was required for the expansion of small holdings (Conway, 1986). The introduction of the Land Commission meant that the leasing of land for periods of greater than 11 months was subject to the express permission of the Commission and landholders were reluctance to seek permission for longer leases, for fear of having such land taken over by the Land Commission (Conway, 1986).

Following Ireland's independence in 1921, the share of rented land decreased dramatically, from 96 percent in 1885 to 6 percent by 1930 (Swinnen et al., 2016).[8] It is assumed that 'affective' attachment to land strengthened because of this much sought-after increase in land ownership and the memory of the struggles of previous generations.

Change also came in 1973 as Ireland joined the European Economic Community. This meant that Ireland could receive price supports under the CAP (Murphy and Nunan, 1993). In addition, an increase in output prices in the 1970s resulted in higher demand for land for production (Roche and McQuinn, 2001). This created a land price bubble with nominal land prices rising by 97 percent between 1977 and 1979 which may have been partially due to speculation (Roche and McQuinn, 2001).

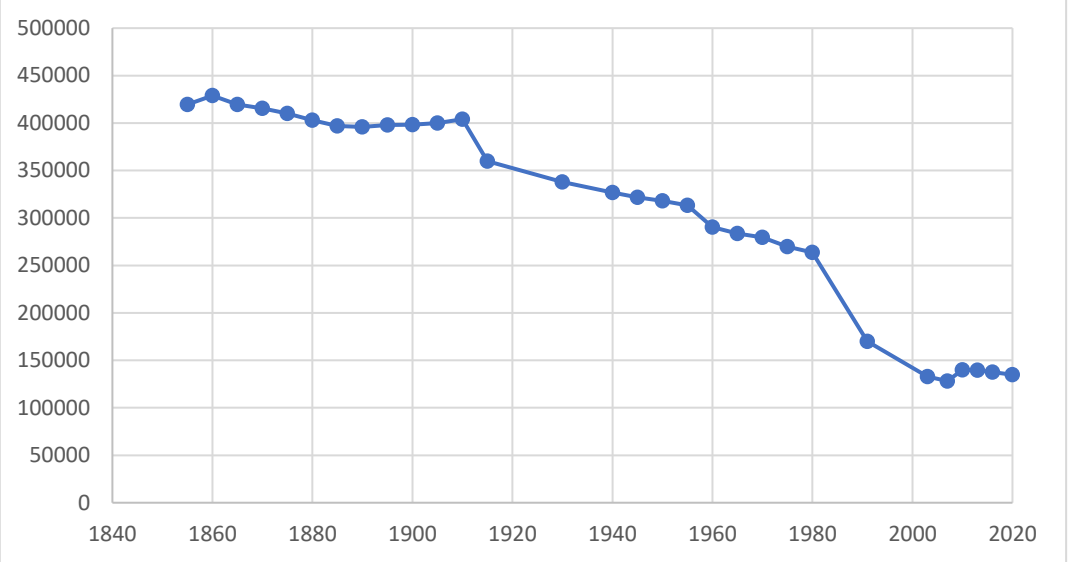
By 1978, public policy had shifted to encouraging longer leases, when the Minister for Lands suggested that landowners should consider offering long-term land leases (Interdepartmental Committee 1978, p. 34; Conway, 1986). The Minister for

[8] It currently stands at 19 percent (European Commission, 2022).

Lands noted that the existing system did not effectively encourage land mobility which is necessary to ensure optimum use of land. The Land Commission was removed in 1984 (Conway, 1986).

This history among Irish farmers continues to play a role in shaping agricultural land markets because the longer individuals perceive their family's history to be a part of the farm, the more likely they are to feel a sense of commitment and duty to preserve it (Bjørkhaug and Wiborg 2010; Cassidy and McGrath, 2014). It is found that sentiment prevents the sale of farmland even where it appears unviable to keep it (Bjørkhaug and Wiborg, 2010; Cassidy and McGrath, 2014). This attitude is an important concept to note while studying land markets, as much more than market dynamics need to be considered. As shown by Figure 1, since the Irish Famine, the number of farm holdings has been declining.[9]

*Figure 1.* The Number of Farm Holdings in the State (1855 - 2020)

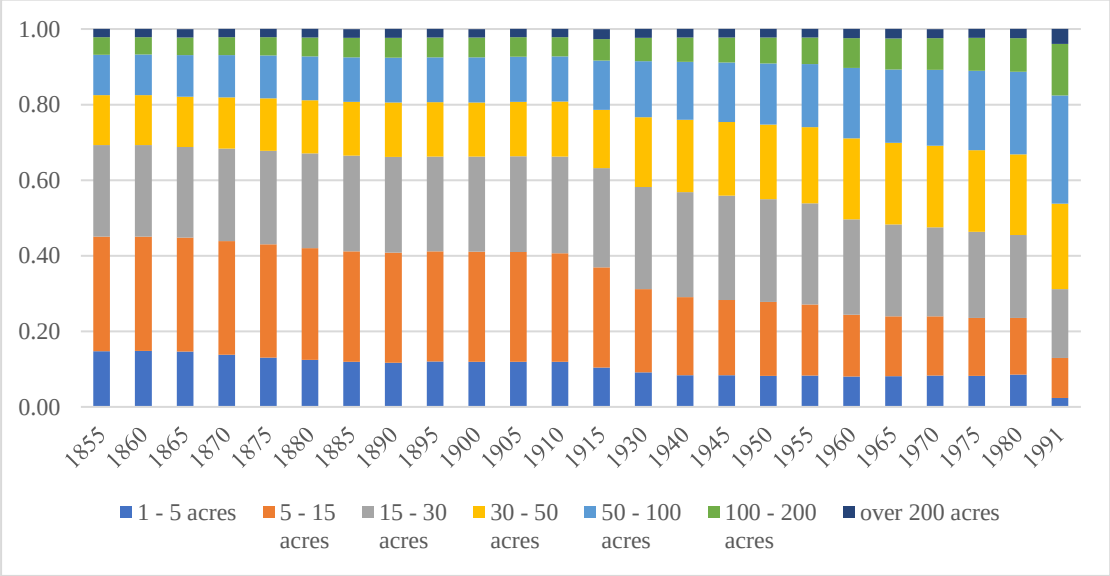



[9] Because of a change in the method of enumeration of agricultural holdings, a significant discontinuity of data occurred in 1910. Where a holding crossed certain geographical boundaries, it was considered as more than one holding. This methodology change had the effect of reducing the number of holdings by around 11 per cent.

Data source: CSO (2007, 2008, 2012, 2021a, 2021b, 2021c, 2022b)

Between 1915 and 2010, the area of land used for agricultural purposes declined by 7 percent (CSO, 2021d), which may be a contributing factor to the decline in farm numbers. Figure 2 shows that farm sizes have been increasing since the Famine and this suggests a reversal of the subdivision that occurred in pre-Famine times.

*Figure 2*. The Breakdown of Farm Holdings by Size (1855 - 1991)

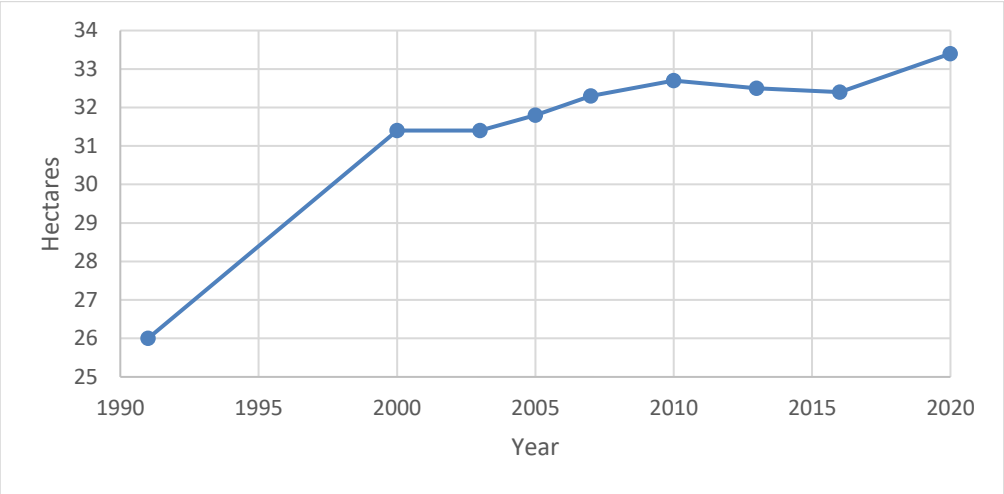



Data source: CSO (2021a)

The Central Statistics Office (CSO) has collected farm size data using different size bands. Therefore, Figure 3 shows the change in average farm size between 1990 and 2020 only. Farm sizes continued to increase significantly between 1990 and 2010. The decline in farm sizes between 2010 and 2016 may have been partly due to a reduction in the volume of land attributed to agriculture, which fell by approximately 2.5 percent in that period (CSO, 2010; CSO, 2021e). This is in contrast to the 2.8

percent increase that occurred in the previous ten-year period (CSO, 2012). The average farm size increased between 2016 and 2020 which can be attributed to a fall in farm numbers (CSO, 2022b), as previously shown in Figure 1.

Figure 3. Changes in the Average Farm Size in the State




Data source: CSO (2007, 2008, 2021b, 2021c, 2022b)

It is important to note that the EU milk quota was abolished in 2015 which resulted in another significant change for Irish agriculture and the land market. It has boosted dairy farm incomes. In 2020, the average dairy farm income was approximately €74,000 which is significantly greater than tillage, sheep and cattle rearing farms which earned an approximate average of €32,000, €18,000, and €9,000, respectively (Dillon et al., 2021). Therefore, it is rational for dairy farmers to demand land from other farms, should these farmers be willing to supply their land at a suitable price.

### 2.4 Ireland's Current Agricultural Land Market

With the need for world food production to double by 2050 to cater for predicted population growth (European Union, 2022), the subject of land use for agricultural production is of utmost importance. The EU's 'Farm to Fork' strategy seeks to make food systems more sustainable and environmentally friendly (European Commission, 2021a; Bradfield et al., 2021b) with the efficient allocation of land being a central element of the food supply chain. A well-functioning land market is also vital to Ireland's rural economy as the agriculture and food sector produces a greater return than other traded sectors of the economy. That is because agri-food firms obtain 74 percent of raw materials and services from Irish suppliers, compared to 43 percent for all manufacturing companies (Teagasc, 2020). The agri-food sector also employed 7.1 percent of the Irish working population in 2019 and 9.5 percent of total merchandising exports in 2019 were agricultural products (DAFM, 2020).

Ireland experiences similar issues to other EU countries in terms of land mobility. These are increased competition for land use (Rounsevell et al., 2006), barriers to access land by young farmers (Hennessy, 2014) and increased concentration of land ownership (van der Ploeg et al., 2015). Land rental markets are a means to help overcome these issues and Bradfield et al. (2020) find that the renting in of land can increase dairy farm profits in Ireland. To explain this finding, Bradfield et al. (2020) note that the decision by dairy farmers to rent in land is positively influenced by the presence of a successor, discussion group membership[10], milk price, stocking rates and hired labour.

As previously discussed, rental agreements in Ireland are typically short-term contracts lasting for eleven months at a time, with this tradition dating back to the days of the Land Commission. These short-term contracts offer low levels of security for

[10] Which form part of advisory services.

renting farmers. This is unusual in the European context, with short-term or annual rental contracts being more common in developing countries (Deininger, 2009).

Formal contracts have the added benefit of allowing the farmer renting out their land to include legally binding conditions regarding the maintenance or upkeep of their land. Also, long-term land rental reduces the costs associated with renegotiating rents on a regular basis. A pilot scheme has been operated by the Macra Na Feirme[11] called the Land Mobility Service to increase land mobility and access to land through collaborative farming arrangements. Through this scheme, 114 long term leases were arranged in 2018 (The Land Mobility Service, 2019). This is helped by increased tax relief for land leasing, outlined in Table 1. Evidence suggests that the tax relief is encouraging long term land leasing as the number of long-term land leases registered with Revenue for income tax relief in Ireland has increased from 3,590 in 2011 (Teagasc, 2019) to 11,810 in 2019 (Revenue, 2022). This relief cost the State €27.2 million in 2018 (Revenue, 2020b). Geoghegan et al. (2021) find, from a 2014-2015 survey of Irish farmers, that 51 percent are open to renting in land but only 29 percent are open to renting out land. A limitation of these findings is that an expression of interest does not accurately reflect a future rental agreement.

[11] Macra na Feirme is a voluntary organisation with a mission to support the sustainable development of rural communities in Ireland by supporting the social, economic, cultural, personal development and well-being of young people who have a rural connection.

*Table 1.* Maximum Tax Relief Allowed Each Year.

| Lease length | Leases entered before 1 January 2015 | Leases entered after 1 January 2015 |
|---|---|---|
| 5 years or more but less than 7 years | €12,000 | €18,000 |
| 7 years or more but less than 10 years | €15,000 | €22,500 |
| 10 years or more but less than 15 years | €20,000 | €30,000 |
| 15 years or more | N/A | €40,000 |

Source: Revenue (2019)

Leasing land has previously raised issues regarding a change in policy relating to agricultural direct payments in Ireland. When direct payments accrue to the land user rather than the landowner, farmland owners may be reluctant to lease out land, as any further policy change within the term of the lease may reduce their future direct payments. This situation arose following the 2013 re-negotiation of the CAP. Irish farmers who had rented out all their land were not considered to be active farmers and were, therefore, not eligible for new entitlements under the new system (Geoghegan et al., 2017). Geoghegan et al. (2021) find no relationship between income from entitlements and the willingness of Irish farmers to either rent in or rent out land in 2014. Nonetheless, future policy should provide long-term certainty so that either rental prices reflect the ability of the tenant to receive basic payments, or some direct payments are allocated to the landowner to encourage them to rent out their land.

## 2.5. Transferring of Land

### 2.5.1 Farm Succession

Farm succession is important for the future of the agricultural sector, to maintain existing knowledge within the sector and continued rural economic viability. It is particularly important to Ireland as it experiences an ageing rural population mainly due to outward migration. A report by the European Commission (2021b) highlights that for every farm manager under 40 years of age in 2016 in Europe, there were three farm managers over 65. The European Commission (2021b) finds that some older farmers use CAP support as income beyond a typical retirement age to compensate for low pensions. This is reflected in the fact that, in 2016, only 5 percent of farm holders in Ireland were less than 35 years old while 30 percent were 65 years or older (CSO, 2021c), which is considered a retirement age for other sectors. At 23 percent, Ireland has one of the highest percentages of utilised agricultural areas in the EU farmed by farmers of 65 years or older (Eurostat, 2021)[12]. The problem seems to arise from both sides as Teagasc National Farm Survey data for 2018 notes that, across all farming systems in Ireland, only 46 percent of farmers have identified a successor for their farm. Only 35 percent of farmers confirmed that they believe their successor will continue to farm. On the other hand, Leonard et al. (2020) find that farmers are often reluctance to transfer their farm due to uncertainty over their future income needs which may arise due to illness, taxation, retirement or marital breakdowns.

Zagata and Sutherland (2015) note that access to land is a major barrier for new entrants to farming. Ireland shares similarities with the UK, in that high prices and low availability of land for sale restricts entry into farming (Hennessy and Rehman,

[12] Only five countries in the EU had a greater percentage of utilised agricultural area farmed by this age cohort in 2016. Portugal is the highest at 31 percent (Eurostat, 2021).

2007). Entry to farming is, therefore, often dependent on land transferring from one generation to the next. The succession process in Ireland is different to other European countries. Traditionally, the successor takes over the operation or ownership of the farm from the previous generation while they are still alive. This differs from Denmark where the successor buys the farm from his or her parents at approximately the market rate and some other European countries where land is subdivided among heirs (van der Veen et al., 2002). Instead, in Ireland, the heir generally operates the farm and provides a living for the previous generation and any other dependent siblings from the farm income (Hennessy, 2002). Therefore, a young farmer entering the industry will not necessarily have a large debt burden.

However, significant deterrents to operate the farm may include the commitment to financially provide for family members (Hennessy, 2002) and the potential of higher alternative off-farm incomes (Leonard et al., 2020). This is supported by the fact 27 percent of farm households in Ireland in 2021 were classified as economically vulnerable[13] (Dillon et al., 2022). As part of the 2015 Teagasc National Small Farms Survey, only 15 percent of operators of small farms, with an annual standard output of less than €8,000, stated that they would be willing to rent out their land. 80 percent stating that they would not rent out land as they wish to farm the land themselves with only 2 percent stated that the reason they would not consider renting out their land is because they believed it was of poor quality (Dillon et al., 2017). This highlights the role non-pecuniary benefits, such as attachment to land, play in farming activities because in other sectors such a high level of financial vulnerability would

[13] A farm business is defined as being economically viable if family farm income is sufficient to remunerate family labour at the minimum wage in 2021 (which is assumed here to be €20,129 per labour unit) and provide a 5 percent return on the capital invested in non-land assets. Dairy farms had the lowest percentage of vulnerable farm households (8%) and cattle rearing and beef producing farms had the greatest percentage (34%) in 2021 (Dillon et al., 2022).

result in mass firm exits. In addition, if no successor is identified, the possibility of offspring wishing to sell the land remains low. A reasoning for this is the wish to honour the commitment and sacrifices of previous generations, as previously discussed. This sentiment can mean that the selling of farmland is not an option on an emotional level (Cassidy and McGrath, 2014). As economic forces are assumed to push some unviable farms out of the market, the desire to maintain family identity results in families holding on to farmland, with the consequent development of land rental markets. The land rental market allows families to maintain ownership of the land, providing a solution to both issues (Forbord et al., 2014).

Recent years have seen an increase in registered farm partnerships which are a means to facilitate succession. There are approximately 3,000 partnerships in place at present (Teagasc, 2021). Within a registered partnership in Ireland, the farmer and successor co-manage the farm, transferring valuable skills and experience. To avail of income tax incentives, a young, qualified farmer can claim 100 percent stock relief on the increased stock value of their equivalent share of the farm profit (Teagasc, 2021). Clear limitations of this policy are that a successor must be identified, and a partnership must be built on mutual understanding.

### 2.5.2 Policies to Promote Farm Succession and Restructuring

To overcome sentiment, reducing land sales and rental, behaviour-altering incentives have been considered. In Ireland, these have included tax incentives for land rental (previously outlined in Table 1), farm succession and farm restructuring. The nomination of a suitable farm heir reduces subdivision of land among children and encourages farm succession. Therefore, policies are in place to incentivise farmers to nominate a successor. There are three capital taxes that apply to farm inheritance in

Ireland: Capital Gains Tax (CGT), Capital Acquisitions Tax (CAT) and Stamp Duty. CGT applies only to the farmer transferring land out of their name. It is charged at 33 percent of the value the property gained between the date of acquisition and the date of transfer. CAT applies to the successor and is charged at 33 percent of the value of the property acquired. Both CGT and CAT reliefs are available up to certain asset value thresholds (Leonard et al., 2017). These reliefs are dependent on the relationship between the farmer and successor. Early Retirement Schemes had been in place in Ireland, but they were unsuccessful due to their emphasis on financial incentives and failure to acknowledge the emotional implications of retiring from farming (Conway et al., 2016).

Stamp Duty is also applicable to the successor, charged at 2 percent of the value of the asset. However, if the successor is a child of the farmer, and is under the age of 35 with a minimum level 6 agricultural certificate, stamp duty is not applied. Other policy incentives to encourage earlier farms transfers in Ireland are young farmer top ups on Basic Farm Payments and other direct payments. Farmers under the age of 40 who have a minimum level 6 agricultural certificate may receive a 25 percent top up on their Basic Farm Payment. There is a limit of 50 hectares applicable to this scheme (Leonard et al., 2017). To encourage investment by young farmers, they can avail of a 60 percent grant on capital expenditure under the Targeted Agricultural Modernisation Scheme (TAMS) (DAFM, 2021). Tax credit of up to €5,000 per year for 5 years is available for farm-succession partnerships. However, the older farmer must transfer at least 80 percent of the farm within 10 years (European Commission, 2021b). Such supports encourage land mobility between generations. However, concerns may be raised as to the role these supports play in preventing land from entering the market where it may be purchased or rented by a farmer who is more

productive or efficient. Therefore, supports that also encourage land to enter the market should be enhanced.

Regardless of the relationship between the two parties, CGT relief is available for land consolidated by sale, purchase, or exchange (Revenue, 2020a). Stamp duty of 1 percent, reduced from 6 percent, is applied to the excess value of land acquired over the value of the land disposed of. The exchange must occur within a 24-month period (Revenue, 2020a). Land consolidation helps to reduce the effects of land fragmentation with Bradfield et al. (2021a) finding that a high number of land parcels or long travelling distances to parcels reduces technical efficiency[14]. Interaction analysis highlights that these negative effects are furthered with increasing farm size (Bradfield et al., 2021a).

Notably, Howley (2015) studies the role of social and lifestyle factors in farmers' decision-making and highlights that policy providing financial incentives can alter farmers' actions. However, Howley (2015) states that compensation for any loss of non-pecuniary benefits is required to alter certain behaviours. This is an important consideration for any policy changes with regards to land mobility as farmers' motivations extend far beyond monetary gains.

## 3. Data & Methodology

### 3.1 Data

This study uses 2015 to 2018 data from the Teagasc National Farm Survey (NFS) which includes approximately 900 farms annually across six farming systems. Teagasc is the state-owned Agriculture and Food Development Authority in Ireland

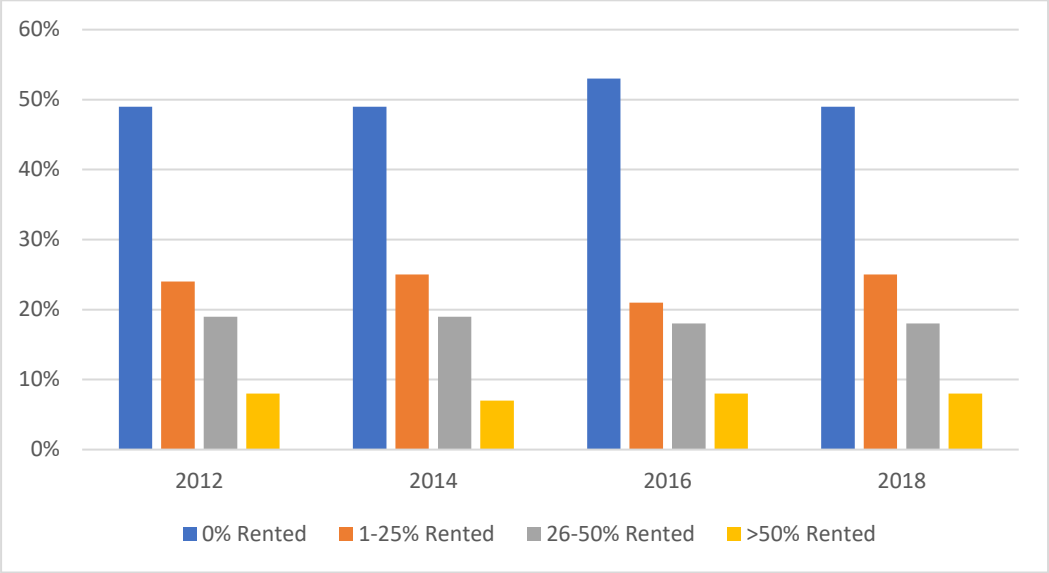
[14] A farm is technically inefficient if it could potentially increase its output level without increasing its input level.

and the national body responsible for the integration of research, training, and advisory services to the agriculture and food industry and to those living in rural communities.

The survey is operated as part of the European Union FADN. It includes a representative sample of farms in the Republic of Ireland with a standard output of greater than €8,000 per year, the equivalent of 4 cows, selected in conjunction with the Irish CSO. The CSO classifies farms into size groups based on their standard output by applying a standard output coefficient to each animal on the farm. The Teagasc NFS collects data from this stratified random sample of farms annually and records information provided by individual farms at a single farm level. Each farm in the survey is assigned a weighting factor. Weighted data is then used as the basis for calculating estimates for all Irish dairy farms above a standard output of greater than €8,000.

Figure 4 shows the percentage of farms across all systems that contain varying portions of rented land between 2012 and 2018. There has been no clear structural change to farms' levels of rented land in this period. In each year, approximately 50 percent of farms contain no rented land and the percentage of farms that contain mainly rented land is consistently below 10 percent. As shown by Figure 3, the average farm size is increasing over time which may explain why increases in the volumes of rented land are not causing the percentage of rented land to change significantly.

Figure 4 - The percentage of all farms with varying land rental categories




Data source: Teagasc NFS 2012-2018

Geoghegan and O'Donoghue (2018) note that there has been some uplift in the aggregate volume of rented land in Ireland, which they state is due, to some extent, to an increased volume of land rental being rented out by non-farmers. These non-farmers are typically offspring who inherited land they do not wish to farm. However, the NFS data shows that the percentage of rented land on farms has remained stable between 2012 and 2018.

The survey is not designed or conducted to capture data on informal rental agreements or cash transfers that farmers may choose not to disclose. This is a limitation of the work, but we believe that the incidence of such agreements is low enough to neither significantly affect the accuracy of the data or the findings of this research. A second limitation of this study is that lease length data is not available for years prior to 2015. As such data are collected only for dairy farms, the subsequent analysis in this paper regarding the length of land leases assesses only dairy farms with rented land in from 2015 to 2018. There are 947 dairy farms in the dataset with rented land.

### 3.2 Empirical Method

The lease length is a variable of particular interest in the empirical estimations. As all farms in the dataset may rent land on multiple leases, a farm's 'lease length' is presented in Equation (1) and calculated as follows:

$$\sum\left(t * \left(\frac{a}{r}\right)\right) \quad (1)$$

Where *t* is a land parcel's rental term.

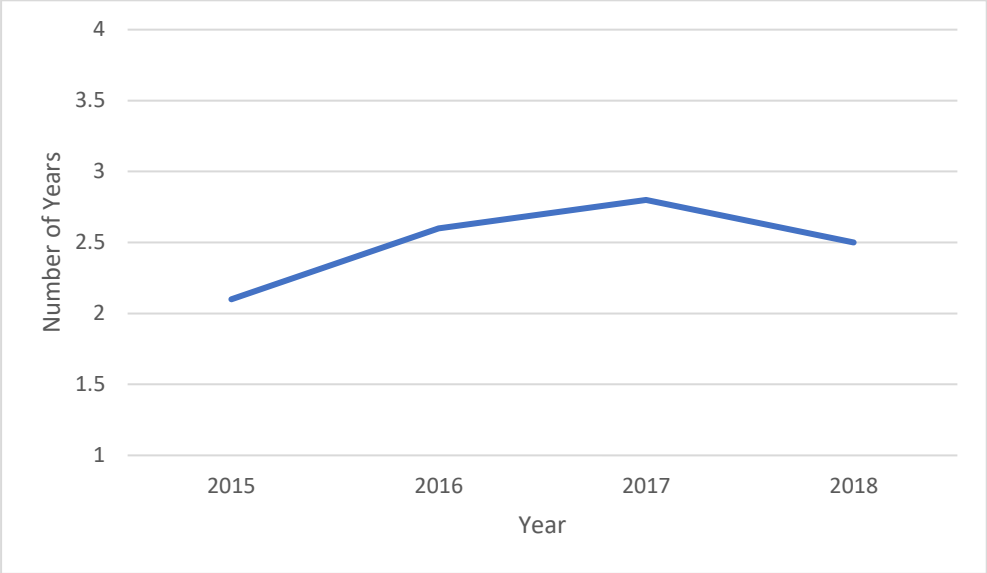
*a* is the area of the parcel, in hectares, and

*r* is the volume of rented land on the farm, in hectares.

As an example, if 50 percent of the farmed land is rented on a five-year lease and the remaining 50 percent is rented on a ten-year lease, the weighted lease length would be 7.5 years.

The weighted length of land leases in the dataset ranges from 1 year to 30 years between 2015 and 2018. 78 percent of dairy farms that rent some land have leases of 1 year, 10 percent have leases of between 2 and 5 years, 10 percent between 6 and 10 years and 2 percent of farms have leases of longer than 10 years. Figure 5 shows that the mean weighted length of land leases on dairy farms has only fluctuated incrementally between 2015 and 2018. This is despite tax incentives for farmers to rent out land being increased in 2015.

Figure 5 – Mean weighted lease length of Irish dairy farms 2015 - 2018




Data source: Teagasc NFS 2015-2018

Additional variables used in this analysis are defined in Table 2.

Table 2. Variable Definitions

| *Dependent Variables* | | *Mean* | *Std.* |
|---|---|---|---|
| Lease length | The weighted duration of land lease agreements, in years. | 2.48 | 3.55 |
| *Independent Variables* | | | |
| Land farmed (hectares) | All owned and rented in land, minus land rented out. | 64.21 | 34.51 |
| Rental portion | The hectares of land rented in, divided by the hectares farmed. | 0.29 | 0.18 |
| Debt to asset ratio | Debt divided by the sum of values of machinery, buildings and livestock, at the end of the year (lagged by 1 year). | 0.24 | 0.36 |
| Hired to family Labour ratio | The no. of paid labour units divided by unpaid labour units (lagged by 1 year). | 0.19 | 0.37 |
| Stocking rate | The no. of dairy cows divided by the hectares of (lagged by 1 year). | 1.28 | 0.42 |
| Net margin per (€) | Dairy gross output less dairy direct costs and overheads, divided by the hectares of land farmed. | 1,360.23 | 693.45 |
| Advisory Contact | =1 if the farm has contact with advisory services discussion groups. | 0.83* | |
| Young farmer | =1 if any household member is <45 years old. A a potential successor. | 0.67* | |

*The proportion of farms that are in this category.

Bradfield et al. (2020) use a Heckman (1979) model to understand the factors influencing land rental and profitability among dairy farms in Ireland. A Heckman model (1979) was considered in this research to develop a profile of the types of farms that rent in land on long-term leases. However, preliminary results show a strong correlation between the length of a lease and the percentage of farmland that is rented. As these two variables arise together, a causal relationship cannot be determined.

Instead, a statistical profile of the characteristics of farms with short and long-term leases in 2018 is developed.

## 4. Results

Comparison of means with equal variances[15] are calculated and provided in Table 4. Statistical significances[16] are also reported. Long-term leases are of 5 years or longer, as previously defined in Table 1. Only one year of data is analysed as the NFS collects data on existing lease lengths rather than lease start dates. The low level of attrition of farms within the NFS from year to year would result in duplication of data if more than one year was included.

*Table 4.* Comparison of means of farms with long-term leases versus farms with short-term leases in 2018

| Variable | Contrast |
|---|---|
| Land Farmed (ha) | 13.09** |
| % Land Rented In | 0.08** |
| Income to Debt (Lag) | 3,519.14 |
| Paid to Unpaid Labour (Lag) | 0.06 |
| Stocking Rate | 0.04 |
| Net Margin per Ha (€) | 209.92 |

**: Statistically significant at the 10% confidence level

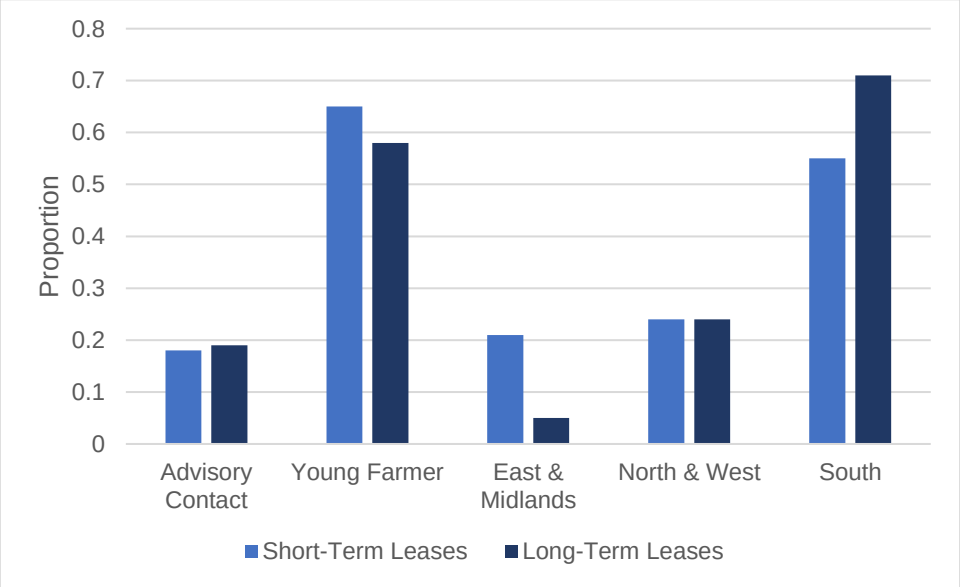
Table 4 shows that the differences in dairy farms with short and long-term leases lie in land structure. On average, dairy farms with land rented on long-term leases are 13 hectares larger than farms with land rented on short-term leases. These

[15] Values are spread out equally from their respective means.
[16] Statistical significance refers to the likelihood that a relationship between two or more variables is not caused by random chance.

farms also contain a mean percentage of rented land that is 8 percent greater. It is favourable that these farms are not incurring high levels of debt to finance their long-term leases. There is also not a statistically significant difference in the means of the previous year's profits on farms with short- and long-term leases. An explanation for this is that farm incomes can fluctuate greatly, creating great uncertainty for farmers when making decisions about land leases.

A breakdown of categorical variables by lease length is outlined in Figure 6. Pearson chi-square tests[17] show no statistically significant relationship between any of the categorical variables in Figure 6 and short and long-term leases.

*Figure 6.* Proportions of categorical variables, under short and long-term leases in 2018




From a comparison of the percentage of farms that fall within a particular category, the most notable difference in farms that have land rented on short or long-term leases is location. Long-term leases are popular in the South with 71 percent of

[17] This is statistical test applied to sets of categorical data to evaluate how likely it is that any observed difference between the sets arose by chance.

farms with long-term rental agreements located there. 55 percent of dairy farms with short-term leases are based in the southern region. The results provide some concern for intergenerational renewal as it may be expected that young farmers, given their age, would opt for long-term leases which provide greater certainty. In fact, a greater percentage of farms with short-term rental agreements have a young farmer within the household. It may be the case that younger farmers are seeking land for long-term rental, but it is not available in their area. As previously discussed, the ageing profile of farmers in Ireland is a concern for the sustainability of the agricultural sector and wider rural development.

The results outlined in Table 4 and Figure 6 show that only scale and the portion of rented land are significant factors in the decision of dairy farmers to rent in land on a long-term compared to short-term basis. This suggests that the format of the income tax relief scheme outlined in Table 1, which offers increased tax-free income for longer leases, may be encouraging the arrangement of long-term rental agreements to include large tracts of land. While it is possible for a renting farmer to rent in land from multiple landowners, given the unlikelihood of land being available from multiple landowners in an area and the technical inefficiencies that arise from scattered plots (Bradfield et al., 2021), it is assumed that most farms renting in land do so from one landowner.

## 5. Discussion

### 5.1 Changes in land rental

As outlined in Figure 4, the breakdown of farms' owned and rented land is not changing significantly, despite the tax incentives in place. Figure 5 suggests that the mean length of leases on dairy farms is showing a minor increase over time. This is

supported by the fact the number of registered long-term land leases in Ireland has increased from 3,590 in 2011 (Teagasc, 2019) to 11,810 in 2019 (Revenue, 2022). This creates some improved certainty for landowners and tenants.

Table 4 finds a statistically significant positive relationship between dairy farm size and the length of leases. It is important that small farms also engage in expansion of their land resources to gain economies of scale (Bradfield et al., 2020) and to improve technical efficiency (Bradfield et al., 2021a). It is a positive sign that dairy farms with a higher portion of rented land are securing agreements on long-term leases. However, it is a concern that farms with long-term leases do not consist of significantly more young household members who are potential successors. This is in addition to NFS data for 2018 noting that, across all farming systems, only 46 percent of farmers have identified a successor for their farm with only 35 percent of farmers confirming that they believe their successor will continue to farm.

### 5.2 Assessment of Tax Relief Incentives

As outlined in Table 1, farmers can receive up to €40,000 in income tax relief for the leasing out of land. Geoghegan et al. (2017) note that the incentives for renting out land are only financially attractive to cattle finishing and tillage farmers who earn the lowest level of family farm income per hectare. Opportunity costs are greater for high income earning dairy farmers. Geoghegan et al. (2017) also highlight that it is not possible for most farmers to gain the highest level of income relief as it requires farmers to rent an unrealistic volume of land. Despite the increased tax incentives being relatively new, in 2018, three years after their introduction, the average relief obtained from a long-term lease was approximately €2,500 (Revenue, 2020b). This is far below the maximum relief of €40,000.

National Farm Survey data show that cattle rearing generated the lowest average return per hectare of all farm systems at €334 in 2021. If the average number of unpaid labour units were paid minimum wage, cattle rearing farms would have instead incurred an average loss of €130 per hectare in 2021, despite receiving an average direct payment of €464 per hectare (Dillon et al., 2020). These farms include an average of 32.5 hectares, of which an average of 30.2 hectares is owned, making the maximum income from the renting out of owned land, assuming the highest average rate for grassland of €605 is achieved (SCSI and Teagasc, 2020), to be approximately €18,000. It is rational for cattle rearing farms to rent out some land and Geoghegan et al. (2021) find that farmers within this farming system are the most likely to state that they are open to renting out their land. However, the current tax thresholds provide no incentive for a farmer to lease out their land for a period of more than 7 years as their farms are not typically large enough for them to benefit from this level of rental income.

Dairy farming generated the highest average return of all farm systems in 2021, consistent with previous years. The average income was €1,538 per hectare farmed in 2019 (Donnellan et al., 2020). In the east of the country, where the average rental income per hectare for grassland was the highest in Ireland at €605 per hectare in 2021 (SCSI and Teagasc, 2020), 66 hectares would need to be rented out to maximise the €40,000 income tax relief. This would be impossible for most farmers as the average size of a dairy farm in 2021 was 64 hectares and dairy farms own an average of 50.4 hectares (Donnellan et al., 2020). In fact, NFS 2021 data show that only 14 percent of all farms in Ireland contain 66 hectares or more of owned land. It must also be noted that a greater number of hectares would need to be rented out to maximise

the tax relief available if the land generates lower rental income than the figure stated for the East.

When unpaid family labour is considered, the true return of a dairy farm was €1,112 per hectare in 2019. The renting out of land is, therefore, still not likely to be attractive for many dairy farmers. However, it is important to highlight that farm income is liable for income tax unlike rental income under the set thresholds but rental income must compensate for losses in the non-pecuniary benefits of farming land. The renting out of land is more attractive if the landowner can, depending on current CAP policies, retain receipt of direct payments which were an average of 21 percent of dairy farms' average profit per hectare farmed in 2021.

We conclude that there is incentive for some farmers to rent out their land, however, a balance has not been struck between those farms that have an incentive to rent out their land and those that can maximise the available level of income tax relief. A means to maximise incentives is to make this tax relief applicable to all farm income and not just income from the leasing out of land. This would be a considerable cost to the State. However, this increased incentive would result in farmers continuing to farm the land from which they are productive to obtain a tax-reduced income and leasing out the idle or under-utilised land on long-term leases. It can be argued that this under-utilised land may be of a lower quality, however, it may be under-utilised due to its location away from the main farm holding and the rental market can help reduce land fragmentation. Either way, the improved allocative efficiency of land would increase agricultural output and tax revenue to help offset the cost to the State of this scheme. Importantly, land leasing also means that the landowner retains ownership of the land he or she feels attached to. This policy would also provide greater certainty over incomes which can fluctuate greatly and result in a hesitation amongst farmers

to commit to long-term schemes. An additional benefit of long-term leases is environmental improvements as Tseng et al. (2021) state that approximately two-thirds of the 117 studies they assess find a positive relationship between land tenure security and environmental outcomes and human well-being.

## 6. Conclusion and Recommendations

Agricultural production is essential to rural prosperity, a key objective of the EU Common Agricultural Policy. Countries with high levels of attachment to land and low levels of land mobility can learn from both the benefits and challenges Irish policymakers face in altering farmer behaviours. Incentives are in place in Ireland to increase land mobility and some progress has been made in the quantity of rented land and the number of long-term leases in place. The results show that large farms or those with a high portion of rented land tend to secure their land on long-term agreements, when compared to farms with short-term land leases. However, considering the portion of farms that are economically vulnerable and the financial benefits land leasing can provide, these changes are minimal.

It may be expected that the uptake of long-term leases will increase over time, but the findings of this study highlight that the current structure of tax incentives for long-term leases are misaligned with farm sizes and income levels. This raises concerns over the true level of incentive this scheme offers farmers. This study suggests extending these tax relief measures across all income generating activities and not solely income from the leasing out of land. This would incentivise farmers to continue farming the land from which they are productive, to obtain a tax-reduced income, and leasing out the idle or under-utilised land on long-term leases to farmers who feel they can make an economic return from the land. This would be particularly

beneficial for older farmers who wish to receive an income without selling their family land.

Policymakers in Ireland should also examine evidence from other European countries and impose minimum lease length requirements. This is in the knowledge that FADN data for rental markets shows that the quantity of rented land tends to typically be higher in countries with strict regulations such as minimum durations of rental contracts (Swinnen et al., 2008). However, regulation should not be too restrictive so as to prevent the deterrence of land rental which has occurred in France. Further research should study the topic of land ownership and retention from a behavioural approach, as financial incentives alone will not increase land mobility dramatically.

With high levels of sentiment towards land, it is advised that local planning authority and advisory groups initiate discussions of land transfers on a personal level. Farmers may otherwise feel defensive over such negotiations, making them unlikely to discuss them with their neighbour. Education and open discussion are also a means to aid farmers in saving towards a pension from an earlier age, with the European Commission (2021b) highlighting that low pensions are reducing land transfers.

Limitations exist in that the data on the length of agricultural land leases have only been collected in Ireland since 2015 and the data are specific to dairy farms. This means that we cannot yet accurately assess changes in all agricultural land leases in Ireland over time. European wide collection of this data, across all farming systems, would assist in furthering important research in the efficiency of land markets, particularly in countries with low levels of land mobility.

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