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Understanding the Agricultural Land Leasing Market in Ireland: A Transaction Cost Approach

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Abstract

Formal written land leasing contracts offer an alternative to land purchase for those farmers wishing to expand their land area and provide greater security relative to informal short-term rental agreements and are particularly important for beginning farmers with resources insufficient to purchase land. Formal land leasing contracts vary in terms of their duration but there is limited understanding about the determinants of contract duration in developed countries. In this research, we use econometric techniques and transaction level data to explore the determinants of duration for agricultural land lease contracts for two regions in Ireland. Under the Transaction Cost Economics approach, the research explores the role of legal status, price and non-price conditions in influencing the contract duration. Results indicate that the legal status of the tenant is a significant factor in influencing the duration. Provisions such as break clauses appear positively related to duration and confirm the theoretical expectation that long-term contracts create a demand for processes that enable adaptation over the course of long-term exchange.

Keywords Land Leasing Contract, Transaction Cost Economics, Legal Status, Break Clause, Two stage least squares.

JEL code D22, G320, Q12, Q18

1 INTRODUCTION

Patterns of land tenure can change due to various reforms or events. Large-scale changes in the pattern of land tenure have attracted more attention in the econometric literature relative to moderate changes (Swinnen and Vranken 2006; Deininger et al 2012; Van Landeghem et al 2013). A recent moderate but significantly enduring increase in agricultural land leasing activity is evident in Ireland (Geoghegan et al 2021) and is largely attributed to the expansion of the dairy sector in the aftermath of milk quota abolition in 2015 (Bradfield et al 2020). The rise in rental activity appears dominated by the growth of medium and long-term land lease contracts but this increase is occurring from a relatively low base. Ireland has the lowest rental share in European agriculture (Swinnen et al 2016). Agricultural land rental agreements in Ireland have traditionally been informal and short-term in design with few non-price provisions considered (O'Neill and Hanrahan 2012; Geoghegan et al 2018).

In Ireland, a variety of activities contribute to the demand for agricultural land including livestock production, cereal production, forestry and other rural land use activities. The land sales market in Ireland is relatively thin (Loughrey et al 2020) and land rental transactions therefore provide an alternative for dairy farmers and other tenants wishing to expand their land area. The popularity of formal land leasing contracts is more established in other Western European countries including France and Belgium where long-term land leases are the dominant form of land tenure (Adenuga et al 2021). Ireland is similar to Denmark in terms of a relatively low share of land rented. This pattern of land tenure can be traced to the late 19th century and early 20th century when governments in both countries followed the dominant strategy of supporting tenants to become owners (Swinnen 2002; Swinnen et al 2016). The increasing tendency towards formal land leasing contracts in Ireland contrasts with the Netherlands where short-term or liberal leases are increasingly adopted (Vranken et al 2021).

The land rental market remains an important avenue for a wide range of participants in Irish agriculture who wish to gain access to more land. In Ireland, tillage farming has historically occupied more rented land than dairy farming (Conway 1986; O'Neill and Hanrahan 2012). However, the production cycle is shorter in tillage farming and this may lead to rental agreements with a shorter duration. The profitability of

dairying has surpassed tillage in the last decade (Loughrey et al 2022) and this shift in relative profitability also influences the relative demand from each activity for long-term leases. There appears to be an increase in the importance of contractualisation for dairy farming in Ireland. This trend is further evident in the United Kingdom (Thorsøe et al 2020). In addition to the traditional agricultural activities of livestock and cereal production, there remains an interest among potential tenants for acquiring agricultural land to undertake other agri-environment related activities including forestry and wind farming (Van Rensburg et al 2015).

Much of the recent literature about the agricultural land rental market in Ireland is concerned with the decision of individual farm holders to participate in agricultural land rental markets or with the determination of land rental prices (O'Neill and Hanrahan 2012; O'Neill and Hanrahan 2016; Geoghegan et al 2021). Elsewhere, research emphasizes the potential importance of non-price conditions in the design of rental contracts. For instance, Adenuga et al (2021) emphasizes the importance that tenants' and landlords' retain the ability to adapt to change, the ability to access new schemes, improve productivity and contribute to structural change. In particular, Adenuga et al identify the possible role of a break clause in allowing the parties in the land contract 'to review performance in relation to compliance with the terms of the lease'.

Landowners and farmer tenants in Ireland have faced increasing risk and uncertainty in recent times. Negotiations in relation to the Common Agricultural Policy have involved some degree of uncertainty and it is likely that this uncertainty increased in 2018 and 2019 as the 2014-2020 CAP programme reached the initially planned end date. Indeed, the link between the use of the land and the EU subsidy payments, introduced by the Mid Term Review of CAP, and the re-negotiation of 2013, in which farmers who had leased out all of their land were not considered to be "active" farmers, may induce landowners and tenants to be cautious in making decisions that could put their future subsidy at risk (Geoghegan et al 2017). Therefore, the planned CAP reform, and related information that landowners and tenants may retrieve from regulations' proposal, may affect decisions on contract duration. The definition of an active farmer is discussed in (D'Andrea and Lironcurti, 2017) while (Guastella et al

2021) discuss the implications of farm subsidy reform on the value of land rental contracts.

In June 2020, the European Council reached an informal deal with the European Parliament on the extension of the CAP programme until the end of 2022 and a political agreement was reached in November 2020 on the transitional rules for 2021 and 2022 (European Commission 2020). The extension of the CAP programme until the end of 2022 has delayed the impact of any proposed reforms on agricultural land rental markets.

The family farm is the dominant type of farm holding in Irish agriculture. At the same time, there is evidence of family farms changing their legal status from sole trader to company status and this development is documented in various reports (IFAC 2019) but is absent from the academic literature. The legal status of potential tenants could play some role in influencing the demand for agricultural land leases, both in terms of price and duration. In addition, the expansion of tax incentives is motivating landowners into supplying more land to potential tenants (Geoghegan et al 2017). There is official evidence of an increase in uptake of tax incentives in relation to the leasing of agricultural land (Revenue 2021).

This paper is concerned with providing a deeper understanding about the determinants of contract duration during this current period of modest but important change for agricultural land tenure in Ireland. The research is based on the agricultural land lease market in two NUTS 3 regions in Ireland i.e. the West region and the South-East region. These two regions are selected due to their different agricultural conditions. Agriculture in the West region is dominated by small-scale cattle and sheep livestock farming where economic viability is relatively low and where farm households rely significantly on off-farm sources of income. In the South-East region, the economic conditions are more favourable for dairy and tillage farming with higher levels of economic viability. The 2016 Farm Structures Survey provides the most recently available statistics about the area of agricultural land in each region and shows that the West region accounts for 17.4 per cent of agricultural land (excluding Commonage) while the South-East region accounts for 15.6 per cent in Ireland. These two regions together account for approximately one-third of the agricultural land area

in Ireland. Research about the land rental market in these two regions can therefore provide a useful guide to the situation in the Republic of Ireland as a whole.

The research draws on the Transaction Cost Economics approach and follows recent studies using transaction level data to analyse farmland markets including (Hüttel et al 2013; Seifert et al 2021) and a sparse literature exploring the influence of institutions on rural land markets (Needham et al 2011; Woestenburg et al 2014). The paper performs an econometric analysis of the factors affecting the duration provision of (a sample of selected) agricultural land lease contracts in Ireland. The research represents an empirical test of the Transaction Costs Economics (TCE) theory with analysis of the factors affecting the duration provision of (a large sample of selected) agricultural land lease contracts in Ireland. The research is undertaken to assess how (and how much) contract provisions affect the contract duration and whether or not the long-term contract is a transaction cost minimizing efficient structure. The authors attempt to interpret the results under a TCE framework and policy perspective.

2 THEORETICAL AND EMPIRICAL BACKGROUND

Transactions costs (TC) are the costs of negotiating, monitoring, and governing exchanges¹. Transaction costs economics (TCE) acknowledges different governance structures as a results of efficient TC minimization. In Williamson's model, in fact, opportunism and bounded rationality are the two main drivers that impact and generate the transaction costs. The degree of intensity of the TC is affected by three main factors: complexity; asset specificity and uncertainty. Finally, the intensity of the TC (high, medium, low, expressed in qualitative terms) affects the governance, within which the transaction is organized. For instance, a high degree of complexity, asset specificity and uncertainty generate high TC. This, in turn, will drive the transaction organization towards vertically integrated governance structures. On the contrary, a low degree of complexity, asset specificity and uncertainty generate low TC. This, in turn, will drive the transaction organization towards (spot) markets. In the middle of the two extremes, exist a combination of the three key variables, with different degrees of impact on TC and, consequently, a plethora of governance structures, that

¹ The section draws from the work of Oliver Williamson (1967, 1979, 1985)

Williamson names “hybrid” and that span from cooperatives, to consortia, from long term-contracts to franchising contracts, just to mention a few.

Long-term contracts, in particular, are hybrid structures, within which transactions are organized for efficient TC minimization. In the mainstream of transaction costs economics (TCE), in fact, it is a well-known theoretical result that the benefits of long-term contracting increase with the asset specificity required to undertake the transaction (need to secure the transaction) and decrease with the complexity and the uncertainty of the transaction (need for a flexible contract). There exist, therefore, a basic trade-off, that the paper attempts to assess, making the use of econometric analysis.

More formally, the governance structure represented by long-term contracts (with the contract duration empirically synthesizing the selected governance):

$$\text{Duration} = f(\text{Asset Specificity}; \text{Uncertainty}; \text{Complexity}).$$

(+) (-) (-)

On the one hand, in fact, long term contracting provides benefits, like the reduction in the cost of repeated bargaining and bigger willingness of transactors to take actions, whose value depends on the other party’s performance. On the other hand, there are drawbacks on long-term contracting, stemming from the costs of anticipating, devising optimal responses to, and specifying future contingencies (formation costs); and from the losses associated with efforts to enforce, evade, or force a renegotiation of the contract’s terms and the “maladaptation” costs of failing to adjust to changing circumstances (execution costs).

Contract terms, in fact, align ex ante marginal incentives and prevent wasteful efforts towards ex post redistribution of existing surplus. For instance, long-term contracts that specify the terms and conditions for future transactions ex ante represent a remedy for ex post performance problems. In this perspective, contract duration is a key synthesis indicator in order to understand the mechanisms that drive the parties’ reciprocal incentives and surplus redistribution of value, in the context of Irish agricultural contracts.

In this perspective, the study follows a well-recognized body of literature, starting with the seminal papers by Joskow (1987) and Crocker and Masten (1988), and including the contributions of Saussier (2000), Masten and Saussier (2002), Onofri (2008). In particular, Masten and Saussier explain that the neo-classical and transaction cost approaches have dominated the economic analysis of contracting and that there is some overlap in the structure of the decision-making under these two approaches. In this research, we draw from the transaction cost approach to provide further understanding about the determinants of contract choice. While the standard neo-classical model emphasizes the roles of uncertainty and incentive alignment, the transaction cost approach views contracts as devices for reducing wasteful activities around the negotiation of surplus and the structuring of ex-post adjustments. Transaction costs include those associated with information, the negotiation and writing of contracts and their supervision, enforcement, and resolution in case of conflicts (Williamson, 1985). Transaction cost economics is particularly concerned with the specificity of investments as the risk of opportunistic behavior increases with the level of transaction-specific investments (Delmas and Marcus, 2004). A formal contract specifying, in advance, the terms and conditions for future exchanges, provides an appropriate mechanism to overcome the expropriation of specific investments (Hart and Holmstrom, 1987; Joskow, 1985, 1987).

Although a complete literature review goes beyond the scope of this paper, many recent studies in agricultural economics have explicitly followed the transaction cost approach. For instance, Bakucs et al (2013) use this approach to study contract choice among Hungarian farmers in the supply of milk to processors. Valentinov (2007) use the TCE approach to study the role of cooperatives in agriculture. Traversac et al (2011) use this approach to study the decision of wine producers in France to enter into direct selling. Wen and Chatalova (2021) adopt the TCE approach to study the impact of transaction costs on farm size in Germany.

Specifically, this research will further our understanding regarding the determinants of contract duration in agricultural land rental markets. Few econometric studies have addressed the determinants of contract duration in agricultural land markets in developed countries. The exceptions include Bandiera (2007) and Akerburg and Botticini (2002) both of which were concerned with the determinants of contract form

in Italian agriculture during the distant past. Marks-Bielska (2013) outlined some of the relevant theory but there is a void in terms of the economic literature dealing with the determinants of contract duration for land markets in today's agriculture.

Elsewhere, Ilbery et al (2010) use qualitative methods to explore the changing landlord-tenant relationship in England and consider the role of legislation including the Agricultural Tenancies Act of 1995 involving the introduction of the Farm Business Tenancy (FBT) and a move towards more formal contractualisation. The authors question the success of the FBT concluding that most FBT agreements have covered relatively small amounts of land under relatively short duration. The research identifies spatial patterns in the adoption of the FBT with greater adoption in the south relative to the north of England where traditional forms of leasing remain prevalent.

3 RESEARCH METHODS

The section presents the data, the selected empirical strategy and empirical results.

3.1. Data

The dataset for this research is based on a large sample of land leasing transactions from the Property Services Regulatory Authority (PSRA) in Ireland. The 2011 Property Services Regulatory Act stipulates that rental agreements should be registered with the PSRA in circumstances where an auctioneer is engaged in the transaction. The dataset contains information about transactions in the West and South-East NUTS 3 regions from 2013 to the onset of the COVID-19 pandemic in March 2020. The original data contained 3,644 transactions for agricultural land lease contracts in Ireland. However, 105 of these observations were deemed unusable mainly due to the absence of information about the parcel size or in a small number of instances where the declared parcel size is less than one acre i.e. 0.405 hectares. This leaves a final dataset of 3,539 transactions.

Each contract contains various types of information and provisions, spanning, among the others, on the agricultural activities performed by the tenant, rental value; dimension of the parcel; contract duration; payment frequency ; type of tenant(sole

trader or institution), geographical location of the parcels (county location), date of negotiations and entry into force of the contracts, a set of provisions that affect performance (e.g. legal notice, breaking clauses, insurance and so on).

In particular, some caveats need to be highlighted. We do not specify whether or not the land lease contract is completely new. However, we expect that a large majority of these contracts are new contracts i.e. not previously agreed under a formal written contract. Some of these parcels may previously have been rented on an informal basis with just one year duration i.e. under the *conacre* system (Patton and McErlean 2003; Geoghegan et al 2017). The amount of agricultural land in medium or long-term leases increased strongly from 2014 onwards and from quite a low base. This could be attributed to the abolition of milk quota and the expansion of tax incentive in 2015. The transaction data largely contains information about land lease contracts of at least five years duration. There is likely to be a high degree of inexperience in the setting of these formal written contracts. Such inexperience could play a number of roles. It could lead to more conditions such as break clauses and frequencies of payment as both parties exhibit greater caution. However, inexperience could also manifest itself in fewer conditions with implications for transaction costs at a later stage.

Table 1 reports descriptive statistics for selected variables. The average annual rental value is €7,538 with a standard deviation of €9,690 and a maximum rental value of €100,000. Interestingly, a small proportion of transactions have a zero value for the rent. This is not an unusual occurrence given that transactions may take place between relatives where a high degree of trust exists. Zero rent contracts are observed in all counties but appear relatively more prevalent in counties Galway and Mayo where some land can be quite marginal.

The average duration is 90.26 months with a standard deviation of 83.84 months. The minimum duration is five months and the maximum is 1,450 months. The average parcel size is 21.83 hectares with a standard deviation of 32.5 hectares thus pointing to high variability between transactions. The minimum parcel size in the dataset is 0.2 hectares and the maximum is 1,195 hectares. There is some variability in the type of land use with tillage land accounting for 33.4 per cent of transactions, pasture accounting for 65.4 per cent and forestry with 1.16 per cent of transactions. Break clauses apply to just 4.59 per cent of transactions with most transactions having no

evidence of this provision. Notice periods apply to just 2.91 per cent of transactions. Individual tenants have traditionally been the main source of demand for long-term land leases and account for 75.46 per cent of transactions. At the same time, organization tenants account for 24.54 per cent of transactions. Table 1 reports descriptive statistics for selected variables.

Table 1. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Annual Rent	7,538.05	9,690.02	0	100,000
Duration (Months)	90.26	83.84	5	1,450
Leased Land (Per Parcel)	21.83	32.50	0.2	1,195
Type of Agricultural Activity	Pasture (65.44%); Tillage (33.40%); Forestry (1.16%)			
County	Carlow (6.21%); Galway (19.56%); Kilkenny (19.73%); Mayo (13.20%); Roscommon (7.50%); Waterford (17.22%); Wexford (16.59%)			
Break Clause	No = 95.41%; Yes = 4.59%			
Payment Frequency	Annual (41.76%); Biannual (37.74%); One Installment (0.55%); Monthly (5.85%); Other (14.36%)			
Tenant Type	Individual Tenant (75.46%); Organization (24.54%)			
Rent Review	No = 70.4%; Yes = 29.6%			
Notice Period	No = 97.09%; Yes = 2.91%			

3.2. Empirical Strategy

The estimated relationship is simply exploratory in nature, with the objective to assess how (and how much) contract provisions affect the contract duration, attempting to interpret the results in a TCE framework. We adopt the two-stage least squares (2SLS) estimation techniques for operationalizing the relationship between contract duration and contractual provisions. The paper differs from the cited works because the analysis applies to long-term agricultural contracts. In addition, we enrich the econometric testing by using the three-stage-least squares (3SLS) routine as a methodological support to validate and explicitly value the 2SLS modelling².

Our modelling reasoning, and related choice of the empirical estimation method, is based on the evidence that a set of provisions is pre-determined and exists before contract, whilst another group of provisions are determined within the contract, together with the duration. In this perspective, we use the simple, linear specification in Equation (1) :

$$(1) (\text{Log}_-)Duration_i = \alpha_i + \beta_1 Y_i + \gamma_2 Z_i + \varepsilon_i$$

Where the dependent variable is contractual duration and is estimated in the logarithms. In (1), Y_i indicates the endogenous variables, including terms of contract, and Z_i indicates instruments. In particular, we estimate a simultaneous equation model where the selected instruments (i.e. the geographical location of the parcel) represent variables determined before contracting. The selected endogenous variables (i.e. inclusion of a breaking clause) represent provisions that are jointly determined within the contract and that are jointly determined with the contract duration. The model includes a constant and the error term.

Some technical clarifications are required. With respect to potential self-selection problems, it is the case that the dataset only contains information about observed land rental transactions and mainly transactions of at least five years duration. However, the dataset has the advantage in that it is regulatory data. Under the 2011 Property Services Regulatory Act, all rental agreements must be registered with the Property

² 3SLS estimations are available upon request.

Services Regulatory Authority (PSRA) in circumstances where an auctioneer is engaged in the transaction. Agreements must also be registered with the PSRA to permit landowners to avail of certain tax incentives. The dataset therefore contains a large share of the actual transactions taking place.

Informal rental agreements (~one year) are likely to have a lower value per hectare and are mainly excluded from the data. The addition of informal land rental agreements could lead to a different result for the relationship between rental price and duration. However, we are focusing on the duration of land rental agreements for formal contracts, which tend to be five years or more. On the supply side, there is likely to be some self-selection as older farmers and less viable farms are more likely to lease out their land. In some cases, the land may have been inherited and there is limited interest in farming. On the demand side, there is likely to be self-selection for younger and more profitable farms. Recent reports indicate that this is one of the main reasons for the letting out of agricultural land in Ireland (SCSI/Teagasc 2021). Some farmers have decided that there is sufficient owned land and these farms therefore do not appear on either side of the transactions.

Regarding the treatment of endogeneity problems, we are mainly relying on transaction level data with limited information about the farmers' characteristics. The variables, though, are selected following rigorous economic thinking and checked statistically. For instance, we expect that the location variables are good instruments because they do not have a direct influence on the duration. Due to differences in land quality, the county location can influence the land rental price and this is one of the main endogenous variables.

Finally, it is important to highlight that the duration of the contract is not expressed in discrete value. In particular, the empirical model, with the dependent variable in the logs, can be interpreted as a duration model, featuring log-normal hazards (see Onofri, 2008).

3.3. Empirical Results

Table 2 presents selected econometric results.

Table 2: SLS Estimation. Dependent Variable: (Log) Contract Duration

Instrumental Variables	Model 1	Model 2	Model 3	Model 4
(Log)Rent	0.15	0.07	-	-
No Rent	-	-	-0.70	-0.52
Break Clause	1.08	-	-	1.03***
Annual Payment	-2.21	-	-	-
Biannual Payment	-2.68	-	-	-
Monthly Payment	-4.36	-0.81*	-	-
Individual Tenant	-0.14	-0.48***	-0.65***	-0.72***
Notice Period	-1.31	0.83*	-0.76	-
Rent Review Clause	0.006	-	1.50	-
No Concession	4.53	3.98***	0.74	-
Tenant Repairs	0.06	-	0.04	-
Constant	0.96*	0.08	2.98	4.82***
Diagnostics	Wald chi2(10) = 12.17 Prob > chi2 = 0.27	Wald chi2 (5) = 26.09 Prob > chi2 = 0.001	Wald chi2 (7) = 31.07 Prob > chi2 = 0.0001	Wald chi2 (3) = 32.21 Prob > chi2 = 0.0000
Instruments: logarea tillage forestry Galway*size Kilkenny*size Mayo*size Roscommon*size Waterford*size Wexford*size year_2013 year_2015 year_2016 year_2017 year_2018 year_2019				

In general, it is worth highlighting that very few legal provisions affect the selected dependent variable. Preliminary results show that if the contract includes a break clause, a notice period clause, a rent review provision, a tenant repair clause, and a “no concession” provision³, then the contract duration extends to longer periods. On the contrary, the higher the rent the tenant has to pay, the longer the contract. In this perspective, estimated coefficients for models 1-2 show that a 1% increase in the contract rent generates a 0.15% /0.07% increase in the contract duration respectively.

If the tenant is an individual (and not an organization, for instance a company), the contract duration is shorter. When the land lease contract does not include a rent payment, the contract duration is shorter.

In particular, the results for the estimation of model 1 include all available contractual provisions. This has an informative purpose, even if most estimated coefficients are not statistically significant and the overall diagnostic of the model indicates that the explanatory power of the empirical specification is low and misleading. Estimates for model 2 only include statistically significant estimated coefficients for contractual provisions' variables. The same reasoning holds for the results from the estimations of models 4 and 5, for the group of contracts that do not include a rent payment.

Selected instruments are the parcels area, the type of agricultural activity performed in the contract (tillage, forestry, and so on); the geographical location of the parcel (being the county where the parcel is located, also a proxy indicator for the economic milieu, within which the contract is negotiated, signed, and enforced); the year when the contract has entered into force.

5 DISCUSSION

In this paper, we have introduced a new approach to the measurement of farm economic viability in a developed country. We have adopted an approach, which is widely applied in the poverty literature by estimating a farm viability gap and a farm severity index and we outline the theoretical foundations for this methodological

³ The variable ‘concession’ refers to concessions given by the landowner to the tenant. It appears that some tenants are given the benefit of reduced rent if they undertake fencing or other improvements around the farm.

approach. Selecting Ireland as a case study, we analyse the trends in the headcount ratio, the viability gap and the farm severity index from 2010 to 2018. We identify interesting results in relation to the impact of the summer drought on farm viability during 2018. The results suggest that multiple indicators should be considered in assessing the state of farm viability.

The results show that farm economic viability has fluctuated in recent years, but that a majority of farms in Ireland are economically non-viable. The magnitude of the estimated viability gap adds to our understanding about the scale of the viability challenge on farms in Ireland. Under the viability gap measure, the average non-viable farm appears to be far removed from the income threshold, which would render those farms economically viable. The improvement of farm viability in Ireland is multifaceted with solutions dependent on individual farm circumstances. Large viability gaps are likely to remain in the absence of structural changes or significant policy reforms, which target the reduction in the viability gap itself.

More positively, the viability gap in areas of natural constraints appears to have improved between 2014 and 2017, which may be partly attributable to the redistribution of farm subsidies under the CAP 2014-2020 programme. This positive development does not appear to be occurring in other more intensive agricultural regions. This less promising trend emerges despite the milk quota abolition and the improved farm viability on dairy farms. The viability gap on tillage farms has been relatively low and stable between 2010 and 2018. In more intensive agricultural regions, the dis-improvement in the viability of non-dairy cattle farms may also be linked to the spatial redistribution of subsidies but this requires further research. In addition, future research can examine the distinction between chronic non-viability and cyclical or short-term episodes of non-viability.

6 CONCLUSION

The study has performed econometric analysis of (selected) factors that affect contract duration, with an application to agricultural land lease contracts in two regions in Ireland. Results corroborate TCE theory. Contracting parties, whilst negotiating upon duration, need to balance the need of securing a long-term horizon for the generation of mutual surplus from contracts execution and the need to guarantee flexibility to

adapt to changing circumstances. Empirical findings support, in the case at issue, such a theoretical approach. Most estimated coefficients of contractual provisions, however, are not statistically significant.

Furthermore, the statistically significant coefficients associated with variables that improve the flexibility of the contract allows us to argue that other factors (important for TC generation but not included in the parties' bargaining possibility set), such as the policy context and incentives (tax incentives and subsidies), may drive the decision-making of both tenants and landowners.

Indeed, when the tenant is an individual farmer (more likely to be a recipient of agricultural policy support), we observe the tendency to reduce the length of the contract. This behavior can be justified by the need to manage the uncertainty coming from the recursive reform of the CAP.

This might imply that even if long term contracts contain important TC minimizing provisions (break clause, notice clause, individual tenant), they do not appear to represent the most TC minimizing governance structure. Policy instruments "imposed" by economic or regulatory reform can override the concern for TC minimizing provisions that may be expected to emerge from the parties acting rationally and independently. The abolition of milk quota and the expansion of tax incentives have undoubtedly influenced the decision of many landowners and tenants to enter into the land leasing market but this may be occurring in the absence of sufficient consideration for the importance of TC minimizing provisions and the adoption of TC minimizing governance structures that are different from long-term contracts (TC are not administrative costs). Obviously, the results (and suggested implications) are derived from an analysis that is based on data about transactions registered with the relevant regulatory authority. Some transactions may not be registered with the regulatory authority. Informal one-year renting agreements are mainly excluded from the official register and these transactions lie outside the scope of the research.

In this perspective, further research might focus both on (1) analyzing the intended use on the duration of the rental contract (pasture, tillage and so on) and (2) thinking, designing and comparing alternative governance structures (short-term contracts or

other hybrid structures, like contracts that transfer the performance risks, or coordinated agreements between the parties) that might better implement the Irish reform of the land lease. The duration of rental contracts, in fact, is regulated in some of the EUSCs, which influences the responsiveness of the rental market to agricultural policy changes. The length of rental contracts is regulated by the government in Belgium and France (with a contract duration of nine years minimum), the Netherlands (six years minimum) and Spain (five years minimum). In several EUSCs (e.g. France), the renewal/ inheritance of rental contracts is also regulated. The prevalence of land renting is typically higher in countries with strict rental market regulations, such as Belgium and France. In these countries, formal rental markets are stickier and the time lag is longer in adjusting to policy changes.

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