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Laure Latruffe, Sophia Davidova

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**CAP direct payments and distributional conflicts within corporate farms in the
New Member States: A game theory approach focusing on rented land**

Laure Latruffe
INRA – ESR Rennes, France

Sophia Davidova
Imperial College London, UK

Corresponding details

Laure Latruffe
INRA – Unité ESR
4, Allée Bobierre
CS 61 103
35011 Rennes Cedex
France
Email: Laure.Latruffe@rennes.inra.fr
Phone: 0033 (0) 2 23 48 53 82

CAP direct payments and distributional conflicts within corporate farms in the New Member States: A game theory approach focusing on rented land

Abstract

This paper aims to investigate whether distributional issues within corporate farms in the New Member States will be exacerbated by the introduction of the Common Agricultural Policy (CAP) direct payments. The paper focuses on the specific impact of the direct payments on the rent negotiations between corporate farms and private landowners. If the latter are not satisfied with the level of rent they receive, they have the option to end their rental contract and withdraw their land from the farm. In this paper, game theory is used to model the negotiations between a corporate farm's manager and a representative landowner.

The model suggests that the CAP direct payments might induce more rent renegotiations, and that the latter will be successful and thus not followed by withdrawals. Results from a survey of thirty-three landowners in Slovakia and the Czech Republic corroborate these findings. They indicate a potential change in landowners' behaviour induced by the introduction of the CAP direct payments, namely that more landowners intend to renegotiate their rent level in the next five years. All this leads to the conclusion that the CAP support will not result in the quick disappearance of corporate farms.

Keywords: CAP direct payments, corporate farms, Czech Republic, distributional conflicts, game theory, landowners, Slovakia,

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CAP direct payments and distributional conflicts within corporate farms in the New Member States: A game theory approach focusing on rented land

1. Introduction

Since 2004, farmers of the New Member States (NMS) of the European Union (EU) have been entitled to receive direct payments under the Single Area Payment Scheme (SAPS).¹ An important issue arising from the application of these payments is their potential effect on corporate farms. As these Common Agricultural Policy (CAP) payments will be allocated to farm holdings, they might exacerbate the distributional conflicts among the various stakeholders within the corporate farms, including landowners, non-land asset owners, workers and managers.

The distributional issues in the corporate farms relate to the way profit (including direct payments) is distributed between rentals, dividends, wages and investment. As noted by Brem and Kim (2000), a corporate farm can be considered as an economic organisation consisting of different interest groups (the various stakeholders) who bargain on the objectives of this organisation. These interest groups include the managers, the capital holders, the landowners and the workers.

As stated, the CAP payments are paid to the farm holdings; thus their use will be at the discretion of the corporate farms' managers. The latter have several options, such as using the payments for the current business operations, for investment, for repayment of debts or for increasing the payments to the various stakeholders as dividends, rents or wages. Since the managers derive an increasing utility from the farm growth, it has been assumed here that they would prefer to use the payments for the farming business rather than for the stakeholders' returns. Therefore, the CAP direct payments might exacerbate the conflicts between the various stakeholders within corporate farms regarding the use of profit. This study focuses on the conflicts between managers and landowners. This is an important issue for some of the NMS where corporate farms (producer co-operatives, joint-stock companies and limited liability companies) cultivate the majority of agricultural land, e.g. the Czech

¹ Slovenia and Malta are exceptions as they opted for the standard EU direct payments scheme.

Republic and Slovakia. Corporate farms rent most of their utilised agricultural area from individual landowners. If the latter are not satisfied with the level of rent they receive from the farm, they have the option to end their rental contract and withdraw their land from the farm. Before accession to the EU, the landowners did not have strong incentives for withdrawal, as the other available opportunities did not bring higher returns on land ownership. In particular, private farming was viewed as not profitable. However, this situation might change, as landowners can now cash the direct payments themselves, providing they keep their land in good agricultural and environmental condition.

This paper aims to provide an assessment of the potential impact of the introduction of the CAP direct payments on the corporate farms in the NMS, focusing particularly on rented land. Two approaches are used in the study. First, a game theory model is applied as a theoretical framework for the negotiations between farm managers and landowners about the level of rent. These negotiations are at the core of the issue, as landowners would withdraw their land when they are not satisfied with the level of the rent proposed by the corporate farm. Second, conclusions from the theoretical model are compared with results from a pilot survey of landowners in Slovakia and the Czech Republic.

The paper is structured as follows. The second section represents the theoretical model. Section 3 summarises the results from the survey and Section 4 concludes.

2. Representation of the negotiation process: a game theory model

2.1. Description of the game

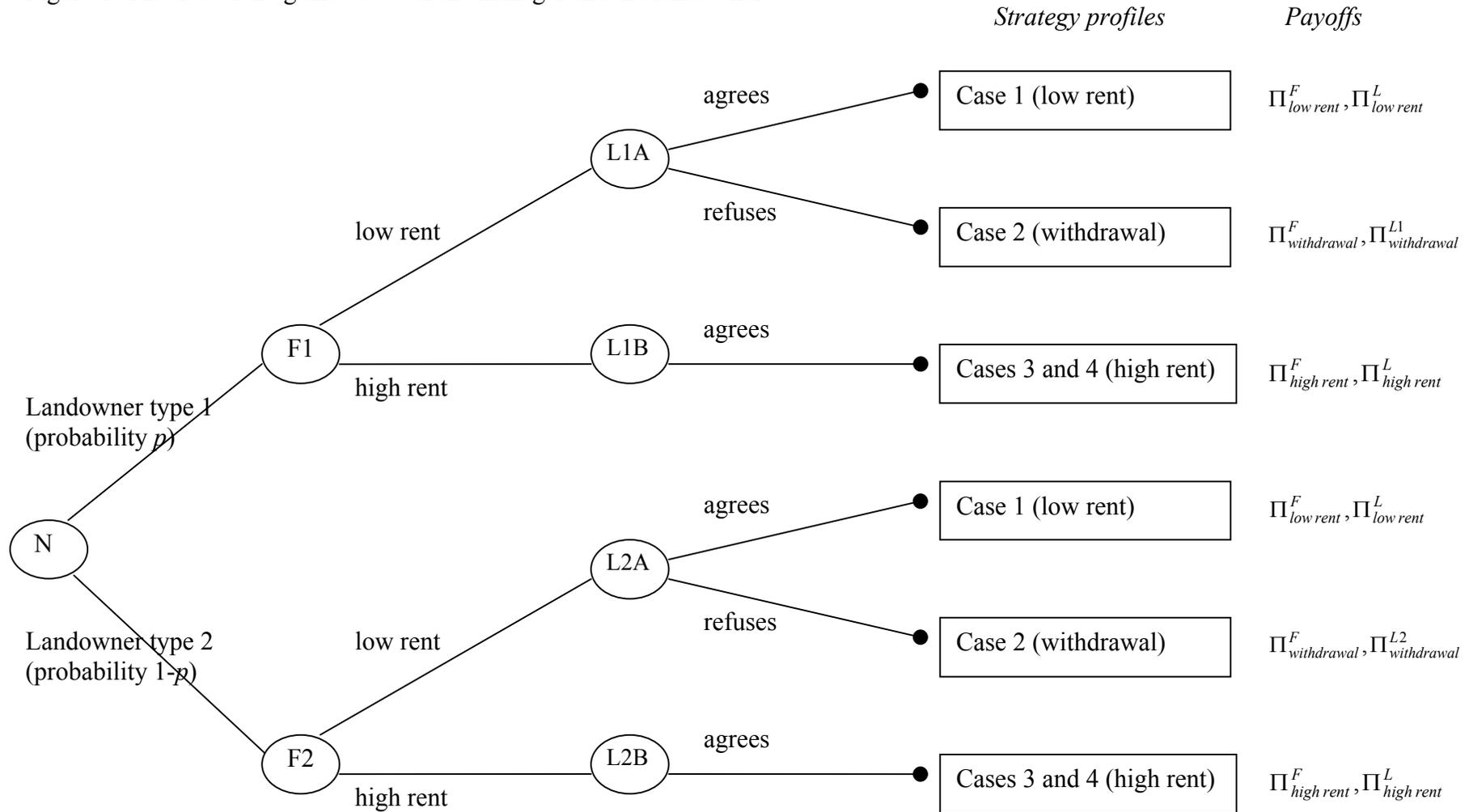
In order to investigate the distributional conflicts about land, game theory is used to model the rent negotiation process within the corporate farms between two representative players, the manager and a landowner. This game is designed in such a way that allows it to be an appropriate representation of the negotiation process that usually occurs in the corporate farms. The conclusions about the game's solution will be subsequently revised in the light of the introduction of direct area payments.

The game is represented in its extensive form by the tree depicted in Figure 1. It is a sequential non-cooperative game, where players move one after another. First, focus on the upper part of the tree from node F1. The farm's manager is F, who makes the

first move by announcing to the landowner, L, the level of the rent. It is assumed that only two offers are possible, a low rent and a high rent. The low rent is the rent that is usually paid to the landowners, while the high rent includes an increase following a renegotiation. Once the manager has played, the landowner decides whether to accept or to refuse the rent proposed. If they accept, the game ends and the land is rented at the agreed rent level. If they refuse, the game also ends but the rental contract is terminated and the land is withdrawn. However, this can only happen when low rent is offered. When high rent is offered, it is assumed that the landowner never refuses it. In other words, the high rent always matches the landowner's expectation: it is not less than what the landowner could get elsewhere.

For simplicity, the negotiation has been kept to a minimum number of stages, that is to say the game is assumed to be a one-shot and not a repeated game. The process described by this tree is therefore not exactly a negotiation process, as only one round is assumed and hence there is no bargaining over a number of repeated stages. However, while such a representation has been preferred to keep the model simple, it can still be viewed as an appropriate representation of the reality. Players might indeed be exposed to high transaction costs during the negotiation and therefore might be encouraged to keep the process as short as possible.

Figure 1: The tree of the game between the manager and the landowner



N: Nature. F: corporate farm's manager. L: landowner.

There are four possible strategy profiles for the game (Table 1), and hence four possible payoff vectors (Table 2). Tables 1 and 2 offer an alternative representation to the game tree, showing the actions available to each player. From the tree in Figure 1 it is clear that the farm's manager can choose between the two actions "offer low rent" and "offer high rent". As for the landowner, the tree shows that they can either agree or refuse. This is based on their willingness to accept a low or high rent. Hence, the process can alternatively be viewed as the manager and landowner meeting together once to decide about the level of the rent, and making simultaneous offers. The landowner would then ask either for a low rent or for a high rent, hence the two possible actions "low rent" and "high rent" in Tables 1 and 2.

Table 1: The possible strategy profiles of the game

		LANDOWNER	
		Low rent	High rent
FARM	Low rent	Case 1	Case 2
	High rent	Case 3	Case 4

Table 2: The payoff vectors of the game

		LANDOWNER	
		Low rent	High rent
FARM	Low rent	$\Pi_{low\ rent}^F, \Pi_{low\ rent}^L$	$\Pi_{withdrawal}^F, \Pi_{withdrawal}^L$
	High rent	$\Pi_{high\ rent}^F, \Pi_{high\ rent}^L$	$\Pi_{high\ rent}^F, \Pi_{high\ rent}^L$

Case 1

If both players choose the action “low rent”, they agree on this rent. The landowner rents the land out to the farm and the respective payoffs are denoted $\Pi_{low\ rent}^F$ for the farm and $\Pi_{low\ rent}^L$ for the landowner.

Case 4

This is similar to Case 1. If both players choose the action “high rent”, they agree on this rent. The respective payoffs are $\Pi_{high\ rent}^F$ for the farm and $\Pi_{high\ rent}^L$ for the landowner. Of course, the farm prefers its payoff from Case 1 (low rent) while the landowner favours Case 4 (high rent), that is to say the following relationships apply:

$$\Pi_{low\ rent}^F > \Pi_{high\ rent}^F$$

$$\Pi_{low\ rent}^L < \Pi_{high\ rent}^L .$$

Case 3

In this case, the landowner asks for a low rent while the farm’s manager proposes a high rent. Although both offers are different, it is straightforward to assume that there is an agreement on renting the land at the high rent. The payoffs are thus as in Case 4.

Case 2

This is the case that reflects the conflicts. If the farm’s manager offers a low rent but the landowner asks for a high rent, there is no agreement on the level of rent and the rental contract is ended. The landowner withdraws their land from the farm. The payoffs are respectively $\Pi_{withdrawal}^F$ for the farm and $\Pi_{withdrawal}^L$ for the landowner. Experiencing a land withdrawal is costly for the farm, as it reduces the area farmed and hence decreases the revenue and farm profit. Therefore, the farm’s withdrawal payoff is less than the payoff in the worse case of an agreement on the rent (i.e. with high rent):

$$\Pi_{withdrawal}^F < \Pi_{high\ rent}^F .$$

As for the landowner, two cases are possible as the landowner can be of two types. The landowner’s decision of accepting or refusing the level of rent proposed by the manager depends on whether they have a better opportunity elsewhere for their land.

This is modelled here by introducing two types of landowners. Type 1 is a landowner who has a better opportunity for the land outside the corporate farm. For example, another farm might have offered a higher rent, or they might be able to obtain a higher payoff by farming the land privately or by receiving the CAP direct payments without producing. In other words, such a landowner represents a credible threat of withdrawal. By contrast, the type 2 is a landowner who has no better opportunity for their land elsewhere, and there is no credible threat of withdrawal. Let us denote the probability that the landowner is of type 1 (credible threat) by p , that is to say the proportion of type 1 landowners in the population. $(1-p)$ is hence the probability of landowner of type 2 (no credible threat). In the game tree in Figure 1, Nature (N) actually plays the first move of the game, by randomly choosing the type of landowner. But paths from nodes F1 and F2 are similar, and only the probability of the path, p or $(1-p)$, and some payoffs differ.

In the case of type 1 (credible threat), the landowner's payoff when withdrawal occurs is strictly greater than the payoff in the case they rent land to the corporate farm, but it has been assumed here that it is possible to be equal to the payoff when they receive a high rent from the corporate farms:

$$\Pi_{withdrawal}^{L1} > \Pi_{low\ rent}^L \text{ and } \Pi_{withdrawal}^{L1} \geq \Pi_{high\ rent}^L .$$

In the case of type 2 (no credible threat), the landowner's payoff when withdrawal occurs is strictly less than any payoff received when they rent land to the corporate farm:

$$\Pi_{withdrawal}^{L2} < \Pi_{low\ rent}^L \text{ and } \Pi_{withdrawal}^{L2} < \Pi_{high\ rent}^L .$$

Summary of the payoffs

Table 3 below summarises the relationships between the three possible payoffs for each player.

Table 3: Relationships between the payoffs for each player

Farm	$\Pi_{low\ rent}^F > \Pi_{high\ rent}^F > \Pi_{withdrawal}^F$
Landowner type 1 (credible threat of withdrawal)	$\Pi_{withdrawal}^{L1} \geq \Pi_{high\ rent}^L > \Pi_{low\ rent}^L$
Landowner type 2 (no credible threat)	$\Pi_{high\ rent}^L > \Pi_{low\ rent}^L > \Pi_{withdrawal}^{L2}$

2.2. Solving the game

Finding the solution to the game allows the outcome that is most likely to happen in reality to be predicted. For solving the game, it has been assumed that both players will choose to play the strategy that maximises their payoff. Two situations will be explored here. First, it will be assumed that the landowner's type is common knowledge, therefore the manager knows about the type of landowner they face. Next it will be assumed that the manager has incomplete information about the opponent's type and that the cost of observing the landowner's type is very high for the manager. However, the manager knows the prior probability of the landowner's types, p and $(1-p)$.

The optimal strategies of both players are firstly investigated, keeping in mind the payoffs resulting from each strategy (Table 2) and the relationships between the payoffs (Table 3). Then, using these optimal strategies, the game solutions are derived, in both cases of common knowledge and asymmetric information about the landowner's type.

The landowner's optimal strategy

- The landowner is of type 1 (credible threat)

The landowner is indifferent between receiving a high rent in the corporate farm and withdrawing the land, since $\Pi_{withdrawal}^{L1} \geq \Pi_{high\ rent}^L$. But the landowner rules out renting out the land to the corporate farm for a low rent. In other words, if the farm plays "low rent", the landowner's best response is to play "high rent", and if the farm plays "high rent", the landowner is indifferent between "low rent" and "high rent". Therefore, to ask for a high rent is a strongly dominant strategy, as it will be played

by the landowner regardless of what might be played by the opponent (Rasmusen, 1994).

- The landowner is of type 2 (no credible threat)

This landowner has no better opportunity for the land and hence wishes to keep it in the farm, as $\Pi_{low\ rent}^L > \Pi_{withdrawal}^{L2}$. Because the game is a one-shot game, if the landowner asks for a high rent, while the farm proposes a low rent, the rental contract is ended, which is not favourable to the landowner. Hence, if the farm plays “low rent”, the landowner’s best response is to play “low rent”, and if the farm plays “high rent”, the landowner is indifferent between “low rent” and “high rent”. Thus, in order to avoid the termination of the rental contract, the landowner asks for a low rent, which is a strongly dominant strategy.

The farm’s manager’s optimal strategy

There is no dominant strategy for the manager, as their payoff maximisation depends on the landowner’s strategy. If this were not the case, the farm would be better off giving a low rent. However, the farm’s manager needs to take into consideration the possible withdrawal action by the landowner, which affects the farm’s profit. Hence the manager has a set of two best responses. If the landowner plays “low rent”, the manager’s best response is “low rent”, but if the landowner plays “high rent”, the manager’s best response is “high rent”.

The solutions

- Situation A: the manager knows the landowner’s type

Finding the solution in this situation is straightforward. The manager knows about the type of the landowner, and hence knows which action will be taken by the opponent. Type 1 chooses to play “high rent” and the manager will play their best response, which is “high rent” as well, so that the costly withdrawal outcome is avoided. With both players choosing a high rent, the outcome is Case 4. Type 2 chooses to play “low rent”, and the manager will play “low rent” as well. With both players choosing a low rent, the outcome is Case 1. Hence, in the case of a type 1 landowner (credible threat), the landowner rents out their land to the farm at a high rent, while in the case of a type 2 the landowner also rents out the land to the farm but at a low rent. This means that,

in reality, if the manager can observe the landowner's type, the land always stays in the corporate farm.

- Situation B: the farm's manager does not know the landowner's type

In this situation, the manager cannot identify the type of the opponent but knows the proportion of both types in the population (p and $1-p$). Hence, the manager knows that "high rent" will be played by the opponent with probability p , and "low rent" will be played with probability $1-p$. The manager's strategy will thus be to play their best responses according to these probabilities. Therefore, Case 1 will occur with probability $(1-p) \times (1-p)$, Case 4 will occur with probability $p \times p$, and Case 2 and Case 3 will both occur with probability $p \times (1-p)$.

In this situation, the solution of the game depends on the value of the probability p . If p is very large, i.e. if the proportion of landowners with credible threat (type 1) in the population is very high: $p \times p > p \times (1-p) > (1-p) \times (1-p)$, hence the most probable case will be Case 4 – the land will be rented out for a high rent. On the other hand, if p is very low, i.e. if the proportion of landowners with credible threat in the population is very small: $(1-p) \times (1-p) > p \times (1-p) > p \times p$, hence the most probable case will be Case 1 – the land will be rented out for a low rent. In this situation withdrawals are never likely to be predominant. At most, the probability for Case 2 to occur is 0.25 (when $p=0.5$), but then all other cases also have probability 0.25. In this situation, the outcome "renting with high rent" will therefore be predominant (probability 0.5 from Cases 3 and 4).

Summary of the solutions

In Table 4 the solutions of the game are boxed. Case 1 ("low rent" played by both players), boxed once, is the solution when the landowner is of type 1 (credible threat) and the farm's manager can identify this type. Case 4 ("high rent" played by both players), boxed twice, is the solution when the landowner is of type 2 (not credible threat) and the farm's manager can identify this type.

When the landowner's type is not known by the farm's manager, all cases can be solutions, with a specific probability. However, if the proportion of type 1 landowners is large, Case 1 is the predominant solution (boxed once), while in opposite if the proportion of type 2 landowners is large, Case 4 is the predominant solution (boxed twice).

Therefore, the game predicts that withdrawal is a highly improbable outcome. However, the whole game has been based on the assumption that the farm is able to offer two levels of rent low and high. If the farm is financially constrained and cannot afford a rent increase, the game reduces to Case 1 and Case 2 (i.e. to the upper half of Table 4). In such a situation, the dominant strategies of the landowner help predict that in the case of a type 2 landowner (no credible threat) the solution will still be Case 1 (low rent), but in the case of a type 1 landowner (credible threat) the solution will be Case 2, that is to say withdrawal.

Table 4: The game's solutions

		LANDOWNER	
		Low rent (1-p)	High rent (p)
FARM	Low rent (1-p)	Case1 $\boxed{\Pi_{low\ rent}^F, \Pi_{low\ rent}^L}$	Case 2 $\Pi_{withdrawal}^F, \Pi_{withdrawal}^L$
	High rent (p)	Case 3 $\Pi_{high\ rent}^F, \Pi_{high\ rent}^L$	Case 4 $\boxed{\Pi_{high\ rent}^F, \Pi_{high\ rent}^L}$

- Solution for landowners of type 1 (credible threat)
- Solution for landowners of type 2 (no credible threat)

2.3. The effect of the CAP direct payments

The game theory framework presented above allows conclusions to be drawn on the possible outcomes that are likely to arise from the conflicts of interest that usually occur within the corporate farms about the level of rent. When landowners are not satisfied with the level of rent they receive, they may ask for a rent increase, thus play “high rent”. The game described above is hence appropriate to represent this rent renegotiation. It suggests three potential outcomes.

1) No change in the rent level (game outcome “low rent”)

This is likely to happen in reality, whatever information the manager has about the opportunities of the landowner elsewhere. However, the larger the proportion of landowners with better opportunities elsewhere (credible threat), the less frequent this outcome will be.

2) Increase in the rent level (game outcome “high rent”)

This is also likely to happen in reality, whatever information the manager has. The larger the proportion of landowners with better opportunities elsewhere, the more frequent this outcome will be.

3) Withdrawal of land (game outcome “withdrawal”)

This outcome would be observed for farms whose landowners have better opportunities elsewhere but this is not known to the manager, or for any farm which is financially constrained and hence cannot afford a rent increase.

In reality, before accession to the EU and CAP implementation, Outcome 1 (no change in rent) prevailed. Most landowners did not have better opportunities for their land elsewhere, as private farming was unprofitable and corporate farms were not able to compete with each other in terms of rent level. Hence, Outcome 2 (rent renegotiation) was infrequent. As for Outcome 3 (land withdrawal), this might have happened, but only for the reason that farms were financially constrained. The other reason, namely asymmetric information, seems less realistic. Within the traditional village and community life in Central and Eastern Europe, the managers probably have sufficient information about their landowners (social and values characteristics) and their plot (size, location and quality), and about the other neighbouring farms that might offer higher rent, and hence should be able to decide about the type of landowner they face during the rent renegotiation.

From the model, it can be predicted that the introduction of CAP direct payments in the NMS might decrease the frequency of Outcome 1 due to two reasons. First, more landowners might be able to put a credible threat of withdrawal. Landowners are now entitled to the single area payments without the requirement to produce. These payments might hence give incentives to landowners to manage their land themselves, if the profit from it were to exceed the rent they receive in the corporate farms. Also, the land might become more attractive and valuable, and landowners might be offered

a higher rent elsewhere (e.g. by individual farmers) or a high selling price. That is to say, the probability p of type 1 landowners might increase. Therefore, the first outcome “no change in the rent level” is less likely to be observed since enlargement. In other words, it can be expected that more landowners will ask for a rent renegotiation. The question is whether this would lead to rent increases or withdrawals. On the one hand, withdrawals can occur if landowners have private information about their opportunities, unknown to the managers. In reality, this situation might however be rare, as explained above. On the other hand, withdrawals can occur in farms that cannot financially afford to increase the rents. Although this was highly probable during the transition due to the low profitability or the loss-making on the corporate farms, the introduction of direct payments should relax this financial constraint. Hence, the third outcome “withdrawal of land” is less likely to happen after the introduction of the direct payments.

3. Results from a survey in Slovakia and the Czech Republic

In order to cross-check the theoretical findings from the game theory approach, a small survey was undertaken in Slovakia and the Czech Republic in early 2005. A questionnaire was sent to owners of land in corporate farms as a part of a pilot survey. The questions related to the owners’ past behaviour and their future intentions within a five-year horizon regarding rent renegotiation and land withdrawal. Thirty-three landowners were surveyed, 14 in Slovakia and 19 in the Czech Republic. Most of the respondents were currently employed, while the remainder were retired. None of the respondents had a private farm. The average age of the respondents was 50 in Slovakia and 58 in the Czech Republic. Fewer than one third of the landowners surveyed lived less than 10 kilometres away from the corporate farms where they rented out their land. Some lived far away, further than 250 kilometres. Most of the respondents have had relations with the corporate farms’ management for more than ten years. Most of the respondents knew some or all of the other landowners in the corporate farm. Table 5 presents some characteristics about the plots of the respondents. In both countries the average size of the plots is very small, less than three hectares, with a maximum of less than 20 hectares. The inheritance law in both countries, which allows land to be split between heirs, helps explain this fragmented structure. The annual average rent received per hectare is less than 40 euros, which is

larger than the national averages (e.g. 22 euros in Czech corporate farms in 2003; VUZE, 2004) but low in comparison with some other countries (e.g. 115 euros in France 2002; Agreste, 2002).

Table 5 also provides information about the past rent renegotiations and land withdrawals. Three respondents in total were offered a higher rent for their plot outside the corporate farm in the past two years. For two of them the offer came from an individual farm and, for the third one, the offer originated from another corporate farm. This suggests that opportunities for increases in returns on land ownership were limited. This may explain why only two landowners have asked for a rent increase in the past two years, only one respondent in each country. The Czech landowner asked for a 10 percent increase, on the ground of inflation, and had the request accepted. The Slovak landowner justified the demand by the fact that other landowners in the corporate farm had had their rent increased. But the 50 percent increase requested was not accepted due to financial constraints in the corporate farm. Eventually, this landowner decided to keep the land in the corporate farm despite the stagnation of the rent level. Five Slovak and four Czech landowners had considered asking for a rent increase. The main reasons for considering a rent increase were inflation and that other landowners had received an increase. However, they did not proceed with the requests mainly because they thought they would not get it as the corporate farm would not be able to afford it. And for two of them, the transaction costs of negotiation would have exceeded the benefit of the rent increase.

As for past withdrawals, two Slovak and three Czech landowners withdrew some land from the corporate farm in the past five years. In Slovakia, they were not happy with the level of rent, while in the Czech Republic, they were not satisfied with the way their land was used. After withdrawing, two owners sold their small parcels (0.5 ha) and the other three rented their land to another farm. Most of the other respondents never considered withdrawing their land because there were no better opportunities elsewhere in terms of the level of rent or profit from private farming. In addition, it was easier for them to have their land managed by somebody else.

Table 5: Results from the survey of landowners

	Slovakia	Czech Republic
Number of landowners surveyed	14	19
Size of the plots (ha)		
Average	2.14	2.96
Minimum	0.15	0.09
Maximum	15	17
Annual rent per ha (euros)		
Average	34.6	39.0
Minimum	0	0
Maximum	166.7	412.7
Number of landowners who were offered a higher rent elsewhere in the past 2 years	1	2
Number of landowners who asked for a rent increase in the past 2 years	1	1
Increase asked	50%	10%
Number of landowners who had their request accepted	0	1
Number of landowners who withdrew land in the past 5 years	2	3
Land withdrawn (ha)	15 and 0.5	0.5, 0.5 and 4
Share of landowners who, due to CAP direct payments, consider in the next 5 years (%):		
asking for a rent increase	14	37
withdrawing land	29	5
not doing either of these	57	58

Finally, Table 5 reports the results from the last part of the questionnaire, which focused on the landowners' intentions within a five year horizon in the CAP context. The modalities of the CAP direct payments were explained to the respondents, although most of them seemed to be well aware of them. Landowners were then asked whether the introduction of CAP direct payments in their country would affect their behaviour towards the corporate farm in which they were renting land. While the majority claimed that their behaviour would not be influenced, more than 40 percent in each country admitted considering renegotiating their rent or withdrawing. Interestingly, the majority of them (37 percent) in the Czech Republic were considering asking for a rent increase, while in Slovakia the majority (29 percent) were considering withdrawing their land.

5. Conclusion

The widespread existence of corporate farms in the NMS has raised doubts about their viability under the decoupled direct payments. The preference of the newly emergent landowners in the 1990s to leave their land in the corporate farms was linked to the low level of farm profitability and a high risk in the economic environment. The accession to the EU and the introduction of the CAP support, and in particular direct payments per hectare, have improved the market conditions in these countries and have increased farm incomes. The main question is whether under these circumstances the landowners would still prefer to leave their land in the corporate farms, or whether a quick disintegration of these organisations will be witnessed. This paper develops a theoretical framework about the negotiations between a corporate farm's manager and an individual landowner about the level of the land rent.

The theoretical model suggests that the CAP direct payments might induce more rent renegotiations. Overall these renegotiations will be successful and thus will not be followed by withdrawals. However, the renegotiations may take a long time to gain speed. First, at the beginning the landowners might not be well aware of all modalities of the direct payments and hence might not ask quickly for a rent renegotiation. Second, most of the landowners own small parcels of land and direct payments in the NMS are currently relatively low (on average, 25 to 55 percent of the level in the EU-15). Hence the direct payments per landowner, if withdrawing land for private

management, might not be enough to offset the costs of maintaining the land in good agricultural and environmental condition (in this respect much will depend on the level of enforcement in the NMS).

The results from the landowners' survey seem to corroborate the findings from the theoretical game. Before accession, very few landowners asked for a rent increase or withdrew land, confirming that the first outcome "no change in the rent level" was the prevailing one. The survey also indicated a potential change in landowners' behaviour induced by the introduction of the CAP direct payments. While in the past in Slovakia only 7 percent of the respondents asked for a rent increase and 14 percent withdrew some land, these figures doubled when people were asked about their intentions following the introduction of the CAP payments. In the Czech Republic, people intend to renegotiate the rent level. Hence, the survey confirms that the second outcome "increase in the rent level" predicted by game theory might be the prevailing one following the introduction of the CAP direct payments. All this leads to the conclusion that the CAP support will not result in the quick disappearance of corporate farms and that their future will depend on their competitive position in the same way as the competitive forces shape the future of the individual farms in the NMS.

References

- Agreste. (2002). *L'Agriculture, la Forêt et les Industries Agroalimentaires*. Ministère de l'Agriculture et de la Pêche, Paris.
- Brem, M. and Kim, J.-M. (2000). A status of agricultural producer cooperatives in East European Countries. *Korean Journal of International Agriculture*, 12(3), 238-256.
- Rasmusen, E. (1994). *Games and Information – An Introduction to Game Theory*. Second edition. Cambridge, MA: Blackwell.
- VUZE. (2004). *FADN Data 2003*. Research Institute of Agricultural Economics, Prague.