

# The right of withdrawal in the treaty of Lisbon: a game theoretic reflection on different decision processes in the EU

Susanne Lechner · Renate Ohr

Published online: 12 January 2010

© The Author(s) 2010. This article is published with open access at Springerlink.com

**Abstract** The ways of decision-making within the EU have significantly changed in the last decades: The rule of unanimity has been more and more substituted by majority voting in order to speed up decision-making processes in a Union of 27 heterogeneous member states. A third possibility is now offered by the Lisbon Treaty including a constitutional right of withdrawal. A member state encountering a loss in its benefits caused by a decision made by majority voting may now demand compensating transfers by using the right of withdrawal. It might threaten to leave the EU if the compensation is denied. Hence, does this mean that member states now have regained a negotiation power comparable to the right to veto? Using a game theoretic approach we investigate the amount of compensating transfers to be offered under majority decisions with exit option compared to decisions requiring unanimity.

**Keywords** European integration · EU decision-making · Right of withdrawal · Exit option · Game theory

**JEL Classifications** C 70 · D 70

## 1 Introduction<sup>1</sup>

For the first time since the foundation of the European Community more than 50 years ago, an explicit option of withdrawal from the Community has been set down

---

<sup>1</sup> We thank the unknown referee for very helpful comments.

---

S. Lechner · R. Ohr (✉)  
Faculty of Economic Science, University of Goettingen, Platz der Goettinger Sieben 3,  
37073 Goettingen, Germany  
e-mail: rena.te.ohr@wiwi.uni-goettingen.de

S. Lechner  
e-mail: lechner.susanne@dihk.de

in the Treaty of Lisbon, article 50. This act is a novelty since neither are any details concerning withdrawal processes laid down in previous treaties the European Union (EU), nor does the International Law give any specific guidelines.

In fact, during the integration process that started with the foundation of the European Community no country has withdrawn from the community.<sup>2</sup> However, the European integration process faces new challenges due to numerous enlargements: The objectives and institutional regulations set up for the initial Community consisting of six neighbouring national economies at a quite similar stage of development are partly losing relevance in a more heterogeneous Community of now 27 member states. Unanimity decision-making becomes increasingly difficult. The majority decisions brought in to solve this problem may lead to the scenario of a country being outvoted several times and getting increasingly unsatisfied with the membership conditions. The option of withdrawal might become a serious alternative for this country and at the same time reduce tensions within the Community.

The latest developments during the ratification process for the Treaty of Lisbon also support the importance of a (future) right of withdrawal: The Irish citizens' refusal (still valid so far) of the Reform Treaty as well as the critical attitude of Poland and the Czech Republic have caused discussions showing a wide range of possible consequences with excluding states reluctant to support reforms on one end and founding a new European Union without them on the other.

The right of withdrawal is a new instrument for the member states which on the one hand helps them to oppose to excessive EU centralization tendencies—which strengthens the principle of subsidiarity (Buchanan and Faith 1987, p. 1031)—and that on the other hand can be used as a threat in order to impede decisions or to at least enforce compensations for a decision taken against their interests. Does this mean that member states now have regained a negotiation power comparable to the right to veto or are they becoming even more powerful by threatening to leave? This study provides an answer to these questions. It is organized as follows: Sect. 2 first deals with the relevance of a withdrawal by assessing the costs and benefits coming along with EU membership and then refers to the threat of withdrawal. Section 3 presents the model which is applied to three different voting schemes: unanimity voting, majority voting without an exit option and majority voting with an exit option. The obtained results are modified in Sects. 4 and 5 by dropping certain assumptions of the basic model. Section 6 concludes.

## 2 The relevance of the exit option

More than 50 years ago, European integration started with six member states but since then the community has been extended to 27 members. According to theory, if

---

<sup>2</sup> Referring to the withdrawal of Greenland from the EU, Berglund (2006, pp. 157) shows in her essay that a withdrawal from the Union is in principle possible. On the other hand, since Greenland was not an autonomous member state of the EU, it can also be argued that the Greenland action was a member state's reduction in size and therefore not a withdrawal of a member state according to the European Community Law.

regional integration increases, (political) costs of coordination rise due to more heterogeneity in preferences. Regions whose preferences are not considered adequately by the central decision-making may have the incentive to leave (Alesina and Spolaore 2003). Applied to the EU, withdrawal of a member state could become an option when the advantages of EU-membership are dominated by the advantages of being a non EU-member. Whether such relevance is given will be discussed in Sect. 2.1. Besides that, the right of withdrawal could also be used as a threat in order to obtain concessions for staying in the community, thus fostering the bargaining power of member states. Whether this holds true will be analyzed in Sect. 2.2.

## 2.1 A cost-benefit analysis of the EU membership

There are economic as well as non-economic reasons for a country to withdraw from an integration area such as the EU. Non-economic factors are, among others, conflicts arising from different attitudes towards religion, language, culture or ethnicity (Bookmann 1993, pp. 12). Other reasons originate, for example, in restricted civil rights or privileges no longer accepted by a state (Sunstein 1991, pp. 655). This analysis will, however, not concentrate on these non-economic reasons but rather on the economic reasons in the broad sense because “[...] economic factors are responsible, at least partially, for the birth of secessionist movements that at first glance seem to be driven purely by nationalistic motives [...]” (Alexandrakis and Jones 2006, p. 400).

For every EU member state, the membership brings along economic benefits as well as disadvantages that result in state-specific cost-benefit relations. In case of withdrawal, the membership benefits are lost and can therefore be equated with the (opportunity) costs of a non-membership (outside position). Accordingly, the (opportunity) costs of a membership are based on the benefits resulting from an independent position outside the Community.

A state’s economic benefits caused by the EU membership are defined (among others) by the following elements (Ahrens et al. 2005, pp. 421):

- Benefits of the European Single Market: This concerns trade and specialization gains through unrestricted free trade as well as the improved allocation of resources through the unhindered mobility of the production factors labour and capital within the integration area.
- Benefits of the regional and structural policy: This refers to the financial support by the EU with the aims of reducing regional income differences and establishing convergence.
- Benefits of the Common Agricultural Policy through a reliable supply with agricultural goods as well as the stabilization of the agricultural markets within the integration area.
- Benefits of the Monetary Union: This applies to the reduction of transaction costs in trade and capital movements due to the common European currency, as well as the omission of exchange rate risks and risk premiums—along with the associated positive allocation effects.

- Benefits of the EU trade policy towards third countries concerning the fact that the EU membership results in a stronger bargaining position.
- Benefits that are caused inherently by the EU membership: This refers, among others, to the fact that the member state participates in the integration process itself, is part of the decision-making process with regard to the depth of integration as well as to the admission of new members, has an increased negotiation power towards outsiders and benefits from the Community's protection.

The benefits of the non-membership (opportunity costs of membership) are defined, among others, by the following elements:

- Benefits of independency through the advantages of a sovereign and autonomic economic policy based on its specific preferences and requirements.
- Benefits of the autonomous use of state revenues concerning the fact that no payments to the EU budget have to be made.
- Benefits of an autonomous foreign trade policy referring to the fact that specific economic and monetary agreements with third countries are possible and that the advantages of an independent monetary policy can be exploited.

The comparison of benefits between the EU membership and an outside position can therefore be considered to be the decisive element to the question of whether a membership is (still) benefit maximising.<sup>3</sup> Furthermore, the question whether the EU membership is really benefit maximising to a country becomes relevant on and off since the EU keeps changing the cost-benefit relations of its members by taking various decisions in the course of the enlargement and deepening processes. And one or other of these decisions may tip the scales between the advantages of staying or leaving the EU.

## 2.2 The exit option as threat potential

In case exogenous or endogenous factors cause a modification of the cost-benefit relation and the value of a Union membership decreases, the option of a withdrawal becomes relevant. As mentioned before, the latest enlargements could be a reason since they lead to a higher heterogeneity of the member countries with regard to structure and preferences. This heterogeneity is reflected in decision-making processes becoming more and more difficult. The Treaty of Lisbon may also cause new conflicts: due to the enshrined appreciation of decisions based on superior majorities, the danger of member states being outvoted more often and their cost-benefit balance getting out of balance is rising. In case these outvoting situations cumulate it might become difficult for a member state to further participate in the integration process.

---

<sup>3</sup> One-time costs following a withdrawal (e.g. for re-establishing border controls, replacing the common European currency by the national currency etc.) have to be taken into account too. Actually these expenses are not significant with respect to the complete "running time" of the outside position. But, as they incur at the date of withdrawal and with the politicians' perception of time as short election periods they mostly were taken as crucial.

These developments can thus lead to a decreased benefit of the EU membership (Farvaque 2000, p. 6) or to an increased benefit of the non-membership for a specific country. In the latter case, two scenarios are possible: either the benefit of being a sovereign state outside the EU is regarded as more valuable than before or the membership in another integration area is regarded as more promising with regard to benefit than the membership in the EU. In both scenarios, a withdrawal might be considered.

If such significant changes in a member country's cost-benefit relation do occur, the country will initially try to have the EU compensate these changes. Therefore, the member country will make certain claims and threaten to withdraw should these claims not be met. The member state thus uses the right of withdrawal as a potential right to veto or as a threat potential in order to prevent disadvantageous decisions or, alternatively, to receive compensations for accepting the decision as a necessary part of the integration process.<sup>4</sup>

At the time of a member state asserting its claims, it is—due to existing information asymmetries—not obvious to the EU (being regarded as representation of the other member states) what kind of changes in the cost-benefit relation of the specific state will actually occur. This circumstance may induce a member state to assert unjustified claims in order to raise its own benefit position compared to other member states. With the help of the enshrined withdrawal option, a country can therefore obtain advantages to the account of other member states.

The previous integration process has seen some threats of withdrawal so far: In 1965, de Gaulle with his “policy of the empty chair” threatened to withdraw should the unanimity rule not be enshrined in the European Council's resolution passing proceedings. This threat was preceded by a qualified majority refusal of French agricultural proposals. The European Union and France came to an agreement, the Luxembourg Compromise of 1966, leading to the budget being reallocated in favor of agricultural measures.

Great Britain indirectly threatened to withdraw in order to obtain concessions: Since joining the EU in 1973, the country made high contributions to the EU budget<sup>5</sup> but was allocated only a small amount out of the agricultural fund composing 75% of the overall budget at that time. Since Great Britain's agricultural structure only represents a small part of its economy, the country could obtain only poor means out of the agricultural fund and was additionally more restricted by the Common Agricultural Policy than other member states. The EU established a compensation mechanism in 1984—the so-called British rebate. Thatcher threatened to hold a referendum for continuance in the Union or to withdraw should there be no payment facilities for Great Britain.

---

<sup>4</sup> The numerous package deals and side payments used as instruments in the negotiation processes are two examples of this procedure. The question whether these payments are justified or not shall not be elaborated here.

<sup>5</sup> Great Britain imported many goods from Commonwealth States, which increased duty and agricultural levy payments to the EU. Furthermore, consumption was very high with regard to the British GNP, which resulted in higher VAT own resources to be paid to the EU budget.

The examples listed above as well as the latest developments in the ratification process of the Treaty of Lisbon shed light on the future relevance of the threat to withdraw with an explicit withdrawal option at hand.

In the next section, a model will be presented that answers the question as to whether member states will be able to (re)gain bargaining power—in terms of compensation offers—if they can make use of the right of withdrawal in different decision-making processes. The chosen analytical framework is game theoretic. Schneider and Cederman (1994) as well as Slapin (2009) have already presented exit games but they do not consider different modes of decision-making. We fill that gap by using an ultimatum game which enables us to show—dependent on the respective decision-making scenario—how much compensation will be offered by the EU to an unwilling member state in order to carry through the planned decision and/or to prevent its exit.

### 3 The model

Our analysis is based on a simple game theoretic approach. We start with an upcoming decision (E) which should be made in the European Union. This decision will increase the benefits (U) for all member states  $M_i$  of the EU except of member state M1 whose benefit ( $U_{M1}$ ) will be reduced if the decision is made.

$$EU \Rightarrow \sum_{i=2}^n M_i \quad U_{EU} \Rightarrow \text{Benefits of all member states of the EU without M1}$$

We assume:

$$dU_{M1}(E) < 0 \text{ and } dU_{EU}(E) > 0, \text{ with} \quad (1)$$

$$|dU_{EU}(E) > 0| > |dU_{M1}(E) < 0|. \quad (2)$$

In case the decision (E) is made member state M1 will demand compensation ( $v$ )<sup>6</sup> that will benefit M1 and harm the EU symmetrically:

$$dU_{M1}(v) > 0 \text{ and } dU_{EU}(v) < 0, \text{ assuming for simplicity that} \quad (3)$$

$$dU_{M1}(v) = |dU_{EU}(v)|. \quad (4)$$

The decision (E) will be made at time  $t = 0$ . In the next period, at  $t = 1$ , the decision becomes effective. Based on that the following utility functions can be derived:

$$U_{M1}(t = 1) = U_{M1}(t = 0) + dU_{M1}(E) + dU_{M1}(v), \text{ with} \quad (5)$$

$U_{M1}(t = 0)$  = Overall benefit of EU membership for M1 in  $t = 0$

$U_{M1}(t = 1)$  = Overall benefit of EU membership for M1 in  $t = 1$

$$U_{EU}(t = 1) = U_{EU}(t = 0) + dU_{EU}(E) + dU_{EU}(v), \text{ with} \quad (6)$$

<sup>6</sup> For simplicity we define compensation in monetary dimensions, though it also could be a political concession.

$U_{EU}(t = 0)$  = Overall benefit of EU membership for the remaining member states (EU) in  $t = 0$

$U_{EU}(t = 1)$  = Overall benefit of EU membership for the remaining member states (EU) in  $t = 1$

We consider three decision-making scenarios:

1. Decisions requiring unanimity, i.e. individual member states may veto
2. Majority voting system without exit option
3. Majority voting system with exit option

### 3.1 The rule of unanimity and the option to veto

If the decision requires unanimity, the member state M1 may veto and stop it. As the decision would increase the benefits for almost all member states the EU should offer M1 a transfer ( $v$ ) compensating M1 for its loss in benefits. The critical point is the amount of the compensation ( $v$ ) that will keep M1 from using its right to veto. For further insight the situation can be modelled with the help of the ultimatum game in which the following assumptions are made:

- two players (EU and M1)
- Both players know each other.
- Both players have complete information with respect to the changes in benefits occurring in the course of the decision.
- The EU is the proposer offering a concrete amount of compensating transfers whereas M1 is the responder who either accepts or rejects.
- The game is played sequentially.
- There is no bargaining.<sup>7</sup>
- The game is only played once.<sup>8</sup>

Assuming rational behaviour M1 should accept any offered compensation satisfying the condition  $dU_{M1}(v) > |dU_{M1}(E)|$  as a result of this “take-it-or-leave-it game”. The EU should offer the lowest possible amount complying with  $dU_{EU}(E) > |dU_{EU}(v)|$ , i.e. the benefit of the decision made must be higher than the loss of the provided transfer; if not, the decision will not be implemented. The amount offered is marginally higher than  $v^*$ , with  $v^*$  leaving the country M1 to be indifferent between vetoing and agreement:

$$dU_{M1}(v^*) = |dU_{M1}(E)|. \quad (7)$$

In that case, the net benefit of the decision and the provided transfer is marginally higher than 0 for member state M1 while the net benefit gain for the EU is at its maximum.

<sup>7</sup> Realistically, this assumption does not hold because bargaining does take place in the EU, in fact, more than enough. Anyhow, for reasons of simplification we disallow for bargaining.

<sup>8</sup> Realistically, those games are played all the time within the EU, but with changing decisions and different member states as responder.

Güth et al. (1982) carried out some experimental studies showing that players often behave differently to what theory actually suggests: if the proposer offered too little (below 20–30% of the amount to be redistributed), the responder punished him by rejecting the offer—with the consequence that neither of them received anything. In addition the proposer—of his own accord—also often cared about fairness by offering the responder a higher amount (between 30 and 50% of the amount to be redistributed).

Taking these results into account the EU<sup>9</sup> should offer a compensation amount ( $v$ ) consisting of two components ( $v^* + x$ ), with  $x$  being a significant additional amount. The highest possible additional payment ( $x^*$ ) is determined by the condition that the EU is indifferent between implementing the decision and paying the transfer, and not implementing it. To ensure a positive benefit from implementing the decision the EU must only offer a compensation allowance  $x$  which is lower than  $x^*$ .

$$|dU_{EU}(v^* + x)| < dU_{EU}(E), \text{ with} \quad (8)$$

$$x < x^* \text{ and } x^* \text{ corresponding to : } |dU_{EU}(v^* + x^*)| = dU_{EU}(E). \quad (9)$$

If the EU offers a positive  $x$ , but too low, M1 will not accept and veto; the decision benefiting the majority of the member states will not be implemented, though both players would have been better off with the decision and the transfer.<sup>10</sup>

As a consequence, the rule of unanimity enables M1 to get compensation ( $v$ ) consisting of ( $v^* + x$ ), where  $x$  increases its benefits additionally at the expense of the other member states:  $v^* < v = v^* + x < (v^* + x^*)$ , with  $v^*$  and ( $v^* + x^*$ ) defining the respective limits of compensation.

### 3.2 Majority voting system without an exit option

Due to the enlargement processes, the rule of unanimity has been more and more substituted by majority voting in order to speed up decision-making in a Union of 27 heterogeneous member states. A decision can be realized despite the opposition of one or more member states. We assume again that a decision (E) benefits the majority of the member states except of M1 which experiences a loss. Based on that there is no need to offer compensation to M1 ( $v = 0$ ) because there is no right of veto:

$$U_{M1}(t = 1) = U_{M1}(t = 0) + dU_{M1}(E) \text{ with } U_{M1}(t = 1) < U_{M1}(t = 0) \quad (10)$$

$$U_{EU}(t = 1) = U_{EU}(t = 0) + dU_{EU}(E) \text{ with } U_{EU}(t = 1) > U_{EU}(t = 0). \quad (11)$$

In order to meet concerns of fairness, the EU might offer some kind of compensation which is, however,—especially in a one-shot game—lower compared

<sup>9</sup> The experimental studies assume that individuals behave in that way. We adopt that approach for the behaviour of states even though we are aware of possible problems going along with that adoption. Besides that, we consider the EU as an individual representing the interests of all member states except of M1. In order to reduce the complexity we refrain from modelling a two-level game where the decision-making processes among the remaining member states of what to offer M1 as a transfer is analysed.

<sup>10</sup> Thaler (1988) and Roth (1995) present a comprehensive overview on experiments within the framework of ultimatum games. Stahl (2008, p. 293) discusses some reasons why players act irrationally, for example, fairness, envy and social preferences.



to the situation of unanimity rule and ranges between  $0 < v = x \ll (v^* + x^*)$ . In a one-shot game M1 will accept that offer—no matter how much it will receive because any rejection will cause harm to it and will not punish the proposer for too low an offer.

### 3.3 Majority voting system with an exit option

The Treaty of Lisbon now enables member states to withdraw from the Union; that means M1 may therefore use this outside-option in its negotiation with the EU. If M1 decided to withdraw, the expected utility functions of M1 and the EU would change as follows:

$$U_{M1}(t = 1) = U_{M1}(-EU) \text{ with} \quad (12)$$

$U_{M1}(-EU)$  = overall benefit of M1 after having left the EU, with the restriction that  $U_{M1}(-EU) < U_{M1}(t = 0)$  (because otherwise M1 would not be a member of the EU even now).

$$U_{EU}(t = 1) = U_{EU}(t = 0) + dU_{EU}(E) + dU_{EU}(-M1) \text{ with} \quad (13)$$

$dU_{EU}(-M1) < 0$  = The change in the benefits of EU membership for the remaining member states after M1 has left the union.

If M1 decided to leave the integration area, the remaining states would gain less from integration because, for example, the Single Market would become smaller, their bargaining power with respect to third party countries would decrease or, if M1 were a net contributor, their financial means would suffer a loss. These welfare losses are normally the higher, the larger the withdrawing country is, the longer the exiting state has been a member (especially if it is one of the founding members) or the higher its per-capita income is compared to the average.

Indeed M1's outside-option is realistic if  $U_{M1}(-EU) > U_{M1}(t = 0) + dU_{M1}(E)$ ,<sup>11</sup> which means that staying in the Union and accepting the decision is less beneficial compared to being a sovereign country again.<sup>12</sup> In contrast to that, the EU is interested in keeping M1 from withdrawing as  $dU_{EU}(-M1) < 0$ .

Against this background, two cases must be distinguished:

Scenario a:  $dU_{EU}(E) > |dU_{EU}(-M1)|$ .

*The decision is so favourable to the remaining EU member states that its accompanying benefits are considered higher than the loss they would experience if M1 were to leave.*

Scenario b:  $dU_{EU}(E) < |dU_{EU}(-M1)|$ .

*The decision is less favourable to the remaining EU member states as its accompanying benefits do not compensate for the loss they would experience if M1 were to leave.*

<sup>11</sup> Exactly, we should also include one-time exit costs ( $\kappa$ ) into our consideration. But we ignore them here as they do not have any qualitative effects on the results.

<sup>12</sup> In the case that  $U_{M1}(-EU) < U_{M1}(t = 0) + dU_{M1}(E)$ , i.e. the overall benefit of being a member state of the Union outweighs the benefits of withdrawal despite the loss of benefits caused by the decision, the threat to exit is not credible.

### 3.3.1 Scenario a: The withdrawal of M1 causes only a small loss in the benefits of the EU

If  $dU_{EU}(E) > |dU_{EU}(-M1)|$  holds, the EU will implement the decision by all means, even if M1 decides to terminate its membership. But as a withdrawal will reduce the overall benefit, the EU is interested in offering M1 adequate compensation ( $v$ ) to prevent the exit. A member state suffering from a decision made by majority voting may now demand compensating transfers by using the right of withdrawal: it might threaten to leave the EU if adequate compensation is refused (Knez and Camerer 1995, p. 66). M1 as the responder may now effectively influence the behaviour of the EU as the proposer (Fellner and Güth 2003, p. 54). Our previous ultimatum game will be modified as follows:

Behaving rationally M1 should accept any compensation ( $v$ ) that complies with:

$$U_{M1}(t = 1) = U_{M1}(t = 0) + dU_{M1}(E) + dU_{M1}(v) > U_{M1}(-EU) \quad (14)$$

which means that

$$dU_{M1}(v) > -dU_{M1}(E) - (U_{M1}(t = 0) - U_{M1}(-EU)). \quad (14a)$$

The transfer should put M1 in the place that being member of the EU is more valuable—at least marginally—to it than the outside option. Therefore the transfer ( $v$ ) only has to put M1 marginally better off compared to its outside option. A complete compensation based on M1's loss incurred by the decision is not necessary!

The EU, in turn, will offer the lowest possible payment satisfying  $|dU_{EU}(v)| < |dU_{EU}(-M1)|$ , which means that the offered transfer should reduce the benefits of the EU less than the imminent exit of M1.

Thus the offered transfer would only be *marginally* higher than  $v^{**}$ , with  $v^{**}$  resulting from

$$U_{M1}(t = 1) = U_{M1}(t = 0) + dU_{M1}(E) + dU_{M1}(v^{**}) = U_{M1}(-EU) \text{ or} \quad (15)$$

$$dU_{M1}(v^{**}) = -dU_{M1}(E) - (U_{M1}(t = 0) - U_{M1}(-EU)) \quad (15a)$$

$v^{**}$  symbolizes the amount of the transfer leaving M1 indifferent between withdrawing ( $U_{M1}(-EU)$ ) or staying  $U_{M1}(t = 0) + dU_{M1}(E) + dU_{M1}(v^{**})$ .

The net change in benefits for M1 based on the decision and the offered transfer is still negative but not serious enough to overcompensate the advantage of EU membership compared to the outside option. The net gain in benefits for the EU, however, based on the decision and the promised transfer is at a maximum. The offered compensation will be lower compared to the decision rule of unanimity as ( $v^{**} < v^*$ ), but it will be higher compared to the majority voting system without exit option, because in that case, rationally, no compensation should be offered.

However, as experiments have shown players may act irrationally. M1 may reject an offer considered as too low, though this rejection would lead to a decrease in benefits for both M1 and the EU. In that case, the EU should offer a compensating transfer ( $v$ ) composed of ( $v^{**} + z$ ) with  $z$  being a significant additional amount. But such compensation will only be offered, if the loss of benefits caused by the transfer

is smaller than the loss of benefits caused by an exit of M1. Thus the highest possible premium ( $z^*$ ) follows from the condition that the EU is indifferent between paying the transfer and accepting the exit of M1. To ensure compensation offered by the EU, the premium  $z$  must be, at least marginally, smaller than  $z^*$ :

$$|dU_{EU}(v^{**} + z)| < |dU_{EU}(-M1)| \text{ with} \tag{16}$$

$$z < z^* \text{ and } z^* \text{ corresponding to } |dU_{EU}(v^{**} + z^*)| = |dU_{EU}(-M1)|. \tag{17}$$

When referring to experiments in the setting of ultimatum games, it can be concluded that  $z$  would be equal to around 30% of the loss the EU experiences if M1 withdrew ( $dU_{EU}(-M1)$ ).

In scenario a, the majority voting system with exit option enables M1 to get a compensation amount ( $v$ ) consisting of ( $v^{**} + z$ ) with  $v^{**} < v = v^{**} + z < v^{**} + z^*$ . This transfer may now even overcompensate the loss in benefits of M1 in the course of the decision and therefore increase its overall benefit of EU membership. The probability of such a high transfer rises as  $|dU_{EU}(-M1)|$  increases and  $|dU_{M1}(E)|$  decreases.

### 3.3.2 Scenario b: The withdrawal of M1 causes a significant loss in the benefits of the EU

If  $dU_{EU}(E) < |dU_{EU}(-M1)|$  holds, the EU is willing to do everything that is possible to avoid M1’s withdrawal from the EU because its exit would imply a high loss of benefits for the remaining member states, which would overcompensate the gains from the decision (E).

The amount the EU may afford for compensation is determined by  $|dU_{EU}(v)| \leq dU_{EU}(E)$ : the benefits caused by the decision must overcompensate the loss in benefits caused by the transfer. If the EU had to pay a higher compensation, the net benefit from realizing the decision and making the compensation payment would become negative; instead of implementing a very costly decision it would be rational then to abandon the decision and to avoid paying any kind of transfer.

Being well informed about the utility function of M1, the EU would be aware of whether there exists a transfer  $v$  complying with  $|dU_{EU}(v)| \leq dU_{EU}(E)$  and at the same time fulfilling the restriction

$$dU_{M1}(v) > -dU_{M1}(E) - (U_{M1}(t = 0) - U_{M1}(-EU)). \tag{14}$$

These constraints and the assumption that

$$dU_{M1}(v) = |dU_{EU}(v)| \text{ lead to} \tag{4}$$

$$dU_{EU}(E) > dU_{M1}(v) > -dU_{M1}(E) - (U_{M1}(t = 0) - U_{M1}(-EU)) \text{ or} \tag{18}$$

$$dU_{EU}(E) > -dU_{M1}(E) - (U_{M1}(t = 0) - U_{M1}(-EU)). \tag{18a}$$

In order to realize the decision the gain in benefits for the EU (caused by the decision) must be higher than the loss in benefits for M1 (caused by the decision) reduced by its previous difference in benefits between membership and outside position.

The inequality (18a) is not fulfilled if:

- EU's benefits from the decision ( $dU_{EU}(E)$ ) are very small and/or
- M1's loss caused by the decision ( $dU_{M1}(E)$ ) is very high and/or
- M1's loss of withdrawal ( $U_{M1}(t = 0) - U_{M1}(-EU)$ ) is very small.

In that case, the EU will not implement the decision as the loss of benefits connected with the necessary compensation payment exceeds the benefits induced by the decision. If the inequality (18a) holds, however, the EU will implement the decision and pay compensation.

As  $|dU_{EU}(-M1)| > dU_{EU}(E)$  determines scenario b, inequality (18a) can be modified:

$$|dU_{EU}(-M1)| > dU_{EU}(E) > -dU_{M1}(E) - (U_{M1}(t = 0) - U_{M1}(-EU)). \quad (19)$$

When combining (19) with (9), (15a) and (7) the following inequality can be derived:

$$|dU_{EU}(v^{**} + z^*)| > |dU_{EU}(v^* + x^*)| > dU_{M1}(v^{**}). \quad (20)$$

The EU's loss in utility is higher when M1 withdraws than when the decision is implemented and a transfer is offered to M1. If this inequality holds the EU at most can offer a compensation amount that equals the decision's benefits:  $v \leq v^* + x^*$ . Here, M1's compensation could be as high as in the case of unanimity voting.

### 3.3.3 First conclusions

Using a game theoretical model where the EU acts as the proposer and M1 as the responder and where both behave in a purely rational and benefit-maximizing way, we could show that compensating transfers will be lower under majority decisions with exit option compared to decisions requiring unanimity. If the rule of unanimity is applied, the minimum compensation transfer  $v^*$  depends on M1's loss in benefits caused by the decision. In the majority voting system with an exit option, the minimum compensation amount  $v^{**}$  is also determined by the loss in benefits for M1 but reduced by the difference in benefits between its membership (before the decision) and its outside position.

If the minimum compensation exceeds EU's benefits of the decision, no compensation will be offered: Either the decision will not be implemented because  $dU_{EU}(E) < |dU_{EU}(-M1)|$  or the decision will be made and the exit of M1 is accepted because  $dU_{EU}(E) > |dU_{EU}(-M1)|$ .

Considering experiments with the ultimatum game, it can be argued that M1 will receive higher compensating transfers than theory suggests. The maximum amount the EU is willing to pay in the case of majority voting with exit option ( $v^{**} + z^*$ ) can be equal to or smaller than the maximum transfer offered in the case of unanimity ( $v^* + x^*$ ). In the case of unanimity the offer depends on the benefits the decision implies for the majority of the members. With the exit option, the offer may also depend on those benefits (if  $dU_{EU}(E) < |dU_{EU}(-M1)|$ ) or on the loss in benefits for all the other member states caused by an exit of M1 (if  $dU_{EU}(E) > |dU_{EU}(-M1)|$ ). In the last-mentioned case the maximum compensation

premium is smaller than in the case of unanimity voting. In any case, however, the maximum amounts will not be outbid.

#### **4 Extensions of the model: joined claiming and repeated negotiations for compensation**

When extending the model, special emphasis can be put on the question on how the negotiation powers of proposer and responder change if, instead of a single country demanding compensation, several countries unite to assert a joint claim. Moreover, it might be interesting to ask which results—especially with regard to the amount of compensation claims—can be expected if negotiations between the EU and M1 are allowed. These questions are relevant as not only bargaining but also group claims for compensation shape the decision-making processes in the EU. One example for the latter is the institution of the cohesion fund in 1993: Portugal, Ireland, Greece and Spain demanded financial support for their consent to the Maastricht treaty.

If not a single country but a group of several countries demands compensating transfers, different aspects need to be taken into consideration. First of all, it needs to be discussed how compensation should take place. Until now, countries have been compensated individually. In the model, the EU will be able to offer any amount as long as it still receives a (marginal) benefit out of the decision. If too many countries demand compensation, the offered amount might not be enough to compensate everyone, thus it would be rational for the EU to drop the decision. At that point it therefore needs to be discussed whether the decision in question should really be made when (too) many countries ask for compensation. Besides individual compensation, the group of countries could also be compensated as a whole. The group would be offered an amount that could nearly be equivalent to the benefit the EU would derive from the decision. How the group would share that compensation is out of reach of the EU. EU has not yet pursued such a strategy, but it could be worth considering if more and more countries demand compensation. In that case the EU must only refer to the group compensation transfer and can leave the split-up to the group.

The group of countries may also think of adopting a decision rule on whether to accept or reject the offer together. In case of a disjunctive decision rule, the agreement of just one member state is needed for that the decision might pass and the respective transfer is paid to every member state of the group. In that case the compensation offer must only be high enough to satisfy that country with the lowest loss in benefits caused by the planned decision. If, however, a conjunctive decision rule is chosen, every member state has to consent to the offer (Messick et al. 1997, p. 87). In the case of unanimity voting the group should select a conjunctive decision rule. In the case of majority voting, however, the offer of the EU depends on the member state that has the most credible outside-option. Taking that into account, member states might form strategic alliances—by convincing such a powerful member state to join their group—in order to increase their threatening potential.

Another important extension of the model is to admit bargaining between M1 and the EU. In doing so, M1 can reject the offer of the EU and may demand higher compensation. If bargaining rounds are finite—and no bargaining costs occur—the player making the last offer wins, as the other player may either accept or reject the offer. If, however, bargaining rounds are infinite—and bargaining costs accrue—the bargaining outcome depends on how patient the players are. If a quick decision is in the interest of the EU, it will be willing to make more concessions, i.e. higher offers, to bring the decision process to an end. Besides that, the member state could also be eager for an immediate compensation: for example, an impatient head of state would, in view of up-coming elections, welcome quick compensation. Under these circumstances, the EU has higher bargaining power which results in a lower offer as it knows that the country in question needs that compensation. When bargaining is possible, the EU has a first-mover advantage because it makes the first offer M1 can accept or reject. For how long bargaining will go on depends on the patience of the players.

## 5 The effectiveness of the threat of withdrawal considering information asymmetries

The outside option's effects on the course of the game and on the extent of possible transfers depend on

- the benefit loss M1 would suffer due to the decision;
- the benefit loss the country would suffer in case of withdrawal;
- M1's relevance for to the other members' integration benefits;
- the extend of EU's benefit gains following the decision (E).

The decisive factors are, however, whether the benefit levels are truthfully communicated to the antagonist and whether M1 convincingly signals the threat of withdrawal to the EU. The previous assumption that both parties are completely informed about their own and their adversary's utility functions shall be abolished in the following, while an information asymmetry between both parties is assumed.

If M1 succeeds in pretending a higher benefit loss due to the decision than is actually the case, or if M1 succeeds in depicting the outside position more favorably than it is in reality, the country can achieve higher compensations. Having no withdrawal option, the member country M1 can only react to the EU proposal, while the explicit withdrawal option enables M1 to act strategically by using an *ex ante* threat of withdrawal and to manipulate the process in its favor (by giving wrong accounts of the own benefit positions) (Koning et al. 2007, p. 6), which finally results in higher EU proposals.<sup>13</sup> M1 can hereby make use of the so-called cheap talks as “costless and unverifiable lies about private information and incredible threats about future actions” (Croson et al. 2003, p. 157), leading to negotiation results that could not be realized without this signal effect (Farrel 1989, p. 229).

---

<sup>13</sup> This theoretic result corresponds to experiments made with regard to this aspect (Schmitt 2003, p. 51).

From the theoretic perspective, it could be argued that both players anticipate cheap talk being used during the negotiations. Therefore, they could ignore any unreliable information and neglect them in the course of the negotiations. Experiments, however, show different results: responders who either provided wrong information with regard to their outside option or threatened to refuse low proposals—in which case neither the proposer nor the responder would get a “share of the cake”—received higher proposals than those who did not convey any incorrect signals concerning the private information at their disposal or concerning their preferences (Croson et al. 2003, p. 157).

In a one-shot game,<sup>14</sup> M1 consequently could benefit to a great extent from reinforcing its threat of withdrawal by using cheap talk—it might for example mention its possible intention to negotiate with other integration areas—and thus strengthen its negotiation power vis-à-vis the EU. If, however, cheap talk is revealed as such, which can be especially the case in repeated games, the result is unlikely to be positive (Berninghaus and Güth 2002, p. 247). M1's actions will thus gain credibility if they are “self-signaling” and finally “self-committing” (Farrell and Rabin 1996, p. 112). M1 indeed initiating negotiations with other integration areas, or reducing its payments to the EU budget in order to demonstrate to what extent it is burdened with growing net payments would be regarded as self-signaling strategies. M1 herewith signals that a withdrawal would provide a higher benefit, which again raises the credibility of its outside option (Muthoo 2000, p. 159).

The self-committing strategy is considered as a stronger instrument than the self-signaling strategy: in the former case, M1 would already have initiated its withdrawal before even having asserted its compensation claims to the EU, thus supporting its determination to withdraw (Gates and Humes 1997, p. 150). If the EU is interested in M1 remaining a member of the integration area, it will pay the amount claimed by M1—whatever it may be. This strategy implies that either M1 is indifferent with regard to its remaining in the EU and withdrawing from it, or that M1 is prepared to take risks, hoping that the EU indeed prefers M1 remaining a member of the integration area to its withdrawing.

In case the member state M1 is only aiming at receiving compensation as high as possible it would initially use cheap talk—being a cost-effective method—in order to signalize that it regards the benefit of a withdrawal higher than the benefit of remaining in the EU. Though a withdrawal from the EU goes at present along with high economic sunk costs and obstacles<sup>15</sup> making a withdrawal quite improbable and M1's threat presumably a rather tactical maneuver, it could be appropriate for the EU to meet M1's compensation claims: due to existing information asymmetries, some uncertainty remains—maybe reinforced by cheap talk—as to whether a withdrawal might be profitable to M1 anyhow, so that offering some compensation can be efficient.

---

<sup>14</sup> In case the game is played repeatedly and both players have experienced the cheap talk strategy, cheap talk will, on the contrary, have little or even negative effects on the negotiation results since the attempt to deceive may have negative influence on a player's reputation (Kim 1996, p. 788).

<sup>15</sup> A withdrawal can not be initiated just like that if, for example, certain requirements have to be met beforehand such as a national approval by referendum. It remains therefore debatable whether the mere threat of withdrawal is per se credible (Schneider 2005, p. 213).

This result reflects for the most part the history of the EU, where the EU has met member states' compensation claims that were linked to the threat of withdrawal in case of denial.

## 6 Conclusion and outlook

Over the course of the integration process, the decision rules within the European Community have undergone several reforms: votes that demand unanimity have been gradually reduced in favor of decisions by majority in order to accelerate the decision process in an EU consisting of 27 heterogeneous member states, and thus to take into account the overall aim of deepening the integration area. Having enshrined an option of withdrawal, the Treaty of Lisbon now indirectly allows another voting procedure: in case of a majority decision reducing its previous EU membership benefit, a member state can now threaten to withdraw in order to receive compensation for the benefit loss it suffers due to the decision.

Does this mean that member states have regained a negotiation power comparable to the right to veto? A simple game theoretic approach clarified that—pure benefit-maximizing behavior and complete information provided—the EU offers higher compensation in case of an unanimity rule (right to veto) than in case of a decision by majority with the right to withdraw. In case of a voting procedure with decision by majority but without a withdrawal option, the least amount of compensation is to be expected. Member states do therefore regain negotiation power in majority voting systems with the option to withdraw. However, that power—in terms of the compensation it could receive—is not as high as in the case of unanimity voting.

Taking into account the results of the ultimatum game experiments, a member state which refuses to support a decision by majority can expect higher compensation proposals. In case of a withdrawal option, the *maximum* amount to be paid by the EU can—under certain conditions, e.g. if the benefit gain connected to the decision is less than the benefit loss following a withdrawal—be as high as it would have been in case of a right to veto.

When extending the model by allowing M1 to negotiate the size of the compensation, the outcome depends on the patience of the players. For example, if the EU is impatient in realizing the decision, M1 can count on higher offers.

When group demands are possible, member states can achieve higher compensation in a group than individually, especially when strategic alliances are formed.

When assuming information asymmetries, the extent to which the EU will react to a threat to withdraw and the amount of compensation it will finally pay depends on the credibility of such a threat. By increasing its credibility, e.g. by using cheap talk, the member state can thus force up the EU compensation proposal and may receive at most the transfer offered in unanimity voting. Indeed member states are becoming more powerful due to the withdrawal option and as the past has shown, the EU has repeatedly met member states' claims, thus giving relevance to the conclusions of our simple model.

Against this background the model could be extended to analyze what kind of modifications are to be expected when the game is played several times and the



results of previous rounds are taken into account. So far, the EU has to a great extent communicated that it will meet compensation claims. It is however debatable whether it can and wants to continue this policy in the long run—especially regarding the fact that the option of withdrawal facilitates claims which, in the form of exceedingly high payments or of decisions that are not enforced—can in the end be detrimental to the Community.

To sum up, the right of withdrawal in the Lisbon Treaty has the potential to impede as well as foster the future European integration process. To prevent abuse of the exit-option as a threat, conditions raising the exit costs might be attached. One possibility is to include a referendum that requires the majority of citizens in the respective member state to vote for withdrawal. As Eerola and Määttänen (2004) find out, citizens rather prefer the status quo than leaving the EU. This will especially reduce the bargaining power of euro sceptic politicians as their threat of withdrawal loses credibility due to the necessary referendum. Another, but more modest, way is to complicate the exit procedure. For this purpose a period of several years between the request of withdrawal and the de facto exit could be defined (Schneider 2005). Another proposal is to claim an exit-fee to compensate the EU for losses caused by the departure of a member state (Kurrild-Klitgaard 2002). In this regard, however, it could be difficult to calculate these losses. The remaining member states could have the incentive to overdraw the exit costs so that the member state in question might not afford its withdrawal. Any conditions would be an impediment to the exit-option, thus reducing the benefits of withdrawal. In order to avoid costly break-ups and to warrant unloaded decisions whether to stay or to leave no such (costly) conditions have been attached so far in the EU.

An immediate withdrawal of a member state, however, is currently unlikely, because the advantages of remaining in the EU prevail. But the potential of being used as a threat should not be underestimated. In addition, the right of withdrawal might be of relevance to the so-called “clubs within the club”<sup>16</sup>: in order to avoid a slow down of the integration process, due to the increasing number of decision-makers and the increasing heterogeneity of economic structures and political interests, the European Union introduced the possibility of so-called “enhanced cooperation” between subgroups within the Union. This appears to be an appropriate instrument which can be applied when not all member countries are willing or able to participate in specific steps of further integration yet. Applied to sub-clubs of the EU, the right of secession would allow that clubs within the club are provided with an exit option, too. Such design with flexible entry and exit options for clubs within the club will contribute to reduce the trade-off between the deepening and the enlarging of the EU. Despite the mentioned risks, we conclude that the right of secession laid down in the Lisbon Treaty is all in all a helpful institutional adjustment to meet the challenges of today’s European Union.

**Open Access** This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited.

<sup>16</sup> The EU can be perceived as a club that provides several non-rival but excludable goods to its members (Ahrens et al. 2005).

## References

- Ahrens, J., Hoen, H., & Ohr, R. (2005). Deepening integration in an enlarged EU: A club-theoretical perspective. *European Integration*, 27, 417–439.
- Alesina, A., & Spolaore, E. (2003). *The size of nations*. Cambridge: The MIT Press.
- Alexandrakis, C., & Jones, R. (2006). Secession and exit: an analysis of two competing hypotheses. The Elgar companion to public economics: empirical public economics (pp. 388–401).
- Bähr, C. (2008). How does sub-national autonomy affect the effectiveness of structural funds? *Kyklos*, 61(1), 3–18.
- Baier, S., & Bergstrand, J. (2004). Economic determinants of free trade agreements. *Journal of International Economics*, 64, 29–63.
- Baillie, S. (1998). The position of small states in the EU. In L. Goetschel (Ed.), *Small states inside and outside the European Union: interests and policies* (pp. 193–205). The Netherlands: Kluwer.
- Berglund, S. (2006). Prison or voluntary cooperation? The possibility of withdrawal from the European Union. *Scandinavian Political Science*, 26(2), 147–167.
- Berninghaus, S., & Güth, W. (2002). Now or later?—Endogenous timing of threats. *Theory and Decision*, 55(3), 235–256.
- Bookmann, M. (1993). *The economics of secession*. New York: Palgrave Macmillan.
- Buchanan, J., & Faith, R. (1987). Secession and the limits of taxation: Toward a theory of internal exit. *American Economic Review*, 77, 1023–1031.
- Crosno, R., et al. (2003). Cheap talk in bargaining experiments: Lying and threats in ultimatum games. *Journal of Economic Behavior & Organization*, 51, 143–159.
- Eerola, E., Määttä, N., & Poutvaara, P. (2004). Citizens should vote on secession. *Topics in Economic Analysis and Policy*, 4(1), 1–20, Article 23.
- Farrel, J. (1989). Cheap talk can matter in bargaining. *Journal of economic theory*, 48, 221–237.
- Farrell, J., & Rabin, M. (1996). Cheap talk. *The Journal of Economic Perspectives*, 10(3), 103–118.
- Farvaque, E. (2000). Breaking-up a nation, from the inside. Bonn: Zentrum für Europäische Integrationsforschung, Working Paper B20.
- Fellner, G., & Güth, W. (2003). What limits escalation?—Varying threat power in an ultimatum experiment. *Economic Letters*, 80, 53–60.
- Gates, S., & Humes, B. (1997). *Games, information, and politics. Applying game theoretic models to political science*. USA: University of Michigan Press.
- Güth, W., Schmittberger, R., & Schwarze, B. (1982). An experimental analysis of ultimatum bargaining. *Journal of Economic Behaviour and Organization*, 3, 367–388.
- Kaitila, V. (2004). Convergence of real GDP per capita in the EU 15. How do the accession countries fit in? European network of economic policy research institutes, WP No. 25.
- Kelstrup, M. (1993). Small States and the European political integration. In T. Tiilikainen & I. B. Petersen (Eds.), *The Nordic countries and the EC*. Copenhagen: Political Studies Press.
- Kim, J.-Y. (1996). Cheap talk and reputation in repeated pretrial negotiation. *Rand Journal of Economics*, 27, 787–802.
- Knez, M., & Camerer, C. (1995). Outside options and social comparison in three-player ultimatum game experiments. *Games and Economic Behaviour*, 10, 65–94.
- Koning, L., Steinel, W., Van Beest, I., Van Dijk, E. (2007). Dependency and deception in ultimatum bargaining. IACM 2007 Meeting Paper.
- Kurrild-Klitgaard, P. (2002). Opting-out: The constitutional economics of exit. *American Journal of Economics and Sociology*, 61, 123–158.
- Messick, D., Moore, D., & Bazerman, M. (1997). Ultimatum bargaining with a group: Underestimating the importance of the decision rule. *Organizational Behavior and Human Decision Processes*, 69(2), 87–101.
- Müller, M., & Myllyntaus, T. (2008). *Pathbreakers: Small European countries responding to globalisation and deglobalisation*. Bern: Peter Lang.
- Muthoo, A. (2000). A non-technical introduction to bargaining theory. *World Economics*, 1(2), 145–166.
- Nugent, N. (2006). Cyprus and the European Union: The significance of its smallness, both as an applicant and a member. *European Integration*, 28(1), 51–71.
- Pace, R. (2006). Malta and EU membership: Overcoming „vulnerabilities“, strengthening „resilience“. *European Integration*, 28(1), 33–49.

- Rodden, J. (2002). Strength in numbers? Representation and redistribution in the European Union. *European Union Politics*, 3, 151–175.
- Roth, A. (1995). Bargaining experiments. In J. Kagel & A. Roth (Eds.), *The handbook of experimental economics* (pp. 253–348). Princeton: Princeton University Press.
- Schmitt, P. (2003). On perception of fairness: The role of valuations, outside options, and information in ultimatum bargaining games. *Experimental Economics*, 7, 49–73.
- Schneider, F. (2005). Is a federal European Constitution for an enlarged European Union necessary? Some preliminary suggestions using public choice analysis. *Swiss Political Science Review*, 11(4), 203–225.
- Schneider, G., & Cederman, L. (1994). The change of tide in political cooperation: a limited information model of European Integration. *International Organization*, 48, 633–662.
- Slapin, J. (2009). Exit, voice, and cooperation: Bargaining power in international organizations and federal systems. *Journal of Theoretical Politics*, 21, 187–211.
- Stahl, D. (2008). Subgame perfection in ultimatum bargaining trees. *Games and Economic Behaviour*, 68, 292–307.
- Sunstein, C. (1991). Constitutionalism and Secession. *University of Chicago Law Review*, 58(2), 633–670.
- Thaler, R. (1988). Anomalies: The ultimatum game. *Journal of Economic Perspectives*, 2, 195–206.
- Thorhallsson, B. (2006). The size of states in the European Union: Theoretical and conceptual perspectives. *European Integration*, 28(1), 7–31.
- Wivel, A. (2005). The security challenge of small EU member states: Interests, identity and the development of the EU as a security actor. *Journal of Common Market Studies*, 43(2), 393–412.