

# 1 INTRODUCTION

The European Union is a major political and economic force on the European continent drawing in various European states to its orbit. The EU enlargement process, which resulted in the Union doubling its size in the last six years, is a testimony to the increasing attractiveness of the EU, especially for the less developed countries on the continent. Even though all “European” states can apply for membership, it must be noted that accession to the EU has become more difficult with every enlargement round. An applicant first needs to be declared as an official candidate, which requires that the country satisfies the political aspects of the *Copenhagen Criteria*. Then, it has to adopt and implement the *acquis communautaire*, the whole body of the EU rules and regulations in force, which means, it has to go through a politically and economically painful and long process of reforms to gain membership status. Naturally, as the European integration deepens, the *acquis* entails more, and the road to membership becomes more rocky. Moreover, through the years, the whole process became more and more detailed and strictly scrutinized by different institutions of the EU. Some of the decisions that were taken in the previous rounds are now regarded as miscalculations and become important lessons for the EU, such as not provisionally closing a chapter unless the candidate is effectively enforcing the legislation. In other words, each enlargement for the EU is a learning experience and as the EU advances on the learning curve, new candidates are subject to tougher entry criteria.

In this paper we provide a detailed insight into this learning process by studying the EU accession negotiations and their informational role, from a rational institutionalist perspective. We model the accession negotiations as a Bayesian game and demonstrate how this process helps the EU in gathering information about a candidate country. We also study the effects of various design changes on the information carrying capacity of the negotiations to better understand why the design of the negotiations evolved in the way it did.

The dynamics and the justifications of enlargement from the perspectives of both the applicant countries and the Union have been studied widely in the political science and economics literature. Schimmelfennig (2001), for example, argues that enlargement is a result of jointly shared values and norms. In his view, the European Union is a liberal international community and admits ‘all countries that share its collective identity and adhere to its constitutive norms’ . In other words, enlarging the European Union is desirable in order to expand the European family of states and to create a collective identity at the European level. Moravcsik and Vachudova (2003), on the other

hand, support a more material interests based approach and argue that the member states' leaders support enlargement because it is economically and geopolitically beneficial to them in the long run. Similarly applicants embark on a laborious accession process because membership entails economic and political benefits. Having said that, Moravcsik and Vachudova also point out that, once in, we should expect the new members to deploy their voting and veto power to transfer resources to themselves. The fact that each new member automatically becomes a veto player creates concerns that enlargement will cause gridlock in EU institutions and change the course of EU integration. Moravcsik and Vachudova argue that this kind of pessimism is exaggerated and that the real issue is not the number of members per se but whether they have diverging interests. In line with this argument, Plumper et al. (2005) argue that the EU uses accession negotiations to gain information about policy preferences of relevant parties in candidate countries. The EU carefully observes the legislative deliberations triggered by the implementation of the *acquis communautaire* in the candidate country, and based on these observations decides whether the candidate has diverging political preferences which, once she gets in, can cause disturbances in the EU decision making processes. They argue that "the *acquis communautaire* reforms imposed upon applicants allow EU member states to identify countries that are likely to produce high political costs once accepted as new members....the closure of chapters signals that an applicant country will most likely not impede the smooth operation of future decision-making processes within the EU". This is why the Union applies an ever-increasing set of membership conditionality to applicant states at each round of enlargement. With every new round of negotiations, the EU has toughened up its criteria so as to get a clear signal about the compatibility of candidate countries. Plumper et al.'s conclusions are in line with the rational institutionalist approach which argues that states design international institutions to further their own goals, that design differences are not random, and that membership conditionality increases with uncertainty about the preferences of candidates (Koremenos et al., 2001). Sound though it may be, the argument that the accession negotiations help the Union clear the uncertainty about the candidate brings forth another question, the question of how exactly they do so. So far, the literature lacks a detailed explanation of the information transmission mechanisms embedded in the negotiations. Our contribution is demonstrating how exactly the signaling and learning takes place during the negotiations, and how the design can be improved upon. We model the negotiations as a Bayesian game and demonstrate how exactly the design in place helps the Union in gathering information about the candidate country. Our model also enables

us to compare alternative negotiation designs in terms of their ability to alleviate informational problems. We compare the resulting equilibrium payoffs under different negotiation designs to see whether there is any ground for a player to prefer a particular design over others. Based on our results, we conclude that whether a negotiation design is optimal or not in terms of its capacity to reveal information to the EU depends on what kind of a belief the EU has about the candidate at the beginning of the negotiations.

The purpose of this paper is to provide a detailed insight into the EU accession negotiations and their informational role, from a rational institutionalist perspective with special emphasis on the Turkish accession negotiations, a particularly difficult case for the Union. In Section 2, a brief discussion of accession negotiations will be conducted to help us in constructing our game setup. In Section 3, we model the accession negotiations as a Bayesian game, and analyze three different designs, one of them being the design currently in use. The games are compared in terms of their equilibrium outcomes and payoffs for the players, to see whether there is any ground for a player to prefer a particular game over the other. As a result of this comparison, one better understands why the design of the negotiations evolved in the way it did. Our model builds on Plumper et al.'s argument that the EU observes the closure of chapters to gain information about the candidate. Our results support Koremenos et al.'s rational institution design conjecture that restrictive membership increases with uncertainty about the preferences of candidates.

## 2 ACCESSION TO THE EU

There are explicit conditions for joining the EU that reflect the values and interests of the member states. These conditions have been set out in the Treaties, Council statements, and legal agreements between the EU and candidates (Smith, 2003). The 1993 Copenhagen criteria adopted by the European Council as a framework for enlargement, specify the conditions that an applicant country has to fulfill in order for accession negotiations to begin. The process of negotiations is in turn determined by the ability of the candidate country to adopt 85,000 page *acquis communautaire*. The *acquis* is organized into chapters which, in turn, are organized among themselves according to their level of importance, with the chapters relating to the single market and four freedoms coming first. However, the chapters to be negotiated does not have to follow a specific order. The first phase of negotiations is the screening phase, an analytical examination of the *acquis*. The second phase is the opening of chapters for which there are no expected problems. In other words, candidates

start with the chapters that require less work from them, i.e. the easy chapters, and move on to the difficult ones. The EU can also add further requirements depending on the characteristics of the candidate. For example, the negotiation framework for Turkey includes conditions on good neighborly relations and continuous efforts towards a comprehensive settlement for the Cyprus problem, as well as an indirect recognition of the Republic of Cyprus (Turkish Foreign Ministry, 2007). The EU's stance might change with every new negotiation, from one candidate to the other. For example, with the 2004 enlargement, closing of chapters was possible once the candidate passed the legislation harmonizing its laws to the EU, and the EU did not expect to see the implementation of the legislation. In the case of Turkey and Croatia, for all such chapters, proof of implementation of legislation is necessary for their provisional closure. Similarly, in the previous rounds of negotiations, the *acquis* was presented to the candidates in the form of 31 chapters, however, with the Turkish and the Croatian cases, the chapters to be negotiated rose to 35. This, however, is understandable, as the *acquis* became more complex some chapters were divided into two.

In the process of negotiations, intergovernmental conferences between the EU and the candidate are held in addition to the regular meetings between the chief negotiator from the candidate and the Permanent Representatives of EU members (COREPER). During the screening process, the Commission conducts an examination of all 'relevant chapters' and concludes every chapter's screening with a screening report. The screening report, then has to be adopted by the Council unanimously as the 'common negotiating document'. The Commission handles the technical aspects and prepares the 'Draft Common Position' (DCP), submits it to the Council, which if unanimously approved, becomes the 'Common Position' (CP) presented to the candidate. The Council could adopt the Common Position in its Ad hoc Enlargement group if there is unanimity on the DCP (DCP becomes CP). If a member state does not agree with the DCP, then the Commission and the Council negotiate over the DCP and find an acceptable CP, either way, the Council reaches a Common Position which is then turned over to the candidate. The candidate needs to submit 'position papers' on the Commission's DCP, if the candidate agrees to the CP, the agreement would be decided as an Article of Accession Treaty. If she does not agree, then the Commission and the Council work on the CP and then present it to the candidate again. The process could be reiterated with back and forth positions until the candidate agrees and the Council adopts unanimously. As a result of this iteration, the chapter is discussed and provisionally closed at the IGC level-all 27

EU members and the candidate, and become an Article of the Accession Treaty. When all chapters are negotiated and provisionally closed, the Drafting committee of 27 member states' experts, the candidate, the Council secretariat and the Commission draw up the Accession Treaty, its annexes and protocols. Until the Accession Treaty is signed, the Commission can always reopen the provisionally closed chapters if the candidate fails to enforce the required legislation. This is the process through which the EU monitors the internal developments in the candidate country, and through which the linkages between the negotiations and domestic structures are maintained.

Although it sounds as if the EU just tells the candidate what needs to be done and the candidate does it, the process is not exactly so, for otherwise there would be no need to talk about a negotiation process. At the IGC level, there is not much discussion, however, in between the regular meetings there is usually significant articulation. The candidate country or the Commission can always ask for measures to ease the pain of transformation. Reform is always a costly project, both financially and politically, and especially so when the impulse comes from outside. In many cases governments of candidate countries find themselves faced with difficult trade-offs between short term and long term interests. They are to pay immediate costs of transformation in return for possible membership benefits which are to come at the end of a long and difficult journey. Candidates or the EU member states might demand long transitional periods, derogations, specific arrangements, and permanent safeguard clauses in certain policy areas to ease the pain of harmonization.

The Council may decide to help out the candidate by allowing the use of such measures. The Council can also use its authority to decide on what is sufficient, either to help out a candidate, or in some cases to make life more difficult for the candidate. In the case of the Greek membership negotiations, for example, we see a Council agreeing to welcome Greece into the Union in spite of the Commission opinion that Greece was far from fulfilling the necessary conditions in several chapters (Smith, 2003). Similarly, in 2003, the Council decided for the membership of the Republic of Cyprus, although Gunter Verheugen, the then Commissioner for Enlargement, publicly announced that Cyprus could not fulfill the *acquis* in the common foreign and security policy (Nugent, 2000). This is because the technical and political aspects of the negotiations are intertwined. Even though the negotiations process seems to be a technical issue, it actually is also highly political. The technical aspects are handled by the Commission and the political concerns come to the forefront in the Council where member state preferences play an important role. An illustration of its political character is provided by the December 2006 Council decision to suspend negotiations with

Turkey on eight chapters until Turkey agrees to open up her ports to the Republic of Cyprus. This decision may be understandable for those chapters about trade, but interestingly one of those eight chapters is agriculture (BBCTurkish, 2006). More importantly, the Council tacitly agreed to a closure criteria for every chapter: accordingly, every chapter's provisional closure will be subject to the Turkish moves on the Cyprus issue, even if Turkey fulfills all the technical aspects and adopts the *acquis* in its entirety in all the chapters. Thus, this demonstrates that certain political criteria could enter the negotiations process as a benchmarking criteria even when the screening process is completed with a positive report, and the candidate is able to fully adopt the *acquis*.

These examples clearly show that the decision to open and provisionally close chapters in the accession talks go beyond the candidate's ability to adopt the *acquis*. The Council, when deciding on what constitutes sufficient fulfillment, weighs possible costs to existing members of letting in a candidate country at her present status against the benefits of having that country as a member. What is important is that these costs and benefits are all subjectively assessed by each member state in a decision environment infested with informational imperfections. This subjectivity is most clear in the Turkish membership case. For member states like Austria and Germany, the possible costs to the EU of a future Turkish accession is very high, and so they are in favor of making chapter openings and closures as difficult as possible. On the other hand, EU member states such as Britain and Spain, who believe that the benefits of Turkish membership outweigh its costs, are more supportive in their attitudes. Interestingly, both sides' arguments are based on probabilistic assessments of future trends and events. Austria probably believes that Turkey will not be able to catch up with the other EU members in terms of economic development, and also that her population will continue to grow fast which will then disturb the labor markets in the EU (Strasser, 2008). It is also probable that many Austrian politicians do not see Turkey as European, and thus fear that her inclusion will be detrimental to the deepening of integration. Britain on the other hand, probably sees a future Turkey, who, after successfully completing her transformation, becomes the stronghold of democracy and stability on the Middle Eastern border of the EU. According to the former British Foreign Minister Jack Straw, "it is going to be a long road ahead for bringing Turkey into the EU, but it is a prize worth striving for" (Beunderman, 2005). Moreover, the possibility that integration may slow down when Turkey joins, may even register as a benefit on the British side. In short, the Council's decision is shaped through the reconciliation of these different and most often conflicting calculations. Thus, one can always argue that how

much transformation a candidate is to go through depends, among other things, on what kind of support she has in the Council. And support in the Council depends on the beliefs the member countries carry about the candidate. This argument can be formalized in a Bayesian negotiation game setting between the EU and a candidate country where the EU members are divided among themselves about whether the candidate will be able to handle the necessary transformations or not, and whether bringing the candidate into the EU is a ‘prize worth striving for’.

### 3 THE MODEL

We have two players, the EU and the candidate country (hereafter referred to as the Candidate), negotiating over a finite set of chapters. For simplicity we will consider a game with two chapters. Each chapter consists of certain adaptation measures to be taken by the Candidate to harmonize its policies and structures with the EU. Thus, each chapter carries with it certain costs of adaptation. Depending on the characteristics of the Candidate, these costs may be high in some areas and low in others. Furthermore, it is not possible for the EU to know in advance how costly it is going to be for the Candidate to carry out all the necessary reforms since the costs depend on the interaction of different domestic and transnational interests groups, and their influence on the candidate country’s government. As an outsider, the EU does not have enough information about the domestic politics of the Candidate to know what kind of opposition each reform project will face in the candidate country, and how costly it will be to overcome that opposition. Since the uncertainty stems from lack of information about the workings of the candidate country’s domestic politics, the Candidate does not suffer from the same informational gap. So, in our game we have an informational asymmetry.

Although the EU does not have complete information about the costs of reforms, she has her belief in terms of a probability distribution on the possible levels of costs. She believes the adaptation costs for the Candidate are either *high* or *low*. We will denote the probability the EU assigns to the costs being low as  $p$ , where  $p$  is a random variable continuously distributed over the interval  $(0, 1)$ . Since the EU is not monolithic, and there is variation among members over possible costs, one can think of this  $p$  as reflecting the strength of the coalition of member states who perceive the costs low. And, this information is public, that is to say, the Candidate is perfectly informed about the EU’s belief about her costs of adjustment.

In light of the EU’s belief structure we can say that the Candidate can be one of the two types;

a high-cost candidate, or a low-cost candidate. When the negotiations start the EU is uncertain about which type she is facing. We will denote the cost of closing chapter  $j$  with  $\delta_j$ , where  $\delta_j > 0$  for all  $j \in \{1, 2\}$ . The total cost of adjustment for a candidate is then going to be  $\delta = \delta_1 + \delta_2$ . Since we have two possible cost structures, we will denote the costs of adjustment for a high-cost candidate with  $\delta(hc)$ , where  $\delta(hc) = \delta_1(hc) + \delta_2(hc)$  and the costs of adjustment for a low-cost candidate with  $\delta(lc)$ , where  $\delta(lc) = \delta_1(lc) + \delta_2(lc)$  with  $\delta_1(hc) > \delta_1(lc)$  and  $\delta_2(hc) > \delta_2(lc)$ .

The accession negotiations cover various areas, and reforms in each area differ in terms of their costs. In some areas, the candidate might already be close to the EU standards necessitating some minor transformations, or the issue may be of interest to a relatively few and not so powerful interest groups, which enables the candidate country to carry out the reforms easily. Whereas in others, the reforms may require substantial changes generating strong oppositions from numerous interest groups. An example of an easy chapter might be the one on science and research, a chapter that Turkey opened and provisionally closed with relative ease in June 2006. Whereas negotiations on four freedoms and agriculture usually last longer and are more heated. In line with this characteristic of the accession negotiations we will assume that in our two-chapter game, chapter 1 is less costly to adopt than chapter 2, that is,  $\delta_2(hc) > \delta_1(hc)$  and  $\delta_2(lc) > \delta_1(lc)$ .

Note that the cost of closing a certain chapter will be different for different candidate countries. The EU may be able to compare candidate countries in terms of their closing costs for a chapter. That is, the EU may know very well that it will be more costly for Candidate A than Candidate B to close chapter 2. But, being able to make this comparison does not really help the EU to figure out the types of the candidates (that is, whether they are high-cost or low-cost). Such an assessment requires the EU to know exactly how costly it is going to be for Candidate A and B to carry out all the necessary reforms for chapter 2.

Upon the completion of the screening process the Commission presents the DCP to the Candidate. The negotiation game starts when the Candidate responds to the DCP with a position paper declaring whether she is willing to go through all the required transformations presented in the DCP or not. For those chapters she adopts without contest, she fully assumes the associated costs of harmonization. If she finds the requirements of a specific chapter too costly to be applicable she can always call on to the EU to reconsider that chapter and help her in closing it by reducing the requirements of the chapter. In other words, she may demand support. In the formal EU language, this corresponds to situations where the Candidate asks for derogations, safeguard clauses, specific

arrangements, or transitional periods, or simply to situations where she leaves some conditions unfulfilled<sup>1</sup>. If the Commission and the Council accept the Candidate's demand then this implies they are willing to let in a candidate whose structures and/or policies are not exactly in congruence with the EU norms in some areas. This can be interpreted as the EU assuming the costs of harmonization, because once a candidate becomes a member, her deviations from the EU policies, norms and structures start affecting all other member states. A new member whose preferences on a specific issue diverge from existing members' preferences may block decision making in that issue area as Moravcsik and Vachudova (2003) and Plumper et al. (2005) argue. The Cyprus membership is a perfect example of such a situation. The European Council by deciding to accept the Cypriot accession disregarding the fact that Cyprus was short of fulfilling the Common Foreign and Security Policy chapter, in a sense imported the age-old Cyprus problem and made it its own. So, now the costs of solving that problem have fallen on the member states' shoulders. On the other hand, the EU can always reject demands for support and insist that the Candidate do all that is necessary before closing a chapter. Faced with a rejection a candidate has the option to withdraw her demand but at the cost of losing face domestically. We will assume that the Candidate incurs domestic audience costs (Fearon, 94) in case she withdraws a demand for transitional measures that has been rejected by the EU. We will denote this cost by  $c$ , where  $c > 0$ . It can be argued that the domestic audience cost should be different for each chapter depending on the size of the constituency the chapter affects. Although this is a valid argument, the inclusion of chapter specific audience costs do not add to the explanatory power of our model so for the sake of simplicity we assume constant audience costs. Note that the audience cost assumption also has embedded in it a further assumption that the domestic constituency (which can be different interest groups depending on the subject) is fully informed about the negotiation process. This may, in some cases, be a strong assumption, but since we are only interested in the uncertainty on the Union's part, for the sake of being parsimonious, we assume the constituency is fully informed.

Finally, to define the preference relations of the players, we will assume that the EU receives a positive payoff from the accession of a candidate that has gone through all the necessary transfor-

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<sup>1</sup>It can be argued that transitional periods only postpone the costs for a candidate rather than transferring them to the EU. But as Moravcsik and Vachudova (2003) argue, once a candidate becomes a member we should expect the new member to deploy her voting and veto power to transfer resources to herself to ease the pain of transformation. In other words, we should expect her to try to shift the burden of her deviations from the EU policies, norms and structures to other member states.

mations required within the chapters. A perfect illustration was provided with Swedish, Austrian, and Finnish accession talks where almost none of the chapters required significant adaptation and the EU reaped positive payoffs from their membership. This would probably be the case if Norway or Switzerland decided to join, even though they do not intend to in the near future. We will denote the EU's payoff with  $v$ , where  $v > 0$ <sup>2</sup>. Similarly, we will assume that the Candidate receives a positive payoff from becoming a member of the EU or else she would not have applied for membership. We will denote the Candidate's payoff with  $u$ , where  $u > 0$ .

The net payoff to each player depends on the amount of transformation the Candidate goes through to become a member. If the Candidate agrees to adopt all chapters in their entirety, then the EU receives  $v$ , whereas the Candidate receives  $u - \delta(hc)$  or  $u - \delta(lc)$  depending on whether she is a low-cost or a high-cost candidate. Similarly, if the Candidate declares in her position papers that she needs support from the EU in terms of financial compensation or time, for one or both chapters, and if the EU accepts these demands, then the net payoff the EU receives is calculated by deducting from  $v$  the costs of those chapters that are provisionally closed without all the necessary adaptations. On the other hand, the net payoff the Candidate receives is calculated by deducting from  $u$  the costs of chapters she adopted in their entirety. To give an example, if a low-cost type candidate adopts chapter 1 in its entirety, and demands transitional measures for chapter 2, and if the EU accepts her demand, then the Candidate receives  $u - \delta_1(lc)$ , and the EU receives  $v - \delta_2(lc)$ . One can always argue that the costs of adjustment for the Candidate and the costs to the EU of accepting demands for transitional measures are not necessarily the same<sup>3</sup>. This argument is completely valid, but incorporating it in our model only introduces further notation without changing the results as long as we work under the assumption (which we will specify shortly) that there exists a chapter(s) for which transitional measures are too costly for the EU to ease.

In terms of costs and benefits of membership, we will assume the following relations;

1.  $u - \delta(lc) > 0$  and  $u - \delta_2(lc) - c > 0$  but  $u - \delta(lc) - c < 0$ , which implies that a low-cost type candidate would be willing to accept the adaptation and harmonization to the acquis

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<sup>2</sup>Note that we do not necessarily assume uniform payoff for the EU as a whole. The payoff from the accession of the Candidate can differ for each member state. The payoff  $v$  then can be thought of as the total payoff that accrues to the member states.

<sup>3</sup>There may be numerous reasons for why the costs should differ for the Candidate and the EU, one of which is that there may also be audience costs for the EU (or for some EU members) associated with accepting transitional measures. We thank the anonymous referee for bringing this point to our attention.

in order to become a member of the EU, but this willingness would be compromised if the EU rejects all her demands in terms of transitional measures and the Candidate has to bear domestic audience costs. The 1994 Norwegian referendum is a case in point. Although a low-cost candidate who could have handled the adaptation and harmonization to the *acquis* very easily, Norway did not become a member as the Norwegian public declared negative opinion, which stemmed mostly from the negotiations on the EU's policy on fisheries, monetary union, and institutional decision making, as well as the Norwegian fear of losing sovereignty (Geyer, 1997; Sogner and Archer, 1995).

2.  $u - \delta_1(hc) > 0$ , and  $u - \delta_1(hc) - c > 0$  which implies that a high-cost type candidate would be willing to adopt the easy chapter in its entirety. The relative ease of negotiations on chapters like science and research for most applicants verifies this assumption.
3.  $u - \delta_2(hc) < 0$ , which implies that a high-cost type candidate would find the costs of adopting the difficult chapter in its entirety too high. Poland, for example, requested and was granted transitional arrangements on the agriculture chapter. Similarly, she got transitional arrangements for her state aid policies under the competition policy chapter. We will also examine the case in which this assumption is reversed.
4.  $v - \delta(lc) > 0$ , which implies that the EU would be willing to let in a low-cost type candidate even if she does not go through all the necessary transformations. The rationale behind such an attitude is that a low-cost type candidate would already be close to the EU norms with little left to do. And that little can be taken care of later relatively easily. Negotiations with Austria can be seen as an example in line with this assumption; Austrian requests like limitations on the lorry traffic through its territory and on the right of EU citizens to buy property in Austria were all accepted by the EU (Granell, 1995).
5.  $v - \delta_1(hc) > 0$  which implies that the EU would be willing to help out a high-cost candidate with the adjustment costs of the easy chapter. An example would be the transitional measures given to Poland in terms of competition in postal services.
6.  $v - \delta_2(hc) < 0$  which implies that the EU would not be willing to let in a high-cost type candidate who has not completed the required reforms for the difficult chapter. The insistence of the EU on the closure of the Temelin nuclear plant in Czech Republic makes a case in point.

The EU's decision to suspend negotiations on eight chapters until Turkey opens up her ports to the Republic of Cyprus is another example.

In the following section we will construct the extensive form of the game we have described so far, under the assumption that all chapters are opened simultaneously. We will be looking for the pure strategy sequential equilibria of this game. Then, in the next section, we will switch to the assumption that the chapters are opened one-by-one and we will construct our game accordingly. We will first look at this game under the assumption that the easy chapter is opened first. Then we will analyze the case when the difficult chapter goes first. In both games we will find the pure strategy sequential equilibria. As we discussed above, only the game in which the easy chapter is opened first reflects the real life negotiation design. We analyze the other two designs to unearth the rationals behind the actual one, and to see whether it can be improved upon. Before comparing these different games, we will also consider the case when *Assumption 3* is reversed, i.e., when  $u - \delta_2(hc) > 0$ , which implies that the benefit of becoming a member outweighs the costs of adjustment for the difficult chapter even for a high-cost type candidate. We will investigate if this makes a difference in terms of equilibrium behavior of players. Finally, in the concluding section we will compare these three designs from the point of view of both the EU and the Candidate.

### 3.1 The Simultaneous Chapters Game

In the negotiation game where the chapters are all opened simultaneously, the Candidate (*CD*) is faced with the choice among adopting them both in their entirety, adopting one in its entirety while demanding transitional measures for the other, and demanding transitional measures for both. In other words, the action set of the Candidate,  $A_{CD}$ , is;

$$A_{CD} = \left\{ \begin{array}{l} \text{Demand transitional measures for both chapters (DTB),} \\ \text{Adopt chapter 1 in its entirety and demand transitional measures for chapter 2 (Ad}_1\text{,Dt}_2\text{),} \\ \text{Adopt chapter 2 in its entirety and demand transitional measures for chapter 1 (Ad}_2\text{,Dt}_1\text{),} \\ \text{Adopt both chapters in their entirety (ADB)} \end{array} \right.$$

If the Candidate adopts all the chapters in their entirety, then the game ends with the Candidate assuming all the costs of adjustment. If, on the other hand, the Candidate demands transitional measures for one or both chapters then the EU is to decide whether to accept this demand (*Ac*) or reject it (*Re*). But this decision has to be made in an environment with incomplete information since the EU does not know the type of the candidate with certainty. In other words, there is

uncertainty about the costs of letting the Candidate in before she fulfills the necessary conditions completely. Faced with this uncertainty the EU decides according to her beliefs about the type of the Candidate. If the EU accepts the Candidate's demand for transitional measures, she assumes the costs of adjustment for the chapter(s) for which the demand was made. The Candidate then assumes the cost of the remaining chapter which she has acquiesced (if she did so for any) to adopt in its entirety. If, on the other hand, the EU rejects the Candidate's demand for transitional measures then the Candidate can either backdown (*Bd*) and adopt both chapters in their entirety, or decide to leave the negotiation table (*Ex*). In case she backsdown, she pays a fixed domestic political audience cost  $c$ .

We will be looking at the pure strategy sequential equilibria of this game which is depicted in Figure.1.

**Proposition 1** *When  $p$  is sufficiently large, that is, when the EU believes that the Candidate is a low-cost type with a high probability, ( $p > \bar{p} = \frac{\delta(hc)-v}{\delta(hc)-\delta(lc)}$ ), the simultaneous chapters game, depicted in Figure 1, has pure strategy sequential equilibria in which the Candidate, regardless of her type, demands transitional measures for both chapters and the EU accepts her demand. All costs of adjustment are assumed by the EU. In terms of payoffs, the Candidate receives  $u$ , whereas the EU receives  $[p(v - \delta(lc)) + (1 - p)(v - \delta(hc))]$ .*

**Proposition 2** *When  $p$  is smaller than the above critical value  $\bar{p}$ , but is still sufficiently large ( $\bar{p} > p > p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ ), the simultaneous chapters game, depicted in Figure 1, has a pure strategy sequential equilibrium in which the Candidate, regardless of her type, joins the EU after only incurring the costs of adjustment for the easy chapter. She demands transitional measures for the difficult chapter and the EU accepts her demand. The costs of adjustment for the difficult chapter are assumed by the EU. In terms of payoffs, a low-cost candidate receives  $(u - \delta_1(lc))$ , a high-cost candidate receives  $(u - \delta_1(hc))$ , and the EU receives  $[p(v - \delta_2(lc)) + (1 - p)(v - \delta_2(hc))]$ .*

**Proposition 3** *When  $p$  is sufficiently small ( $p < p^*$ ) the only pure strategy sequential equilibria of the simultaneous chapters game, depicted in Figure 1, are such that only a low-cost candidate joins the EU after fulfilling all the requirements of the difficult chapter on her own. She demands transitional measures for the easy chapter and the EU accepts her demand. A high-cost candidate, on the other hand, leaves the table after her demand for transitional measures for the difficult chapter gets rejected by the EU. In terms of payoffs, a low-cost candidate receives  $(u - \delta_2(lc))$ , a high-cost candidate receives 0, and the EU receives  $p(v - \delta_1(lc))$ .*

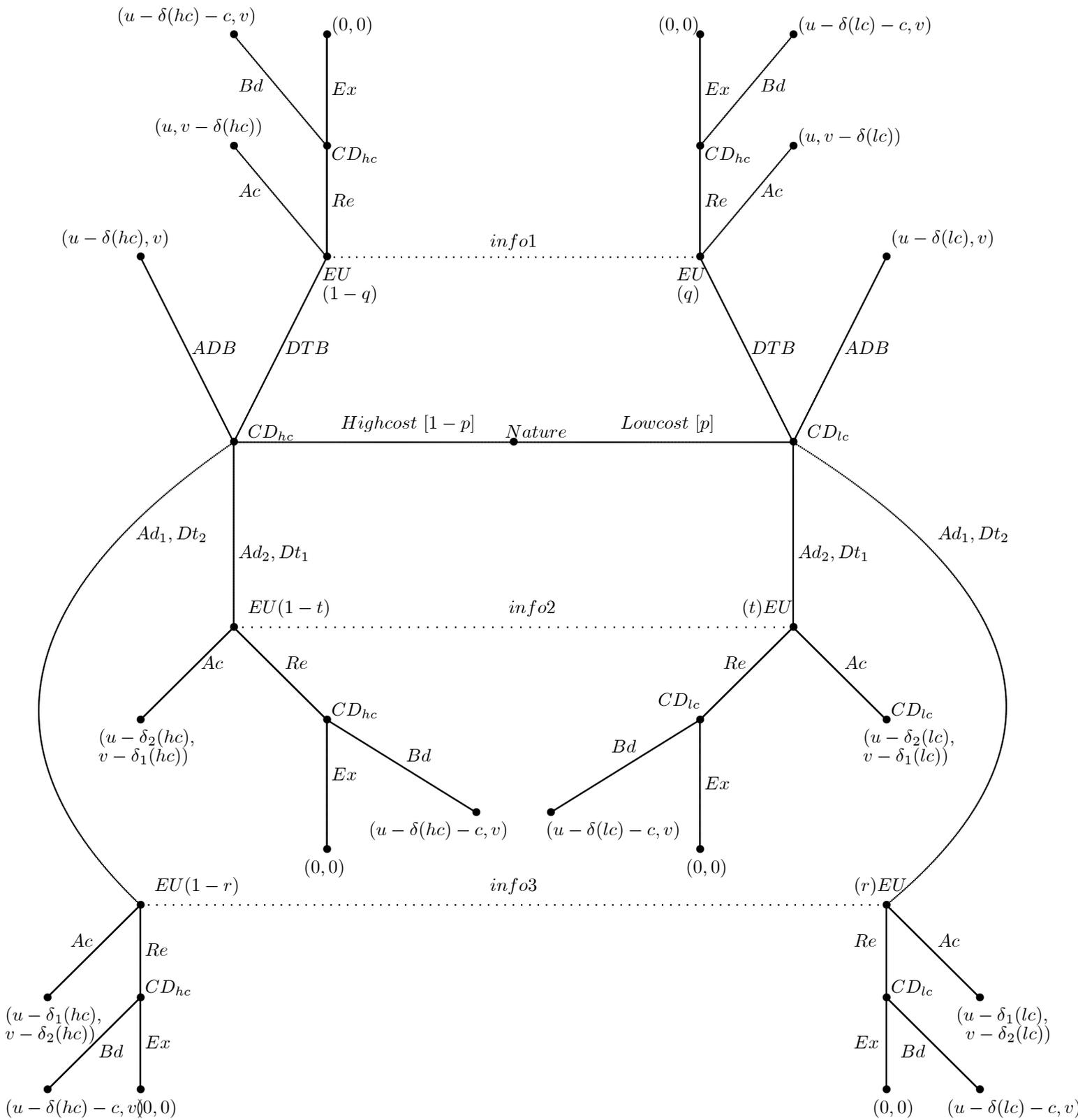


Figure 1: Simultaneous chapters game

**Proofs.** See Appendix. ■

The simultaneous chapters game subjects the EU to the risk of letting in a high-cost Candidate while taking on all her adjustment costs when she believes she is facing a low-cost type candidate with a high probability, that is when  $p$  is sufficiently large. When  $p$  is smaller that risk vanishes, but for  $p > p^*$  there still remains the equilibrium described in *Proposition 2*, which means that the EU still suffers the risk of taking on a high-cost candidate's costs of adjustment for the difficult chapter. Only when  $p$  is sufficiently small the game becomes immune to pooling equilibria, and the EU then can separate a high-cost candidate from a low-cost one.

## 3.2 The Chapter-by-Chapter Game

There are two ways to design the chapter-by-chapter negotiation game depending on whether the easy or the difficult chapter is opened up for negotiation first. We will start by analyzing the game in which the easy chapter is opened up first.

### 3.2.1 The Easy Chapter Goes First

The game starts with the opening up of (the less costly) Chapter 1. The candidate is faced with a choice between adopting the chapter in its entirety ( $Ad_1$ ) and demanding transitional measures for it ( $Dt_1$ ). Her demand, presented in her position paper, then is evaluated by the EU who can reject (Re) or accept it ( $Ac$ ). If faced with a rejection the Candidate then decides whether to back down ( $Bd$ ) from her demand or to leave the table ( $Ex$ ). Backing down, as it was the case in the simultaneous-chapters game, carries with it a domestic political audience cost. Negotiations on Chapter 2 start only after the provisional closure of Chapter 1. Negotiations on the second chapter follow exactly the same structure as the negotiations on the first chapter. The Candidate chooses either to adopt the chapter in its entirety ( $Ad_2$ ) or demand transitional measures for it ( $Dt_2$ ). If the Candidate demands transitional measures, the EU is then to decide whether to accept this demand ( $Ac$ ) or reject it (Re). If the EU rejects her demand then the Candidate decides whether to backdown ( $Bd$ ) or to leave the table ( $Ex$ ).

**Proposition 4** *The chapter-by-chapter game, depicted in Figure 2, does **not** have any equilibrium in which all costs are assumed by the EU. Thus the Candidate can **not** join the EU without incurring any costs.*

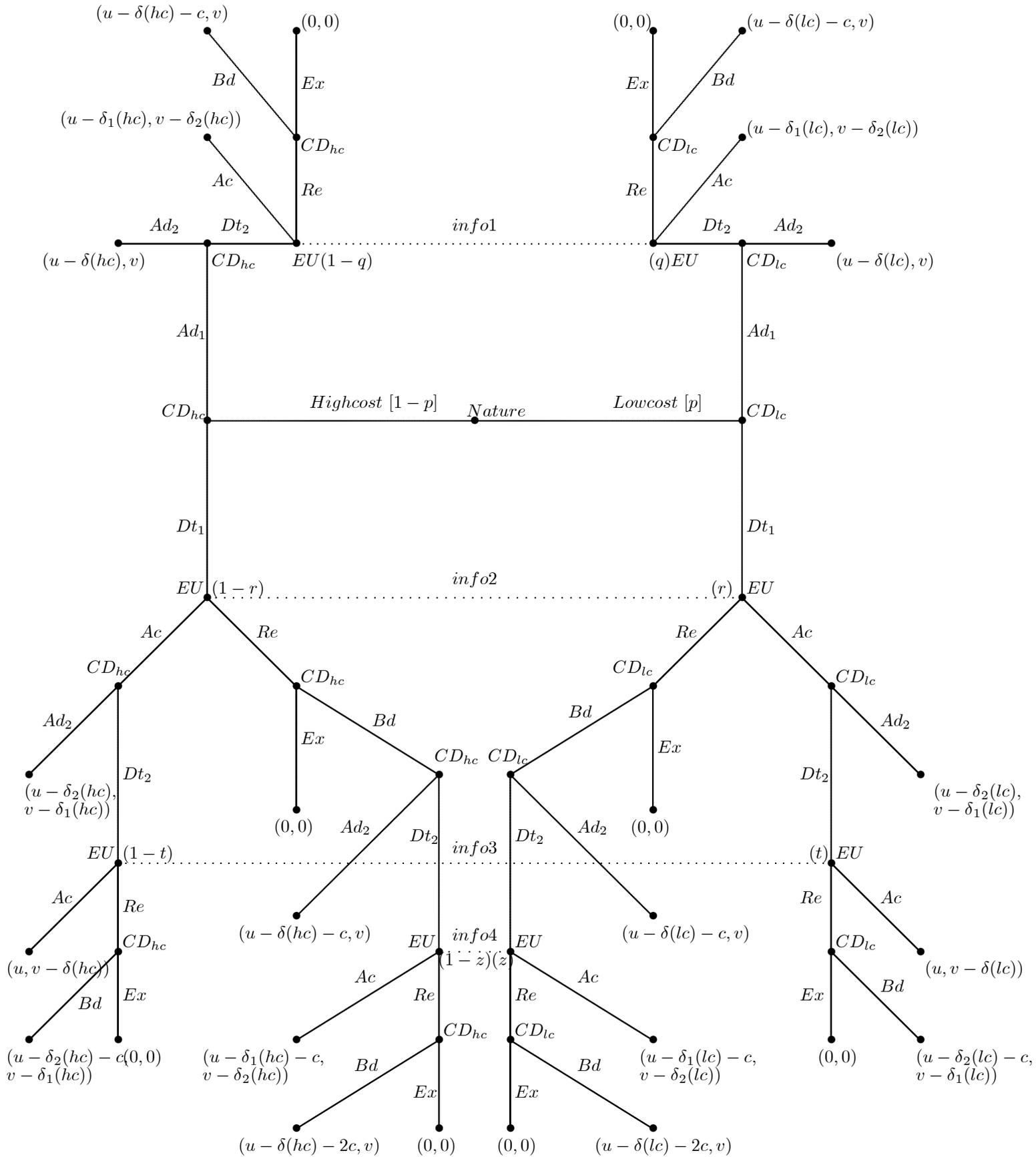


Figure 2: Chapter-by-Chapter Game. The easy chapter is opened up first.

**Proposition 5** *When  $p$  is sufficiently large ( $p > p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ ), the chapter-by-chapter game, depicted in Figure 2, has a pure strategy sequential equilibrium in which the Candidate, regardless of her type, joins the EU after only incurring the costs of adjustment for the easy chapter. The costs of adjustment for the difficult chapter are assumed by the EU. In terms of payoffs, a low-cost candidate receives  $(u - \delta_1(lc))$ , a high-cost candidate receives  $(u - \delta_1(hc))$ , and the EU receives  $[p(v - \delta_2(lc)) + (1 - p)(v - \delta_2(hc))]$ .*

**Proposition 6** *When  $p$  is sufficiently small ( $p < p^*$ ) the only pure strategy sequential equilibria of the chapter-by-chapter game, depicted in Figure 2, are such that only a low-cost candidate joins the EU after fulfilling all the requirements of the difficult chapter on her own. She demands transitional measures for the easy chapter and the EU accepts her demand. A high-cost candidate, on the other hand, leaves the table after her demand for transitional measures for the difficult chapter gets rejected by the EU. In terms of payoffs, a low-cost candidate receives  $(u - \delta_2(lc))$ , a high-cost candidate receives 0, and the EU receives  $p(v - \delta_1(lc))$ .*

**Proofs.** See Appendix. ■

The chapter-by-chapter game that starts with the less costly chapter is free of any equilibrium in which the EU assumes all costs of adjustment. But it still subjects the EU to the risk of taking on the adjustment costs of a high-cost candidate for the difficult chapter when  $p > p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ . That risk only vanishes when  $p < p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ . Then all sequential equilibria are separating which means the EU can tell a high-cost candidate from a low-cost one, and act accordingly.

### 3.2.2 The Difficult Chapter Goes First

In this case, the chapter-by-chapter game starts with negotiations on (the more costly) Chapter 2 first.

**Proposition 7** *The chapter-by-chapter game in Figure 3 which starts with the difficult chapter has a unique pure strategy sequential equilibrium in which only a low-cost type candidate joins the EU after adopting the difficult chapter in its entirety. A high-cost type candidate leaves the negotiations after her demand for transitional measures for the difficult chapter gets rejected by the EU. In terms of payoffs, the Candidate receives  $u - \delta_2(lc)$  if she is a low-cost type and 0 if she is a high-cost type. The EU receives  $[p(v - \delta_1(lc))]$ .*

**Proof.** See Appendix. ■

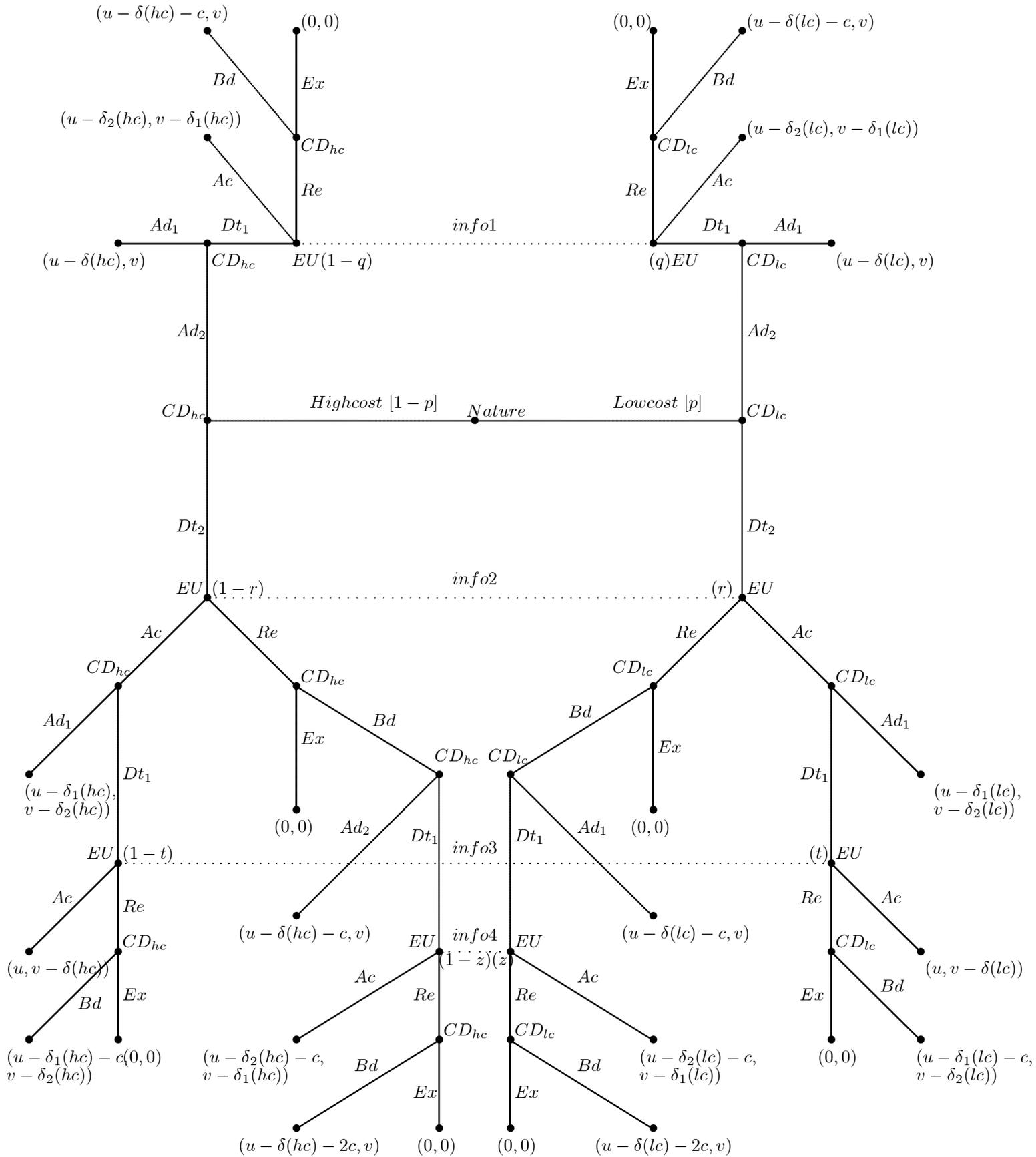


Figure 3: The Chapter-by-Chapter Game. The difficult chapter is opened up first.

The chapter-by-chapter game that starts with the difficult chapter has a unique equilibrium and it is a separating one. Thus it eliminates all the risk for the EU that comes with a possible pooling equilibrium. In this game there are no possible gains for a high-cost type candidate from mimicking a low-cost type. So, the types diverge in their choices enabling the EU to know who she is dealing with rather than having to make guesses. Once certain about the Candidate's type, the EU then can safely decide to allow in a low-cost candidate with minimum compromise.

### 3.3 Changing The Assumptions

So far we have assumed that a high-cost candidate country would be unwilling to adopt the difficult chapter in its entirety because the costs of adjustment would surpass the benefits of becoming a member. An interesting question is what happens if this is not so, that is, if the benefits of becoming a member outweighs the costs of adjustment for the difficult chapter even for a high cost candidate. In formal notation, we will be looking at the case when  $u - \delta_2(hc) > 0$ . Would it make a difference in terms of equilibrium behavior?

**Proposition 8** *Under the assumption that  $u - \delta_2(hc) > 0$ , the simultaneous chapters game, depicted in Figure 1, still has pure strategy sequential equilibria in which the EU assumes all or most of the costs of adjustment.*

**Proof.** See Appendix. ■

The simultaneous chapters game still carries the risks for the EU of letting in a high-cost candidate while taking on all her adjustment costs if  $p > \bar{p}$ , and most of her costs if  $\bar{p} > p > p^*$ . It does not matter whether the Candidate can handle the costs of adjustment all by herself or not. As long as there is a possibility that the EU will be willing to help out, and the Candidate will ask for that help subjecting the EU to the risk of saying yes to a candidate that will turn out to be too costly.

**Proposition 9** *Under the assumption that  $u - \delta_2(hc) > 0$ , the chapter-by-chapter game that starts with the easy chapter, depicted in Figure 2, still has a pure strategy sequential equilibrium in which the EU assumes most of the costs of adjustment.*

**Proof.** See Appendix. ■

The chapter-by-chapter game that starts with the easy chapter still has a risky equilibrium for the EU in which the EU accepts the demands of a high-cost Candidate and takes on the costs of

adjustment for the difficult chapter.

**Proposition 10** *Under the assumption that  $u - \delta_2(hc) > 0$ , the chapter-by-chapter game that starts with the difficult chapter has a unique pure strategy sequential equilibrium in which the Candidate, regardless of her type, joins the EU after adopting the difficult chapter in its entirety. She demands transitional measures for the easy chapter and the EU accepts her demand. In terms of payoffs, then, the Candidate receives  $u - \delta_2(lc)$  if she is a low-cost type and  $u - \delta_2(hc)$  if she is a high-cost type, whereas the EU receives  $[p(v - \delta_1(lc)) + (1 - p)(u - \delta_1(hc))]$ .*

**Proof.** See Appendix. ■

This unique equilibrium is only different from the one under the initial assumption in terms of the behavior of a high-cost candidate. This time she stays in the game and joins the EU after she adopts the difficult chapter in its entirety.

## 4 DISCUSSION

We have analyzed three different design alternatives the EU can employ to conduct accession negotiations with candidate countries: the negotiations can be conducted simultaneously on all chapters of the acquis; they can be conducted chapter-by-chapter starting with the easy chapters; and they can be conducted chapter-by-chapter starting with the difficult chapters. The possible outcomes in all these three games that we have analyzed so far simply determine how costly enlargement is going to be for the EU, and for a candidate. In that sense, there are only three types of outcomes, and three payoff structures that can be obtained in any equilibrium in which enlargement actually takes place: either the EU supports the candidate in all necessary transformations (call this "equilibrium type 1"); or she gives support with the difficult issues while the candidate handles the easy ones on her own (equilibrium type 2); or she gives support with the easy issues while the candidate handles the difficult ones with her own resources (equilibrium type 3). Adopting all chapters in their entirety is suboptimal for the candidate under the current assumptions, so it is not a possible equilibrium outcome. And, in reality no country joined the EU without getting transitional periods and/or safeguard clauses for several chapters.

The EU gets the highest payoff from a type 3 equilibrium. She gets the second highest payoff from a type 2 equilibrium; and the lowest payoff from a type 1 equilibrium. Conversely, the

candidate gets the highest payoff from a type 1 equilibrium; the second highest from a type 2 equilibrium; and the lowest payoff from a type 3 equilibrium.

Our analyses demonstrate that:

- If the EU believes a candidate to be high-cost with a high probability ( $p^* > p$ ), that is, if the EU believes that the candidate will most probably not be able to handle the difficult chapters then there will be no difference in terms of equilibrium outcomes for the EU no matter which of the three ways the negotiations are designed. In such a case, any design choice is rational on the EU's part;
- If the EU believes a candidate to be low-cost with high probability ( $p > p^*$ ), she should prefer a chapter-by-chapter negotiation rather than the simultaneous chapter openings as the latter may result in a low-payoff equilibrium. Thus, the EU's decision to conduct the negotiations chapter-by-chapter rather than negotiating over all the chapters simultaneously is rational. If the EU believes that the probability that a candidate can make all the necessary reforms included in the chapters is high, then by negotiating chapter-by-chapter, the EU shields herself from the risk of possible low payoff outcomes;
- If the EU believes a candidate to be low-cost with high probability ( $p > p^*$ ), she can further reduce the risk she is subject to, by starting the negotiations with difficult chapters. Such a design choice eliminates any risk of ending up in a type 2 equilibrium. This, however, is an interesting result of our analyses, because the EU has so far chosen to begin the accession negotiations with the relatively easier chapters, thereby exposing herself to higher risks and costs.

These three results raise three important questions:

1. The first question is whether the design currently in place is a rational choice on the part of the EU given the uncertainty surrounding the compatibility of Turkey as a member. The above results tells us that it is a rational design if EU members believe Turkey to be a high-cost candidate with high probability ( $p^* > p$ ). And all the discussion about the Turkish candidacy indicates that they do so.<sup>4</sup>

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<sup>4</sup>One can also argue that by starting with easy chapters the EU might be trying to increase the parties' commitment to the negotiation process and to build momentum to make it easier for the candidate to accept the costs of the difficult

2. The second question is about the invariance in the negotiation design over time. Former candidates also have gone through chapter-by-chapter negotiations, and they have started the negotiations with the easier chapters. Our analyses demonstrate that once there is uncertainty about the type of a candidate, chapter-by-chapter negotiations starting with the easy chapters is only optimal when the EU members believe the candidate to be high-cost with a high probability ( $p^* > p$ ). But, considering the previous enlargements, such a belief for all the former candidates is highly unlikely. Did EU members believe Sweden to be high-cost? Probably not. But then the EU should have started the negotiations with Sweden with the difficult chapters to shield herself from a type 2 equilibrium. Our explanation for this apparent irrationality is that the negotiation design is relevant only when there is uncertainty about the type of a candidate. As we have discussed at the very beginning of the article, the risks for the EU originate from the asymmetric distribution of information. The EU runs the risk of confusing a high-cost candidate with a low-cost one because she is just not able to tell for sure how costly it is going to be for the Candidate to adapt to the EU ways of doing things. If there is no such uncertainty, that is, if the EU has enough information on the Candidate, then there is no risk of confusion to begin with. And then it does not really matter which negotiation design is being used. One can argue that the extensive cultural, economical, and historical ties of the EU members with most of the former applicants eradicated informational asymmetries that could have affected their membership negotiations. Interestingly, in Turkey's case those ties are not as strong and extensive, and hence we see the discussion about whether Turkey belongs to Europe or not.
3. The final question we raise is whether this argument about the absence of uncertainty was valid for all previous candidates before Turkey. In other words, can we explain the lack of change in the negotiation design with absence of uncertainty in all former cases before Turkey? We argue that we can not, and that in some cases the EU should have started the negotiations with the difficult chapters in order to protect itself from the risk of a type 2 equilibrium. The accession of Cyprus is a good example of such an outcome. Cyprus was mistakenly seen as a low-cost candidate and was let in without fulfilling the requirements of some difficult chapters like the common foreign and security policy. But the high cost of the

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chapter(s). Because we have assumed the chapter closings to be independent of each other, our model does not allow us to study such commitment effects of various negotiation designs.

incongruence of preferences between Cyprus and other members became obvious soon after Cyprus became a member (Hoffmeister, 2006).

Why did not the EU switched to a less risky negotiation design then? Here the answer lies in the fact that enlargement up until now happened in waves (Friis, 2005). There the decision was not about which design to use with each candidate but rather which design to use with all of them. Thus, it was a completely different calculation than the simple, one candidate country, cost-benefit analysis we employed here. Each time the EU was to decide on whether to accept or reject a demand from a candidate country, she was to think about possible repercussions of her decision on negotiations with others in the same group. Similarly, each candidate in a group of candidates was to act strategically and consider the past and possible future moves of other candidates before acting. In short, the decision to switch to an alternative negotiation design with a candidate while negotiating with a group of candidates simultaneously was not simply based on the characteristics of that candidate, but rather on the characteristics of the whole group. The Commission and the Council could have employed a different negotiation design with Cyprus. They could have made the opening up of chapters conditional on the successful closure of the common foreign and security policy chapter first. Given that a substantial coalition of EU members were at best skeptical about the suitability of the Republic of Cyprus given the situation on the island, this would have been a rational choice, but only if the EU was negotiating with the Republic of Cyprus in isolation. The fact that there were other negotiations running simultaneously made this option infeasible. What is more, the possibility of a Greek veto on Central and Eastern European enlargement eliminated conditional closures for Cyprus (Stefanou, 2005).

From the viewpoint of the Candidate, it is obvious that she should insist on simultaneous chapter openings if she knows that the EU member states believe her to be low-cost, which might be the case for a small and economically developed state with close cultural and historical ties with EU members, but which is certainly not the case for Turkey. That means Turkey would **not** have benefited from a simultaneous chapter openings. Still, if it turns out to be the case that  $p > p^*$ , that is if Turkey can persuade a sufficient number EU member states that she can adjust to the EU standards relatively easily, and that she is not that different, or that her membership is worth the costs that may come with it, then Turkey can benefit from the current design by shifting some of the burden of adjustment for the difficult chapters to the EU by demanding transitional arrangements for those chapters.

Our results support Koremenos et al.'s (2001) rational institution design conjecture that restrictive membership increases with uncertainty about preferences. Koremenos et al. argue that "Membership enables states to learn about each others' preferences if the membership mechanism can distinguish cooperators from noncooperators...Effective membership rules create a separating equilibrium where only those who share certain characteristics will bear the costs necessary to be included in an equilibrium." We have shown that when the EU is certain about the type of the candidate country it is indifferent amongst alternative designs, but once uncertainty is introduced she prefers to conduct chapter-by-chapter negotiations rather than negotiating all chapters simultaneously, to gather more information about the candidate. This in a sense tightens membership requirements as it takes away the candidate's opportunity to misrepresent its type.

Our model also provides a detailed framework for Plumper et al.'s (2005) argument that in order to gain the necessary information about the distribution of policy preferences in applicant countries, current EU countries observe how candidate states fare in closing the chapters of the *acquis* during accession negotiations. Our model explains why and how this observation takes place.

Note that our model can be adapted to study accession to other international institutions with membership conditionality like the NATO, or the WTO. As Koremenos et al. argue, these organizations also use their membership conditionality as signals to dissolve their uncertainty about the preferences of prospective members.

As a final word we should mention an implicit assumption that goes with our analysis, namely that the chapters are independent of each other. In other words, we have assumed so far that the costs associated with closing a chapter are fixed and independent of previously closed chapters. One can always argue that closing of each chapter creates positive spillovers for subsequent chapters. As a country follows the path of transformation it becomes more and more easy to harmonize the remaining issues. Such a dependency among chapters provides a good explanation for why the EU insists on starting the accession negotiations with relatively easy chapters even though starting with the difficult chapters would be better in terms of resolving possible uncertainties the EU may have about the candidate. The dependency argument can be incorporated in our model through relating the costs of chapters to the number and difficulty of previously closed ones. But that is an extension we will leave for a future study.

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## 5 APPENDIX

In this section we will find the pure strategy sequential equilibria of the simultaneous chapters game, the chapter-by-chapter game that starts with the easy chapter, and the chapter-by-chapter game that starts with the difficult chapter respectively. The analysis hence conducted constitutes the proofs of the Propositions in the previous sections.

## 5.1 Equilibrium Analysis

### 5.1.1 The Simultaneous Chapters Game

The equilibrium analysis of the simultaneous-chapters game constitutes the proofs of Proposition 1,2,3, and 8. We will start by applying backward induction to the simultaneous chapters game depicted in *Figure 1*. Since both  $u - \delta(lc) - c < 0$  and  $u - \delta(hc) - c < 0$ , we know that the Candidate will never back down when rejected by the EU. Knowing this the EU will (i) *accept* at information set 1 if  $q > \bar{p} = \frac{\delta(hc)-v}{\delta(hc)-\delta(lc)}$ , and *reject* if  $q < \bar{p}$ , (ii) *accept* at information set 2 for all  $t \in [0, 1]$  since  $(v - \delta_1(lc)) > 0$  and  $(v - \delta_1(hc)) > 0$ , (iii) *accept* at information set 3 if  $r > p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ , and *reject* if  $r < p^*$ , where  $q$ ,  $t$ , and  $r$  stand for the probability the EU assigns in her information set 1, 2, and 3 respectively, to the Candidate being a low-cost type. We will not be discussing the cases where the EU's beliefs equal critical values. Since we have restricted our attention to pure strategy equilibria such a discussion would not have added any new equilibrium to our results. Moreover, those cases represent a zero measure subset of possible beliefs which further justifies our omission.

**Lemma 11**  $\bar{p} = \frac{\delta(hc)-v}{\delta(hc)-\delta(lc)} > p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ .

**Proof.** First note that  $\frac{\delta_1(hc)}{\delta_1(hc)-\delta_1(lc)} > 1 > \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$ . Also,  $\delta_1(hc) > 0$ ,  $\delta_1(hc) - \delta_1(lc) > 0$ ,  $\delta_2(hc) - v > 0$ , and  $\delta_2(hc) - \delta_2(lc) > 0$ . Thus,  $\delta_1(hc)[\delta_2(hc) - \delta_2(lc)] > [\delta_1(hc) - \delta_1(lc)][\delta_2(hc) - v]$ . Adding  $[\delta_2(hc) - v][\delta_2(hc) - \delta_2(lc)]$  to both sides, we obtain

$$[\delta_1(hc) + \delta_2(hc) - v][\delta_2(hc) - \delta_2(lc)] > [\delta_1(hc) - \delta_1(lc) + \delta_2(hc) - \delta_2(lc)][\delta_2(hc) - v].$$

This implies  $\bar{p} = \frac{\delta_1(hc)+\delta_2(hc)-v}{\delta_1(hc)+\delta_2(hc)-\delta_1(lc)-\delta_2(lc)} > \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)} = p^*$ . ■

Given that the EU will accept transitional measures for Chapter 1, adopting both chapters as they are (*ADB*) becomes suboptimal for the candidate. Now we will go through the possible pure strategies of the EU and the Candidate's best responses to those strategies to find the sequential equilibria of this game.

**Lemma 12** *The strategy profile  $\sigma = (\sigma_{EU}, \sigma_{CD(hc)}, \sigma_{CD(lc)})$ , where*

$$\begin{aligned} \sigma_{EU} &= \{\text{accept all demands}\} \\ \sigma_{CD(hc)} &= \sigma_{CD(lc)} = \{\text{demand transitional measures for both chapters, exit if any demand is rejected}\} \end{aligned}$$

with the original probability distribution such that  $p > \bar{p} = \frac{\delta(hc)-v}{\delta(hc)-\delta(lc)}$ , and the EU's belief structure as  $q = p$  and  $r > p^* = \frac{\delta_2(hc)-v}{\delta_2(hc)-\delta_2(lc)}$  is a pure strategy sequential equilibrium. The equilibrium outcome is for the EU to assume all the costs of adjustment. The Candidate joins the EU with no costs. She receives  $u$ , whereas the EU receives  $[p(v - \delta(lc)) + (1 - p)(v - \delta(hc))]$ .

**Proof.** For the EU to accept demands for transitional measures at all her information sets, it must be that  $q > \bar{p}$  and  $r > p^*$ . Given that the EU accepts all demands, the best response of the Candidate is to demand transitional measures for both chapters regardless of her type which then implies that  $q = p$ . So, for  $p > \bar{p}$ , this is a pure strategy sequential equilibrium. ■

Note that this equilibrium is valid when  $u - \delta_2(hc) > 0$  as well. Since  $u > u - \delta_1(hc) > u - \delta_2(hc)$  and  $u > u - \delta_1(lc) > u - \delta_2(lc)$ , given that the EU accept such demands the Candidate prefers to demand transitional measures for both chapters regardless of her type and her ability to adopt the chapters in their entirety.

**Lemma 13** *The strategy profile  $\sigma = (\sigma_{EU}, \sigma_{CD(hc)}, \sigma_{CD(lc)})$ , where*

$$\sigma_{EU} = \begin{cases} \text{accept "transitional measures for both chapters" demands,} \\ \text{accept "transitional measures for Chapter 1 only" demands,} \\ \text{reject "transitional measures for Chapter 2 only" demands.} \end{cases}$$

$$\sigma_{CD(hc)} = \sigma_{CD(lc)} = \{\text{demand transitional measures for both chapters, exit if demand is rejected}\}$$

with the original probability distribution such that  $p > \bar{p}$ , and the EU's belief structure as  $q = p$  and  $r < p^*$  is a pure strategy sequential equilibrium. The equilibrium outcome is for the EU to assume all the costs of adjustment. The Candidate joins the EU with no cost. She receives  $u$ , whereas the EU receives  $[p(v - \delta(lc)) + (1 - p)(v - \delta(hc))]$ .

**Proof.** Under this strategy the EU accepts at information sets 1 and 2 and rejects at information set 3, which implies that  $q > \bar{p}$  and  $r < p^*$ . The best response for the Candidate is again to demand transitional measures for both chapters which implies  $q = p$ . So, for  $p > \bar{p}$ , this is a pure strategy sequential equilibrium. ■

Note that this equilibrium is valid when  $u - \delta_2(hc) > 0$  as well. Since  $u > u - \delta_1(hc)$  and  $u > u - \delta_1(lc)$ , given that the EU accept such demands the Candidate prefers to demand transitional measures for both chapters regardless of her type and her ability to adopt the chapters in their entirety.

**Lemma 14** *The strategy profile  $\sigma = (\sigma_{EU}, \sigma_{CD(hc)}, \sigma_{CD(lc)})$  where*

$$\sigma_{EU} = \begin{cases} \text{reject "transitional measures for both chapters" demands,} \\ \text{accept "transitional measures for Chapter 1 only" demands,} \\ \text{accept "transitional measures for Chapter 2 only" demands.} \end{cases}$$

$$\sigma_{CD(hc)} = \sigma_{CD(lc)} = \begin{cases} \text{adopt Chapter 1 in its entirety and demand transitional measures for Chapter 2,} \\ \text{exit if any demand is rejected.} \end{cases}$$

with the original probability distribution such that  $\bar{p} > p > p^*$ , and the EU's belief structure as  $q < \bar{p}$  and  $r > p^*$  is a pure strategy sequential equilibrium. The equilibrium outcome is for the EU to assume the costs of adjustment for the more costly chapter, whereas the Candidate assumes the costs for the less costly chapter, i.e., the Candidate receives  $u - \delta_1(hc)$  if she is a high-cost type and  $u - \delta_1(lc)$  if she is a low-cost type, and the EU receives  $[p(v - \delta_2(lc)) + (1 - p)(v - \delta_2(hc))]$ .

**Proof.** Under this strategy the EU rejects demands at information set 1 and accepts at information sets 2 and 3. Given the EU's strategy, the best response for both types of the Candidate is to adopt the easy chapter in its entirety and demand transitional measures for the difficult one ( $Ad_1Dt_2$ ). Given that both types choose  $Ad_1Dt_2$ , the EU's belief at the third information set should be  $r = p$  and since we have already assumed that  $p > p^*$  the EU's choice of action is consistent with its belief which is consistent with the play of the game. ■

Note that this equilibrium is valid when  $u - \delta_2(hc) > 0$  as well. Since  $u - \delta_1(hc) > u - \delta_2(hc)$  and  $u - \delta_1(lc) > u - \delta_2(lc)$ , given that the EU accept such demands the Candidate prefers to demand transitional measures for the difficult chapter regardless of her type and her ability to adopt the chapters in their entirety.

**Lemma 15** *The strategy profile  $\sigma = (\sigma_{EU}, \sigma_{CD(hc)}, \sigma_{CD(lc)})$  where*

$$\sigma_{EU} = \begin{cases} \text{reject "transitional measures for both chapters" demands,} \\ \text{accept "transitional measures for Chapter 1 only" demands,} \\ \text{reject "transitional measures for Chapter 2 only" demands.} \end{cases}$$

$$\sigma_{CD(hc)} = \begin{cases} \text{adopt Chapter 1 in its entirety and demand transitional measures for Chapter 2,} \\ \text{exit if any demand is rejected.} \end{cases}$$

$$\sigma_{CD(lc)} = \begin{cases} \text{adopt Chapter 2 in its entirety and demand transitional measures in Chapter 1,} \\ \text{exit if any demand is rejected.} \end{cases}$$

with the original probability distribution such that  $p \in (0, 1)$ , and the EU's belief structure as  $q < \bar{p}$  and  $r < p^*$  is a pure strategy sequential equilibrium. So in the equilibrium outcome, the Candidate joins the EU if she is a low-cost type. She assumes the cost for the more costly Chapter 2 and gets support from the EU to provisionally close the less costly Chapter 1. Whereas a high-cost type candidate leaves the table after her demand for transitional measures for Chapter 2 gets rejected by the EU. The Candidate receives  $u - \delta_2(lc)$  if she is a low-cost type and 0 if she is a high-cost type. The EU receives  $[p(v - \delta_1(lc))]$ .

**Proof.** In order for the EU's above strategy to be consistent with her beliefs it must be that  $q < \bar{p}$  and  $r < p^*$ . Given the EU's strategy, a low-cost type candidate prefers to adopt the difficult chapter in its entirety and ask transitional measures only for the easy chapter since  $u - \delta_2(lc) > 0$ . But since  $u - \delta_2(hc) < 0$ , a high-cost candidate prefers to demand transitional measures for the difficult Chapter 2 even though she knows her demand will get rejected and she will then have to exit the game. Since only a high-cost candidate demands transitional measures in Chapter 2 under these conditions, when faced with such a demand the EU will know she is facing a high-cost type for sure which implies  $r = 0$  and  $t = p$ . Note that  $p^* > 0 = r$  and the EU's decision to accept in her information set 2 is valid for all  $t \in (0, 1)$ . Moreover information set 1 lies off the equilibrium path so any belief is consistent with the play of the game. Then we can say the EU's beliefs are also consistent with the play of the game. Thus, this is a sequential equilibrium. ■

Note that this equilibrium is **not** valid when  $u - \delta_2(hc) > 0$ . Because then adopting Chapter 1 in its entirety and demanding transitional measures for Chapter 2 becomes the best response to the EU's above strategy for a high-cost candidate as well.

**Lemma 16** *The strategy profile  $\sigma = (\sigma_{EU}, \sigma_{CD(hc)}, \sigma_{CD(lc)})$  where*

$$\sigma_{EU} = \begin{cases} \text{reject "transitional measures for both chapters" demands,} \\ \text{accept "transitional measures for Chapter 1 only" demands,} \\ \text{reject "transitional measures for Chapter 2 only" demands.} \end{cases}$$

$$\sigma_{CD(hc)} = \begin{cases} \text{demand transitional measures for both chapters,} \\ \text{exit if any demand is rejected.} \end{cases}$$

$$\sigma_{CD(lc)} = \begin{cases} \text{adopt Chapter 2 in its entirety and demand transitional measures for Chapter 1,} \\ \text{exit if any demand is rejected.} \end{cases}$$

with the original probability distribution such that  $p \in (0, 1)$ , and the EU's belief structure as  $q < \bar{p}$  and  $r < p^*$  is a pure strategy sequential equilibrium. In the equilibrium outcome, the Candidate joins the EU if she is a low-cost type. She assumes the cost for the more costly chapter and gets support from the EU to provisionally close the less costly one. Whereas a high-cost type candidate leaves the table after her demand for transitional measures for both chapters gets rejected by the EU. The Candidate receives  $u - \delta_2(lc)$  if she is a low-cost type and 0 if she is a high-cost type. The EU receives  $[p(v - \delta_1(lc))]$ .

**Proof.** This equilibrium is similar to the preceding one. The proof is also very similar except that this time, given the strategies of different candidate types, it must that  $q = 0$  and  $t = p$ . Note that information set 3 lies off the equilibrium path so any belief will be consistent with the play of the game including  $r < p^*$ . Thus the EU's strategy is consistent with her beliefs which are consistent with the play of the game. ■

Note that this equilibrium is **not** valid when  $u - \delta_2(hc) > 0$ . Because then adopting Chapter 1 in its entirety and demanding transitional measures for Chapter 2 becomes the best response to the EU's above strategy for a high-cost candidate as well.

**Lemma 17** When  $u - \delta_2(hc) > 0$ , the strategy profile  $\sigma = (\sigma_{EU}, \sigma_{CD(hc)}, \sigma_{CD(lc)})$  where

$$\sigma_{EU} = \begin{cases} \text{reject "transitional measures for both chapters" demands,} \\ \text{accept "transitional measures for Chapter 1 only" demands,} \\ \text{reject "transitional measures for Chapter 2 only" demands.} \end{cases}$$

$$\sigma_{CD(hc)} = \sigma_{CD(lc)} = \begin{cases} \text{adopt Chapter 2 in its entirety and demand transitional measures for Chapter 1,} \\ \text{exit if any demand is rejected.} \end{cases}$$

with the original probability distribution such that  $p \in (0, 1)$ , and the EU's belief structure as  $q < \bar{p}$  and  $r < p^*$  is a pure strategy sequential equilibrium. In the equilibrium outcome, the Candidate joins the EU. She assumes the costs of adjustment for the more costly chapter and gets support from the EU to provisionally close the less costly one. The Candidate receives  $u - \delta_2(lc)$  if she is a low-cost type and  $u - \delta_2(hc)$  if she is a high-cost type. The EU receives  $[p(v - \delta_1(lc)) + (1 - p)(v - \delta_1(hc))]$ .

**Proof.** Given that the EU rejects all demands about Chapter 2 and accepts those about Chapter 1, the best response of the Candidate is now to adopt Chapter 2 in its entirety and demand transitional measures for Chapter 1 since  $u - \delta_2(lc) > 0$  and  $u - \delta_2(hc) > 0$ . Note that the change

in the assumption about the cost benefit relations of the Candidate does not affect the decision rules of the EU. So, the EU still accepts all demands about Chapter 1 no matter who she thinks she is dealing with. Similarly, the EU rejects at information set 1 if  $q < \bar{p}$  and rejects at information set 3 if  $r < p^*$ . Given both type of candidates adopt Chapter 2 in its entirety and demand transitional measures for Chapter 1, the EU's belief should be  $t = p$  at her information set 2. Since her decision rule is to accept at that information set for all  $t \in (0, 1)$ , her strategy is consistent with her belief which is consistent with the play of the game. Thus this is a sequential equilibrium. ■

### 5.1.2 The Chapter-by-Chapter Game, Easy Chapter Goes First

The equilibrium analysis of the chapter-by-chapter game that starts with the easy chapter constitutes the proofs of Proposition 4,5,6, and 9. Let us again start with backward induction. Starting from the bottom left in Figure 2; (i) since  $(u - \delta_2(hc) - c) < 0$ , a high cost candidate exits at her decision node after her demand for transitional measures for Chapter 2 is rejected; (ii) since  $(u - \delta_1(lc) - 2c) < 0$ , a low-cost candidate exits if her demands for transitional measures for Chapter 1 and Chapter 2 are both rejected consecutively; (iii) since  $(u - \delta_2(lc) - c) > 0$ , a low-cost candidate backsdown if the EU accepts her demands for transitional measures in Chapter 1 but rejects them for Chapter 2. On the top, since  $(u - \delta_1(hc) - c) < 0$  and  $(u - \delta_1(lc) - c) < 0$ , both types exit if her demand for transitional measures for Chapter 2 is rejected after she adopts Chapter 1 in its entirety. Knowing these the EU then, (i) receives  $[q(v - \delta_2(lc)) + (1 - q)(v - \delta_2(hc))]$  if she accepts at information set 1 and 0 if she rejects, which implies that the EU accepts at information set 1 if  $q > p^* = \frac{\delta_2(hc) - v}{\delta_2(hc) - \delta_2(lc)}$ ; (ii) receives  $[t(v - \delta_1(lc)) + (1 - t)(v - \delta_1(hc))]$  if she accepts at information set 3 and  $t(v - \delta_1(lc))$  if she rejects, which implies that the EU rejects at information set 3 for all  $t \in [0, 1]$ ; (iii) receives  $[z(v - \delta_2(lc)) + (1 - z)(v - \delta_2(hc))]$  if she accepts at information set 4 and 0 if she rejects, which implies that the EU accepts at information set 4 if  $z > p^* = \frac{\delta_2(hc) - v}{\delta_2(hc) - \delta_2(lc)}$ .

Knowing that the EU will reject if the third information set is reached, a low-cost candidate agrees to adopt Chapter 2 in its entirety if her demand for Chapter 1 gets accepted since  $u - \delta_2(lc) > u - \delta_2(lc) - c$ . A high-cost candidate however, since  $u - \delta_2(hc) < 0$ , even after her demand for transitional measures for Chapter 1 gets accepted, insists on demanding transitional measures for Chapter 2 although she knows that her demand will get rejected and that she will have to leave the table. With this knowledge the EU then accepts demands about Chapter 1 regardless of her belief as the expected payoff from accepting, which is  $r(v - \delta_1(lc))$  is greater than the expected

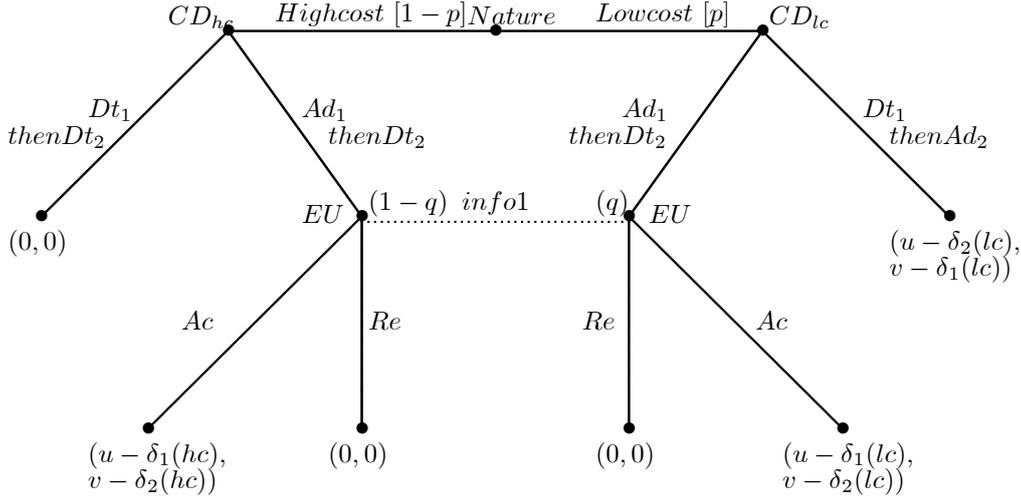


Figure 4: The chapter-by-chapter game that starts with the easy chapter after dominated actions are eliminated under the assumption that  $u - \delta_2(hc) < 0$ .

payoff from rejecting, which is 0. So at the second information set the EU accepts for all  $r \in [0, 1]$ . With the EU accepting transitional measures for Chapter 1, adopting both chapters consecutively becomes suboptimal for both types. Drawing the game tree again in light of the information we have gathered through backward induction we get the reduced game depicted in Figure.4;

To simplify our proofs we will work with this reduced game to find the equilibria of the original version.

Now suppose the EU accepts at information set 1 which means  $q > p^* = \frac{\delta_2(hc) - v}{\delta_2(hc) - \delta_2(lc)}$ ;

Given that the EU accepts at information set 1, and that  $u - \delta_1(hc) > 0$  and  $u - \delta_1(lc) > u - \delta_2(lc)$ , adopting Chapter 1 in its entirety and demanding transitional measures for Chapter 2 is the best response for both types, which then implies  $q = p$ . If  $p > p^*$  then the EU's choice of action is also justified. Thus, this is a sequential equilibrium when  $p > p^*$ .

Now suppose the EU rejects at information set 1 which means  $q < p^* = \frac{\delta_2(hc) - v}{\delta_2(hc) - \delta_2(lc)}$ ;

Given the EU rejects at information set 1, the best response of a low-cost type candidate is to demand support for the easy chapter and then adopt the difficult chapter in its entirety since  $u - \delta_2(lc) > 0$ . But a high-cost type candidate does not have the luxury of adopting Chapter 2 in its entirety since  $u - \delta_2(hc) < 0$ . She is left with no choice but to leave the table. There are two paths for her to leave the table. She may adopt Chapter 1 in its entirety and then demand transitional measures for Chapter 2. In which case, given the best response of a low-cost type candidate, the EU will know for sure that she is facing a high-cost type, ( $q = 0$ ), and thus her decision rule to reject will be justified. Or the high-cost type Candidate may demand transitional measures for both chapters consecutively, in which case, given the best response of a low-cost type candidate, the EU

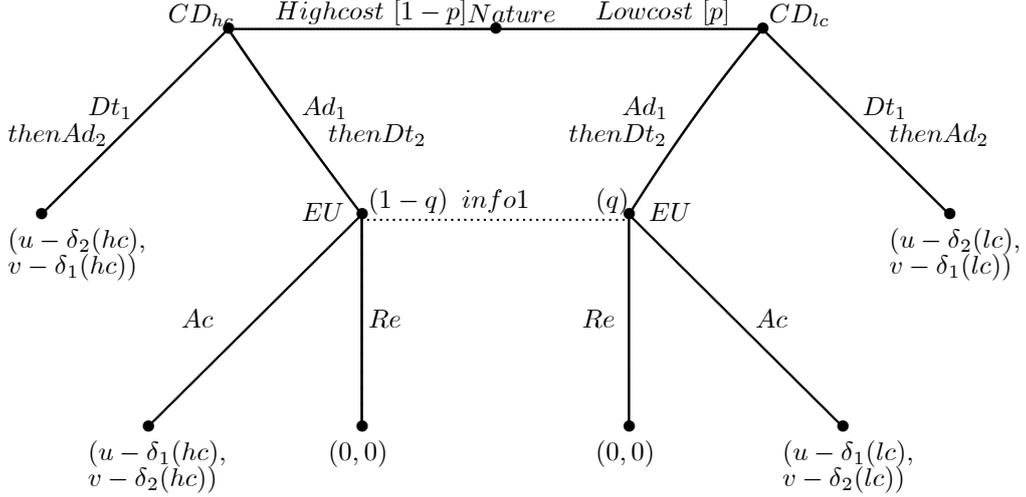


Figure 5: The chapter-by-chapter game that starts with the easy chapter after dominated actions are eliminated under the assumption that  $u - \delta_2(hc) > 0$ .

will again know for sure that she is facing a high-cost type candidate and will reject her demand for transitional measures in Chapter 2. Since information set 1 will be off the equilibrium path, the EU's belief  $q$  will be justified, so will be her decision rule. In sum, when  $p < p^*$  the chapter-by-chapter game that starts with the easy chapter has two pure strategy sequential equilibria in both of which the Candidate joins the EU only if she is a low-cost type. She gets support with the easy chapter and adopts the difficult chapter in its entirety. A high-cost candidate leaves the table.

Since we have covered all possible actions of the EU, we can conclude that the chapter-by-chapter game that starts with the easy chapter has only three pure strategy sequential equilibria in none of which the EU incurs all the costs.

We have obtained these equilibria under the assumption that  $u - \delta_2(hc) < 0$ . For  $u - \delta_2(hc) > 0$ , a high-cost type candidate's best response becomes to adopt Chapter 2 in its entirety if her demand for transitional measures for Chapter 1 is accepted. This does not create any difference in the EU's decision rules in the any of the information sets. Again we can draw the reduced game as in *Figure 5*;

Let the EU accept at information set 1 which implies that  $q > p^* = \frac{\delta_2(hc) - v}{\delta_2(hc) - \delta_2(lc)}$ ;

We have the same equilibrium we have above for  $u - \delta_2(hc) < 0$  and  $p > p^*$  and the proof is the same.

Now, let the EU reject at information set 1 which implies that  $q < p^* = \frac{\delta_2(hc) - v}{\delta_2(hc) - \delta_2(lc)}$ ;

Given that the EU rejects at information set 1 and that  $u - \delta_2(hc) > 0$  and  $u - \delta_2(lc) > 0$ , the best response for both types is to demand transitional measures for Chapter 1 and adopt Chapter 2 in its entirety which does not contradict the EU's belief at information set 1 that  $q < p^*$  as that

information set lies off the equilibrium path.

Since we have covered all possible actions of the EU, we can conclude that the chapter-by-chapter game that starts with the easy chapter has two pure strategy sequential equilibria when  $u - \delta_2(hc) < 0$ .

### 5.1.3 The Chapter-by-Chapter Game, Difficult Chapter Goes First

The equilibrium analysis of the chapter-by-chapter game that starts with the difficult chapter constitutes the proofs of Proposition 7 and Proposition 10. Let us start with backward induction. Starting from the bottom left in Figure 3; (i) since  $u - \delta_1(hc) - c > 0$ , a high cost candidate backsdown if the EU accepts her demand for transitional measures for Chapter 2 and then rejects a consecutive demand for transitional measures for Chapter 1; (ii) since  $(u - \delta(hc) - 2c) < 0$ , a high-cost candidate exits if her demands for transitional measures for Chapter 1 and Chapter 2 are both rejected consecutively; (iii) since  $(u - \delta(lc) - 2c) < 0$ , a low-cost candidate exits if the EU rejects her demands for transitional measures for Chapter 2 and Chapter 1 consecutively; (iv) since  $u - \delta_1(lc) - c > 0$ , a low cost candidate backsdown if the EU accepts her demand for transitional measures for Chapter 2 and then rejects a consecutive demand for Chapter 1. On the top (i) since  $(u - \delta(lc) - c) < 0$  and  $(u - \delta(hc) - c) < 0$ , both types exit if her demand for transitional measures for Chapter 1 is rejected after she adopts Chapter 2 in its entirety. Knowing so the EU then, (i) receives  $[q(v - \delta_1(lc)) + (1 - q)(v - \delta_1(hc))]$  if she accepts at information set 1 and 0 if she rejects, which implies that the EU accepts at information set 1 for all  $q \in [0, 1]$ ; (ii) receives  $[t(v - \delta(lc)) + (1 - t)(v - \delta(hc))]$  if she accepts at information set 3 and  $[t(v - \delta_2(lc)) + (1 - t)(v - \delta_2(hc))]$  if she rejects, which implies that the EU rejects at information set 3 for all  $t \in [0, 1]$ ; (iii) receives  $[z(v - \delta_1(lc)) + (1 - z)(v - \delta_1(hc))]$  if she accepts at information set 4 and 0 if she rejects, which implies that the EU accepts at information set 4 for all  $z \in [0, 1]$ . Knowing that the EU will reject at information set 3, and accept at information set 4; (i) the Candidate, adopts Chapter 1 in its entirety if her demand for transitional measures for Chapter 2 gets accepted first, regardless of her type since  $u - \delta_1(hc) > u - \delta_1(hc) - c$  and  $u - \delta_1(lc) > u - \delta_1(lc) - c$ ; (ii) since  $u - \delta_2(hc) - c > u - \delta(hc) - c$  and  $u - \delta_2(lc) - c > u - \delta(lc) - c$ , both types demand transitional measures for Chapter 1 after backing down from a demand for transitional measures for Chapter 2; (iii) since  $0 > u - \delta_2(hc) - c$ , a high-cost candidate exits the game if her demand for transitional measures for Chapter 2 gets rejected; (iv) since  $u - \delta_2(lc) - c > 0$ , a low-cost type candidate backsdown if her demand for

transitional measures for Chapter 2 gets rejected. Anticipating these moves, then the EU rejects at information set 2 for all  $r \in [0, 1]$  since she receives  $[r(v - \delta_2(lc)) + (1 - r)(v - \delta_2(hc))]$  by accepting and  $v - \delta_1(lc)$  by rejecting. Knowing that the EU will reject demands at information set 2, a low-cost type candidate adopts Chapter 2 in its entirety and demands transitional measures for Chapter 1 since  $u - \delta_2(lc) > u - \delta_2(lc) - c$ . Whereas, a high-cost candidate insists on asking support with Chapter 2 as  $u - \delta_2(hc) < 0$ . She gets rejected and exits the game. Thus backward induction gives us a unique subgame perfect equilibrium. Let us now consider the case where  $u - \delta_2(hc) > 0$ . Backward induction will lead us through the same paths up until the first move of the Candidate. But this time a high-cost candidate will choose to accept Chapter 2 in its entirety and then will demand support with Chapter 1 just like a low-cost type one, since she gets a positive payoff now from becoming a member even after handling all the required reforms in the difficult chapter. Thus, with  $u - \delta_2(hc) > 0$ , the chapter-by-chapter game that starts with the difficult chapter gives a unique subgame perfect equilibrium, under which the Candidate adopts Chapter 2 in its entirety and demands support with Chapter 1 regardless of her type. The EU accepts this demand.