THE POLITICAL ECONOMY OF ORGANIZATIONAL ENLARGEMENT.
FINDING THE LINK BETWEEN INSIDER AND OUTSIDER IN THE
EUROPEAN UNION.
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Scholars often address the process of enlargement as one-sided argument. This work provides a general theory of organizational expansion by including strategies and actions of both, applicant states and members of international organizations. It is argued that dependent on the domestic characteristics of states an organization strategically implement a set of conditions to avoid the application and admission of states, which are either not able to conform with the rules or not willing to pay the costs of membership. This process incorporates two stages. I test this theory by utilizing a Heckman-Probit-Selection Model, which accounts for this two-stage procedure. The results confirm that conditions are important to avoid costs in the process of expansion.
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Shakespeare, Twelfth Night
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CHAPTER 1

INTRODUCTION

“Es wächst zusammen, was zusammen gehört.”¹ Often, this quote is used when describing the expansion of the European Union to Eastern Europe. In contrast to this positive sounding message regarding expansion, a recent debate between France and Germany about the reform of the “Common European Agricultural Policies” seems to take place on the shoulders of the admission candidates. Whereas France, as the main beneficiary of the current agricultural policy argues against constraints on the agricultural subsidies budget, Germany, as the main net contributor, aspires for a revision of these policies to decrease the amount of subsidies. German politicians even suggested to discriminating against new members regarding the benefits the European Union provides.

This implies that transformation states willing to join the European Union must not only accept the “Acquis Communautaire” (and therefore adopt adjustments in thirty policy fields to the will and the conceptions of the old members), but new members also have restricted access to European farm subsidies, restricted access to structural funds and furthermore face discrimination regarding the inner-organizational decision-making rules.

¹ Willie Brandt, former chancellor of the Federal Republic of Germany, used this quote originally to describe the German reunification process. In English translation: “What belongs together grows together”.
The World Trade Organization (WTO) pursues similar policies. In their application, China had to accept the implementation of certain domestic reforms, determined in bilateral negotiations between China and the USA, Japan, the European Union and other interested WTO members.

In general, international organizations often attach the accommodation of new members to a multiplicity of conditions and editions. Then, the question arises as to how we are able to understand why international organizations have incentives to require the acceptance of certain conditions and reforms. Does an underlying logic or strategy exist?

The ultimate goal of this work is to explain and predict why members implement conditions and the incentive to require screening devices for applicant countries. Furthermore, what are the effects of expansion on the chosen admission strategies of member states in order to provide a basis for the efficient and successful integration of states into international organizations? This work will therefore investigate the theoretical links between organizational expansion and conditional phenomena.

With an explanation of conditional phenomena I will ultimately capture one aspect of international political economy, namely how international policies constrain actions on the domestic level and how domestic policies affect decisions in the international arena. If we want to know why organizations connect the admission of states with conditions, we find part of the answer in the domestic system of these outsider states. At that point, this seemingly trivial question becomes increasingly complex. Traditional political science failed to stress this important issue, instead arguing that conditions primarily serve to filter out non-beneficial states from admission. On the contrary, international organizations often admit states, whose performance would not expect immediate
benefits for an organization. Regarding China’s accession to the WTO, for example, member states were split between hardliners who favoured a policy that would require China to realize all reforms before an admission would be possible. Another group considered a temporary membership favourable. This group would give full membership to China as soon as it implemented all obligations. Other reasons besides these of economic benefits include norms and the internalization of negative externalities and spillovers.

Furthermore, international organizations are part of a globalized world – states will have certain incentives to be integrated within these societies to guarantee their survival in the system. Much depends on the expectations of benefits on both sides. Thus, supply and demand of integration must be connected in order to achieve a complete explanation of integration issues. It is not sufficient to focus on the impact of expansion on outsider states, but rather on the combination of both sides.

Then, scholars have to ask different questions. How does the desire to be part of an organization affect the domestic level? How does this influence currently integrated states and to what extent are decisions in the international arena based on characteristics of the domestic level? In this case, how are members able to utilize features of the domestic system of candidate countries to ensure organizational success after the integration of new members? And furthermore, how do these decisions affect the domestic level once more?

The European Union, as an example, has many reasons to incorporate transition countries within a European framework. However, it has to find a strategy to admit states that will not undermine the success of the organization or even jeopardize the survival of it in the future. On the other hand, transition countries understand the benefits arising
with a membership in the European Union, but not every country will apply for a membership. Furthermore, the applicant countries face different challenges and chances of being admitted. Political Science is only able to explain these processes by regarding both sides of the coin, outsiders and insiders, and all levels, domestic, international and supranational.²

The central argument states that international organizations have the incentive to designate a conditional accommodation of new members, if the old members face asymmetric information. This suggests that members of an organization do not have full information about certain characteristics of outsider states and thus, they are confronted with uncertainty regarding the benefits and costs of an expansion.

Conditions serve to avoid negative externalities by filtering out a certain set of states for application. A second strategy is the requirement of screening devices to separate states which have already applied for membership. Both strategies are partly derived from looking at characteristics of the outsider states and partly inherent within the organization itself. Therefore, the domestic and international level are mutually influencing each other.

Essentially, three questions are of importance. First, on which conditions does the utility of a membership in an international organization depend? How do new members influence the individual and aggregated utility in a political integration area? Finally, how do these issues affect member states’ strategies? Examining these questions will lead to an answer of the ultimate research object – an explanation of why organizations implement conditional admission processes.

² Outsider are non-member states, insider are member states of an international organization.
To answer these questions, the paper derives a game-theoretical approach. The underlying assumptions are based on club good theory. Whereas it is assumed that states bargain over the conditions under which an admission is successful, this approach will also utilize features of the domestic arena to derive appropriate explanations. Scientific work in this field has been almost always either descriptive in nature only or formal and highly theoretical. This work, in contrast, attempts to filter out the theoretical factors for the conditional membership and to transform the theoretical and formal implications into a set of testable hypotheses.

The objective of the first part is to outline the most important arguments in this field, covering the classic ideas and trends in recent work. The theory is separated into several parts. The first section analyzes the integration utilities of international organizations. In a second section, the impact of expansion on this integration utility is examined. The next section develops the two strategic steps organizations choose in the admission process. From these implications we derive the hypotheses.

Whereas a general approach to organizational expansion is developed in the theoretical part, the empirical section contains a statistical analysis of the enlargement process of the European Union. It follows a two-stage procedure, which incorporates the likelihood of an application in the first stage and the likelihood of admission in the second. To appropriately account for this characteristic, a Heckman-Probit Selection model is utilized. An in-depth discussion of the results is included giving some inferences and suggestions for future research in the final chapter of this work.
CHAPTER 2
LITERATURE REVIEW

Within the field of political science, the attempt to develop a testable and internally as well as externally valid approach that explains the incentive structure for organizational members to implement admission criteria for prospective new members is a step into relatively unobserved grounds. Therefore, this literature review has several objectives. First, it provides an overview over the basic works in this field. Second, it attempts at giving a thorough critique of the existent literature. Finally, an overview of the literature that combines existent political science approaches with the club good theory and the game theoretical approach is provided. This serves as the basis for the derivation of an appropriate theory of the strategies within the expansion process of an international organization.

Basic Theories

To understand the different approaches to expansion, we first have to achieve a basic understanding of the competing theories existing in this field. Within political science, early works of integration issues mostly derived explanations of international integration from approaches such as functionalism or neo-functionalism (Haas 1958; Mitrany 1966).

The functionalistic approach derives its implications from basic human needs. Institutions, which are created, perform the functions of serving these basic needs. Functionalism manifested itself as criticism of traditional state-centrist approaches by
presenting itself to be more "sectoralistic" in principle. Secoralistic in this context means a focus on single sectors in the economy without referring back to the state level. Functionalists in particular criticized political integration leading basically to a renewing of state characteristics on the international level.

Neo-functionalism is based on the functionalist approach and assumes that economic integration will ultimately lead to political integration caused by spillovers. In contrast to functionalist approaches which neglected regional integration, this approach was neither unable to explain nor unwilling to accept forms of regional integration. Integration in a sector leads to pressures for other sectors to regionally integrate. This sector-to-sector pressure causes spillovers. Interest groups, which benefited from this cooperation, then, would lobby the government towards more integration. This increases the domestic support for international integration.

These approaches, however, came increasingly under critique and were replaced by other paradigms. Functionalism is criticized for four reasons. First, the approach requires alterations in the behavioural logic of the market. Secondly, it rests on unreasonable assumptions about humans to be able to move in rational directions. Thirdly, it has almost no predictive power (Haas 1975). Finally, the approach suffers from a lack of scientific rigour (Thompson 1980).

Neo-functionalism, however, was challenged due to the re-emergence of nationalism in the international system. One example is the “empty-chair policy” pursued by Charles de Gaulle, president of the French Republic in the 1960s. Scholars started questioning the ability of neo-functionalism to present itself as a theory. Rather, it was characterized as some sort of pre-theory, suffering especially from a lack of
transferability to non-European cases and a dependent variable problem. Political scientists developed different approaches, which incorporated more state-centrist views. One example of these competing approaches is intergovernmentalism.

Intergovernmentalism, as an approach to integration, basically states that integration appears as the result of bargaining between different head of states (see for example Moravcsik 1991; Taylor 1982).

The most crucial distinction to neo-functionalism lies in the focus of these approaches. Functionalism and neo-functionalism neglect the importance of national executives and refer to the supranational character of international organizations, such as the European Commission. Intergovernmentalists, on the other hand, concentrate on international politics, and point to the importance of interests and the predominance of domestic actors.

The intergovernmentalist approach is basically criticized because of its inability to appropriately account for policy preferences and the power of different government bodies on the international level (Garrett and Tsebelis 1996). This critique seems to be reasonable, although one has to account for the two different theoretical streams of intergovernmentalism. While the realist approach concentrates on negotiations between states and ignores domestic preferences, neo-liberal intergovernmentalists developed two-level games including preferences on the domestic level and state bargaining on the international level (Moravcsik 1993, 1998). Garrett and Tsebelis (1996) claim the need for an approach that does not only include the domestic level and international bargaining, but also accounts for supranationalism by analyzing preference structures within the organizational bodies. In order to present a parsimonious approach to

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3 For a detailed critique of the two approaches, see Rosamond (2000) and Mattli (1999).
integration scholars should allow for the use of the one state, one actor assumption if possible. A caveat for this is to require the additional incorporation of domestic policy processes or of models covering differences in power on the supranational level. Furthermore, an examination of inter-organizational issues should account for preference systems of supranational bodies within the organization. Leaving out preferences and actions of supranational bodies might lead to incomplete and skewed explanations. This is true especially in cases in which these bodies are experiencing increasing power independent from state centric preferences. As an example, while the UN Security Council is considered as a body that presents the preferences of the permanent members, the European Commission is more independent from state centrism and also powerful enough to implement certain policies. Not considering this would possibly lead to faulty inferences.

Economic approaches are differing from political science approaches by focusing on the economic benefits of integration and excluding political explanations. The customs union approach (Viner 1950), for example, examines the success of international unions and argues that this success is basically determined by the elimination of intra-union trade barriers, the rise of external tariffs and low transportation costs between members. The optimal currency area theory (Mundell 1963) focuses on the sufficient creation of currency areas and the theory of fiscal federalism (Casella 1994) concentrates on fiscal policies. However, all these approaches to integration are based on purely economic grounds and thus not able to provide a full explanation of the institutional factors of integration.4

4 See Mattli (1999) for a detailed evaluation.
Case and Comparative Studies

Within the field, the desire to understand political integration or organizational expansion led to very distinct ways of investigations. Most work is based on purely descriptive grounds by examining the process of integration, the rules, and historical processes (Maresceau 2001; Sabelnikov 1996; Feldmann and Razeen 2002; Vermeersch 2002; Brinar and Svetlicic 1999; Fraser 1998). Theoretical foundations are usually nonexistent.

Other research investigates somewhat deeper into these issues and develops certain explanations. Michalopoulos (1998), for example, examines the accession process of the states of the former Soviet Union to the WTO. He summarizes the advantages of integration and problems that caused a delay in the admission process. Furthermore, and along with many other scholars (Daviddi and Ilzkovitz 1997; Smith and Wallace 1994; Langhammer and Lücke 1999; Feldmann and Razeen 2002), he makes certain policy recommendations such as which strategies are dominant for transition countries to successfully join the desired organization or possible reforms of organizational conditions.

Investigating the conditionality of membership in international organizations reveals that most of the literature theoretically concentrates on one organization and focuses on the costs and benefits of organizational expansion for members and in particular for outsiders or applicants (Walker 2001; Gabrisch and Pohl 1999; Coffey 2000; Baldwin and Brunetti 2001; Ross 2002; Anderson 1997; Liu et al. 2001; Martin and Ianchovina 2001; Dees 2001; Yang 1999; Panitchpakdi and Clifford 2002). Conditionality is pre-assumed.
The impact of expansion is assumed to be two-directional. On the one hand, it will affect members of an organization. On the other hand, it has an impact on all states that are outside of the organization, applicants and non-applicants. One example of the first direction is the growing interest in the study of the trade off between European expansion and deepening in terms of how expansion and inner-organizational integration affect each other (Schneider and Aspinwall 2001; Schneider et al. 1995; Moser et al. 2000). These authors provide models of the impact of this two-dimensional integration on individual preferences. One example is the issue of alterations in voting power. This issue is analysed within the field of organizational reforms (Bräuninger et al. 2001; Garrett and Tsebelis 1996) and the expansion of the European Union (Phare 1995; Bueno de Mesquita and Stokman 1994; Schneider and Cederman 1994; Fearon 1993). Regarding the expansion of the European Union, most scholars argue that an increase in membership size endangers the political capacity of an organization because of an increase in actors with veto power trying to enforce their preferred outcomes.

Walker (2001) also studies the European Union and the impact of new members on the organization. He argues that the EU Commission created the conditions as to let the first six applicants in relatively quickly while avoiding a fast entrance of the other five. The argument, however, lacks an underlying theory. The author is incapable of theoretically explaining why these six countries should be prioritized to enter the Union faster than other countries.

In the edited book of Maresceau and Lannon (2001) the strategies of the European Union in the enlargement process is a main theme. Lannon et al. (2001) investigate deeper into conditionality issues. They distinguish between internal and external, positive and negative preconditions, conditions, and incentives. Internal
conditionality refers to conditions within the organization applying to members itself. External conditions are applying to outsiders, whereas the positive approach attempts at encouraging or rewarding a third country and a restrictive or negative approach leads, in the last resort, to a sanction (Lannon et al. 2001: 98). This distinction seems appropriate and helps in criticizing the contradictory nature of conditions. But conditions in this work are also pre-assumed. For solving the discussed problems of conditionality, first, one has to examine the causes for the existence of conditions.

Soverovski (2000) also investigates conditionality, but in a rather descriptive way and with a focus on the European Union. His criticism focuses on uncertainty due to uniformity or ambiguity of language and the lack of a budgetary strategy. Pollet (2001) concentrates on migration pressures from the Mediterranean Central and Eastern Europe on the utility of the European Union.

The inherent problems in these works are obviously seated in their lack of incorporating outsiders into cost and benefit considerations.

Curzon et al. (1999) concentrate on impacts in the other direction, in terms of how applicant and non-applicant states are affected by the enlargement of the European Union. Much work has been done in this field laying out the advantages and problems of an integrated area (Ross 2002; Pridham 2002; Baldwin and Brunetti 2001, Anderson 1997; Inotai 1999). Ross (2002), as one of very few scholars, analyzes the impact on applicant states in employing domestic support models and states that conditions are now more restrictive than in previous enlargement rounds. He fails, however, to give an explanation for this phenomenon. This observation is an important puzzle, which will be solved in the theoretical part of this paper. By developing a theory of why members have certain strategies in the admission process, an explanation of why there was an
incentive for the European Union to implement more restrictive conditions in the recent enlargement process could be derived.

As an example of the combination of both directions China’s accession to the WTO attracted many scholars in the field to write case studies, thus presenting a large body of articles concerning the problems and implications of China’s accession to the WTO (Anderson 1997; Liu et al. 2001; Martin and Ianchovina 2001; Dees 2001; Yang 1999; Panitchpakdi and Clifford 2002). The case of China was one of the first countries incorporated in GTAP models, which simulate the benefits and costs for China and the WTO if China joined the WTO versus remaining out.5 These studies all show the same tendency – China and the WTO would greatly benefit from the admission of China (Anderson 1997; Yang 1999; Jensen 1997). Studies on the European Union utilize similar computable general equilibrium models to examine the effects of expansion on countries (Grether and Muller 2001; Markusen et al. 2001; Baldwin et al. 2001; Francois 2001; Van Nieuwkoop and Müller 2001).

In particular, however, these simulations bear the problem of important differences in the assumptions and thus different outcomes. Based on the rules and processes within the WTO, there is less uncertainty of the economic development in the case of China as a member of the WTO, given that China will fulfil the rules of the WTO. But parallel simulations of the outside options lack reliable information. The crucial information of whether China would underlie a linear growth function or whether China, would develop in a similar manner as an outsider, independent of WTO rules and procedures, is lacking. This means that assumptions about China’s development

5 GTAP refers to “Global Trade Analysis Project” which is involved with the development of a general equilibrium modelling framework.
outside the WTO are based on counterfactual arguments and applications of past developments instead of reliable information. The same criticism holds true for simulations concerning European integration.

Furthermore, the impact of the expansion on both sides is assumed as being purely economical (Gabrisch and Pohl 1999). The impact of expansion on the organization or candidates, however, may be also political. To point out one example, domestic institutions play a crucial role in the ability to fulfil required reforms. Ruta (2002) argues that four factors cause the decision for or against integration: the existence of public or global goods and international spillovers, economic integration, the institutional setting, and international security (see also Balazs 2001). Henderson (2000) also investigates into the different dimensions of enlargement. She focuses in particular on the readiness of applicant candidates and the inner-reform process of the European Union. This seems to provide a better understanding of integration than purely economic approaches. The approach developed in my work combines economic and political factors to explain the admission process.

Overall, all approaches failed in providing a more general theory of expansion. Theories are either missing or based on the examination of one organization and, thus, fail to generate external validity. Furthermore, the bigger picture is missing. Whereas these studies concentrate on single issues in the integration or expansion process, they are not able to put together the puzzle that emerges with the expansion of an organization, namely, as of how we can explain, why an organization given a certain utility faces the incentive to integrate new states, how strategies evolve in the process and why some states will enter while other states stay outside. How do these two directions affect each other? Furthermore, most studies failed to address the problem of
conditionality more explicitly and, thus, are not able to give a more appropriate explanation of the integration process.

Many of the aforementioned case and comparative study approaches attempt to provide policy recommendations. Problems occur because suggestions are based on fixed assumptions about existing conditions rather than on the diverging utilities of outsiders and insiders. This problem arises because many scholars focus on a critique of these conditions rather than on successful strategies for candidate states. This problem can be addressed in three different aspects.

First, single member states have various incentives for the implementation of such barriers, and it is assumed that these conditions are the result of a cost and benefit analysis of the entrance of new members. Whereas scholars often disregard an examination of the ultimate goal of these admission conditions, this research project explicitly asks why organizations implement such requirements. It is argued that an organization uses these reforms as screening devices to avoid the admission of states that might become moral hazards once awarded membership. This implies that old members aim at minimizing eventually arising costs connected with the admission of states, which would be considered as moral hazards. If an organization would not require any conditions, the admission of cheating states would increase and the benefits for each member would decrease.

Second, actors are embedded in the institutional setting. Choices for organizational bodies on the international level are often much more constrained than they are for actors on the domestic level. Criticisms of existing conditions, then, are rather useless, since a change is extremely difficult to achieve. This implication leads to the suggestion of a more sophisticated approach. Such an approach would also
investigate successful strategies that candidates should develop in order to have a chance to enter into an exclusive organization and analyze successful versus failing accession processes.

Finally, with reference to the case of China, inferences drawn upon single case studies usually lack external validity. More rigorous tests of the accession process in general are missing in the political science literature. Approaches in other fields, such as economics, attempt at providing more general approaches of integration. One example is the club good approach.

**Club Good and Game Theory**

Public goods research can be traced back until the 18th century, when David Hume provided the first description of a public goods problem (Hume 1976 [first published 1739]). Samuelson, however, formulated the first basic formal model of public goods and incorporated it into the heart of economic research (Samuelson 1954 and 1955).

Following this growing body of research, the theory of clubs evolved out of the public goods ideas. Buchanan’s *An Economic Theory of Clubs* (1965) and Olson’s *Logic of Collective Action* (1965) are regarded as the seminal works in the field of club goods. These two investigations are the first attempts to distinguish different kinds of goods, namely pure public goods, pure private goods, and impure public or private

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6 See most of the aforementioned literature, which theoretically concentrates either on one organization or on the outsider states in the geographical area.
goods. With this differentiation, the authors set the incentive for the development of an extensive body of literature of the theory of clubs.

The incorporation of club goods as a term was supposed to overcome drawbacks of the description of goods as strictly public (private) goods, even if the object in examination was not strictly non-rival (rival) and non-excludable (excludable). Another reason was the goal to explain how actors hinder free riding and negative externalities while providing certain goods considered to be public.

*Club goods*, in contrast, are impure public goods, defined as partially rival and / or partially excludable (Cornes and Sandler 1996). According to their definition, a “good is non-rival or indivisible if a unit of the good can be consumed by one individual without detracting, in the slightest, from the consumption opportunities still available to others from that same unit” and “goods whose benefits can be withheld costlessly by the owner or provider and thus, generate excludable benefits (Cornes and Sandler 1996: 8f).

Olson (1965) distinguishes between inclusive groups, which provide public goods, and exclusive groups, which provides club goods. Whether a group or an organization is inclusive or exclusive depends on the nature of the good itself.

Although many researchers based their assumptions on public or collective goods (see for example Phare 1995), it is, however, almost impossible to find pure public goods in international politics. The European Union, which is examined by Robert Phare

<table>
<thead>
<tr>
<th>Characteristics of goods</th>
<th>Excludable</th>
<th>Non-Excludable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rival</td>
<td>Private goods</td>
<td>Common-pool goods</td>
</tr>
<tr>
<td>Non-rival</td>
<td>Club goods</td>
<td>Public goods</td>
</tr>
</tbody>
</table>

7 The distinction between these goods is normally a function of whether a good is rival or not and whether it can be withheld from others or not (see also next page and Olson 1965, Buchanan 1965, Cornes and Sandler 1996). The table illustrates this differentiation.
(1995), for example, produces excludable goods, rather than public goods, since non-members are usually not part of the consumers of these goods.

Thus, club theory restated more and more the traditional areas of public goods (Olson and Zeckhauser 1966; Sandler 1977; Murdoch and Sandler 1982, 1984, 1986). Following the work of Olson and Zeckenhauser (1966), Sandler (1977) challenged the view of regarding ‘defence’ as a common good if it is defined not only within the group. Rather, he developed a theory of alliances arguing that organizations, for example the North Atlantic Treaty Organization (NATO), achieve excludability of ‘defence’ and thus limit the provision of benefits only to areas and states that are belonging to these institutions.

The argument follows logical assumptions. Within the analysis of organizations it is argued that the provision of public goods leads to free riding problems (Olson 1965). Since there is no control over the consumption of the good, actors have the incentive to benefit from the provision, but are not willing to pay for the production of the good. These free riding problems are crucially characterized in the increase of costs for actors who pay and thus, the decrease in incentives for the provision of these goods. Furthermore, free riding causes negative externalities for other actors (Pigou 1946; Bator 1958; Coase 1960). These factors lead to market failure, which causes the pressure for market intervention or, in the international arena, pressure for cooperation including enforcement rules and the possibility of sanctions against free riders.

Then, with the creation of an organization, the provided goods become excludable for outsiders. In some cases certain goods become excludable also for selected members of an organization if they are discriminated against. Thus, international organizations are nowadays frequently (if implicitly) analyzed within the
framework of the theory of clubs rather than within a framework of public goods. As a result of the distribution of costs between the members, the benefits for the single members are increasing in an economics of scale.

One of the areas within club theory utilizes game-theoretical approaches to investigate into the optimal size of clubs. In an organization that provides an impure public good, an optimal size of the club exists. This implies, that the entrance of new members might be welfare enhancing through the participation of the production of the club good. If the marginal utility decreases, however, the benefits of the organization will decrease for the single member and the organization as an aggregate (Pauly 1967, 1970). In other terms, there is a trade off between prospective economic gains of integration and an increasing heterogeneity of participating actors (Ruta 2002).

Club good theory provides important implications and clues about how enlargement processes might influence actions. It is, however, highly theoretical and has very few practical applications. Other approaches try to combine certain theoretical implications from the club good approach in order to transfer it into quantifiable and practical theories.

\[ \begin{array}{cccccccccc}
N & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\
\hline
u_i & 1,00 & 1,00 & 1,33 & 1,75 & 2,20 & 2,33 & 2,29 & 2,13 & 1,89 & 1,60 \\
\hline
\sum_{N} u_i & 1 & 2 & 4 & 7 & 11 & 14 & 16 & 17 & 17 & 16 \\
\end{array} \]

This table clarifies the issue of optimal club sizes. N, the number of members, is shown in the first row, the individual utility \( u_i \) in the second row, and the aggregated utility \( \sum_{N} u_i \) in the third row. Here, we see that the organization maximizes its utility with a membership size of eight or nine. At this size, the individual utility, however, is decreasing. The maximum was reached with six members already. For further discussion and other examples see also Cornes and Sandler (1996).
Combined Approaches

Mattli’s work (1999) is one of the few approaches that combines the economic approaches with political science approaches and utilizes property rights theory to investigate into integration issues. He argues that an organization only faces the incentive to integrate new members if the candidate provides positive net benefits or economic gains for the organization or if the costs of exclusion of these countries are higher than the costs of integration. His work, however, concentrates on incentives for outsiders to join and the success of integration while my work goes a step further and adds an explanation of the incentives for old members to implement certain admission strategies.

Other work that utilize a combined approach is Ruta’s (2000) work and an approach provided by Brou and Ruta (2002). Ruta’s paper serves more as an overview of the current literature and attempts to find the crucial factors inherent in the integration process. Furthermore, the work cited is rather formal and lacks practical applications. Conditionality is not an object of analysis. Brou and Ruta (2002) attempt at providing a formal model explaining why there are incentives to politically integrate poorer countries. Based on the seminal lobbying game developed by Grossman and Helpman (1994), their paper develop a lobbying game, arguing that more organized countries pertain higher shares of lobbying groups which gain from influencing economic policies in poorer countries by political integration.

Two recent papers (Mattli and Plümper 2002a and 2002b) provide a testable approach as to why candidate countries apply for membership in the European Union. Furthermore, they examine the impact of an EU application on the level of market distortions in applicant countries. An extensive statistical analysis is included in this
work. The authors utilize domestic support models to derive hypotheses about the correlation between EU conditionality and the level of market distortions within the applicant state. Their results show that conditions are crucial in membership application. However, these papers also pre-assume conditionality.

Summary

To sum up the existing body of literature, much work has been done on issues concerning international cooperation and organizations. However, the scholars miss important features of these processes. Indeed, most research concentrates on either pure market or solely on institutional factors to explain integration issues. Furthermore, traditional work consists of either very specialized case studies or only formal models, and only a few researchers investigate utilizing statistical analysis. Finally, the interaction between outsiders and insiders has been mostly ignored.

Indeed, an explanation of the seemingly trivial question of why members choose conditions for the admission of outsiders is not considered at all. As elaborated above, this lack of examination causes serious problems of inferences in the existing literature. While the basic body of literature analyze factors that lead to integration, only very few works are concerned with the details of integration and the explanation of the existence of admission conditions.

The theory developed here attempts to merge these different branches to provide a better understanding of the integration process. Overall, considering the crucial shortcomings in this field, this approach attempts to combine all parts of the whole. The goal is to transform the various single investigations on integration and develop them to a complete model that is able to explain incentives which members face in the
organizational expansion process. In order to understand and improve the integration of states into a globalizing world, it is of vital importance to understand how these processes work. This is the ultimate goal and contribution of this paper.

In order to examine these incentives and constraints, club good theory provides a solid foundation on which to begin this study. The primary tool of analysis will be game theory. Thus, we are able to derive a model to explain when and why organizations face the need and incentives to implement admission conditions for prospective members. Game theory is utilized, because it seems appropriate to assume actors as utility maximizer. The decision to create cooperation is based on rational decisions as well as the strategies chosen by members in the enlargement process. Then, it is useful to employ a signal game in order to logically derive the hypotheses.

The next chapter will develop the theory starting out from the integration utility organizations provide for members. This part serves as a basis to examine the strategies members employ in the enlargement process. From this point on, I derive a model that investigates into the impact these strategies have on outsider states and why some states apply for membership while others choose outside options. The actions outsiders choose will affect members in future decisions about strategies. Assuming asymmetrical information, a signal game is developed to explain the screening devices members require from applicant states in order to reduce this asymmetrical information. From there on I am able to derive the hypotheses, which are analyzed in a statistical framework in the following chapter.
CHAPTER 3

THEORY

This work aims at providing new insights into the theory of integration by utilizing club good and game theory. To start with, the assumptions underlying my theory are based on the rational choice approach. Actors, given their preferences and constraints, decide and act to maximize their expected utility. For the time being, I assume that governments are rational actors who aim at maximizing the aggregate welfare of the country they govern. If necessary, however, I more explicitly model the domestic decision-making process by assuming a political arena. Within this arena, governments maximize a ‘political support function’ consisting of votes and interest groups’ contributions. This assumption allows relating the outcome of international negotiations to the distributive effects of the enlargement of an international political union.

In the most basic framework, however, rational and benevolent governments negotiate the conditions under which an international union is established or under which membership of a pre-established union is enlarged.

As I mentioned before, I derive hypotheses about the behaviour of governments from basic club good (Cornes/ Sandler 1996) and game-theoretical models. Thus, this paper conceives the relevant subtype of international organizations as exclusive clubs. In this view, club members (or members of international political unions) exclusively accept or reject applicant countries. Under this condition, the terms of membership become negotiable between current and potential members.

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9 See chapter 2 for definitions of club goods, excludability, and partial-rivalry.
The analysis starts out with a discussion of the conditions under which countries form an international political union. Obviously, to successfully create such a ‘club’, the condition of weak pareto-optimality has to be satisfied. For that, the union in aggregate has to be at least utility neutral:

\[ u(M) = u(A \cup B) \geq u(A) + u(B) \]  

(1)

where A and B denote single countries, and M the number of union members. In addition, weak pareto-optimality requires that no member country is worse off after the creation of a club. Note that due to negative externalities non-members may suffer a utility loss. These negative externalities are characterized most crucially in the loss of market access through discriminating trade policies of member states against non-members, investment diversion, and arising migration problems (Mattli 1999). Thus, the assumption that there is an incentive for outsiders to join the club seems to be appropriate.

To ensure that all members equally gain from the admission of new members, the candidate’s performance relative to the organization’s performance is of crucial importance. It is assumed that the candidate’s performance is object of asymmetric information. The organization is able to observe some of the characteristics of an outsider state, but faces uncertainty regarding the likelihood of a country to cheat once it has earned membership. Cheating refers to the unwillingness or inability to conform to the rules and procedures of an organization. If a new member becomes a moral hazard for the organization because it is cheating, old members will suffer utility losses.

The central argument states that members of an organization will not arbitrarily require reforms or randomly choose between candidates, but instead strategically
implement conditions. The implementation of a certain set of conditions serves as screening devices. It is then possible to differentiate between candidates who implement the required reforms fast and straightforward and candidates who do not. Members assume that states which are able to fulfil these conditions fast and straightforwardly are less likely to cheat within the organization.

This work theoretically investigates into these processes by first analyzing the determinants of the utility of the membership. These utilities are derived from club good theory with a focus on an analysis of the club goods provided. In a second step, the influence of the accession of new members on the utility of old members will be examined. In this frame, a basic model is derived to explain which states are more likely to apply for a membership within an organization. Then, the strategic choices of applicants and members are analysed in a signaling game. From this point on, we are able to derive the hypotheses.

Integration Utility of International Political Organizations

The function of a club in the proposed model is the successful provision of goods that cannot be achieved by a country alone. In general, the integration utility of a given club is the function of providing essentially three goods.

First of all, political integration harmonizes regulations. The goal of these harmonization efforts is the achievement of a decrease in existing transaction costs between states and an increase in the ability of economic actors to utilize positive benefits of scale. This leads to an enhanced macro-economic efficiency since it lowers non-tariff barriers to trade. Secondly, political integration guarantees the capacity to act within policy areas, within which the individual nation state has lost its problem-solving
capacity. Finally, the club guarantees the enforcement of common rules within single member states. The latter functions imply that members of a political organization attempt to avoid market failures and negative externalities within the integration area through the incorporation of certain rules. Furthermore, the goal is to increase the capacity to sanction and monitor the members’ actions. The intensity of the provision of these goods, however, varies over different organizations.

In sum, the utility of a club lies in the successful and efficient provision of the club good. It is assumed that political integration produces an integration utility, which non-members cannot achieve to the full extent. In relation to pure foreign trade zones, the members’ utility of political unions is a result of the harmonization of adjustments and the production of political capacity to act within politics areas, within which individual national states are limited in their ability to act. Under these conditions, a club is regarded as successful if it is able to efficiently promote the integration utility for its members. Furthermore, the organization has to be capable of minimizing friction losses, which result from rule enforcement and conflict management.

In contrast to pure foreign trade zones an extension of political cooperation may not be always beneficial. Then, the question arises as to how the admission of new members may change this constellation and the benefits the actual members have had up to this point. Thus, the next section will investigate into the influence of the accession of new members on the integration utility of old members.
Impact of the Expansion of a Club

on the Integration Utility of Old Members

Regarding the admission process, it is obvious that the integration of new members may positively or negatively affect the marginal utility of the organization and individual members dependent on the political and economical performance and institutional characteristics of the candidates. What is the impact of the divergence in performance between outsiders and insiders on the utility of old members?

Based on the assumption of weak-pareto optimality we made above, new members are only costly if the condition of weak-pareto optimality is not given. In all other cases, the organization either gains from integration or at least does not lose from admitting the candidate.

Basically, there are two reasons, which might make expansion costly for old members. First, an outsider is not able to conform to the organizational rules. On the political level, the conformity of institutions is of special importance for the ability to enforce the organizational rules on the domestic level. A member of a democratic organization that lacks institutional stability, for instance, may not be able to guarantee democracy and a constitutional order. This endangers the provision of the club goods, especially if these differences would lead to a decrease in political, enforcement, and monitoring capacity. On the other hand, if the candidate’s institutions fit with the characteristics of the organization, the candidate’s admission would tend to benefit the organization in providing the goods. The same holds true for the economic performance of the states. Here, the difference between the members’ and candidates’ economical institutions, such as the level of regulatory quality, should be minimized in order to maximize the members’ expected utilities.
In general, it is argued that as the economic and political institutions of an organization become more homogenous, the probability of minimizing friction losses and transaction costs increases. Then the club is able to provide its integration utility efficiently.

Secondly, a state is able to perform relatively better but still be prone to cheating once within the organization. The willingness and ability not only to receive the benefits, but also to bear the costs of a membership, differ from state to state. These states are regarded as moral hazards for an organization. If there exists cheating within the organization, the organization is not able to efficiently provide the integration utility.

Thus, the model has to explain appropriate strategies for members to avoid the admission of states that may cause high long-term costs for the organization but to admit states that are beneficial or at least not costly.

In doing so, old members strategically avoid the admission of long-term “costly” states in basically two stages. First, they implement a set of conditions that lead some states to choose outside options instead of applying for membership. It is assumed that states that seek membership have to rely on domestic support by voters and interest groups. Accepting the conditions by applying for membership might lead to an increase or decrease in domestic support. Since it is assumed that an incumbent’s ultimate goal is to stay in power, he or she has to consider the implications of an application on support before he or she makes the decision to apply. If a government would lose drastically in support by applying it would opt against an application. This means that members of an organization are able to separate these types of states for an application, which are basically able to fulfil the requirements from states that are not able to achieve the required level of performance and thus choose outside options. This strategy,
however, is not appropriate to exclude states that are performing well but prone to cheating.

Thus, in a second step, an organization requires the acceptance of these reforms as screening devices for applicant states. The speed and straightforwardness of the fulfilment of these conditions serve as signals from the candidates for the organization that they are willing and able to bear the costs of the membership and will not cheat upon becoming club members.

Figure 3.1. Selection-Mechanism in the Enlargement Process

Figure 3.1 illustrates the basic logic of this process. Members of an organization will implement a certain level of conditions so that some states will apply for a membership and some will choose outside options. Ideally, excluded states are countries which do not fulfil the requirement of weak pareto optimality (equation 1). Furthermore, and in particular to discriminate against cheating states, the organization implements screening devices based on the conditions that are in place. Members assume that the faster and the more easily countries are able to accept and implement
the required reforms, the less likely they are prone to cheat within the organization. The following sections will outline these two stages in-depth.

First Stage: The Likelihood of an Application – Discriminating Against Applications from Costly States

This section aims at providing a formal model of the optimal strategies for member states in order to exclude certain states from applying for membership. Member states, in order to exclude low-performing states, have to implement a certain set of conditions. Whether a state applies for membership or not depends on the domestic support function. In other words, the political costs that a government faces are connected with an application.

It is assumed that governments maximize a ‘political support function’ consisting of votes and interest group contributions. The model employed here is derived from Grossman and Helpman’s seminal work on lobbying (1994, 2001) and further developments of Plümper and Martin (2001) and Mattli and Plümper (2002a and 2002b). Based on the model presented by Mattli and Plümper (2002a and 2002b), it is possible to derive the hypotheses about the characteristics of states opting for membership application. To keep the model parsimonious, I assume that the international organization in question is an institution of the Western world, incorporating the principles of democracy and market economy.

The model predicts the level of market distortions within a society and takes the structure of a common agency problem, a situation that arises when several principals attempt to induce a single agent to take an action that may be costly for the agent to perform. The government serves as an agent for the various and conflicting preferences
within society while bearing the costs for implementing an inefficient policy. These policies stem from the government’s accountability to the general electorate (Grossman and Helpman 1994).

In this version of the Grossman-Helpman model, individuals derive their utility from three sources. Firstly, the individual’s utility is based on consumption \((1 - \tau y_i)\) with \(y_i\) denoting agent \(i\)'s pretax income and \(0 < \tau \leq 1\) the (fixed and flat) tax rate, secondly rental transfers \(R\), and finally the provision of a public good \(P\).

The individual’s utility \(u_i\) in each period is

\[
 u_i = \begin{cases} 
 1 - \tau y_i + \frac{R}{\sum_{j=1}^{J} N_j} + p, & \text{if } i \in J \\
 1 - \tau y_i + p, & \text{else} 
\end{cases}
\]

(2)

where \(J\) is the number of organized special interests. If we assume such a frame, individuals would maximize their income by establishing new interest groups or joining old ones. However, the number of individuals \(i\) belonging to interest groups \((j=1,2,\ldots,J)\) is always smaller than the total population \(N\). We are able to assume this based on existent collective action problems, which will prevent most individuals from organizing in lobbies (Olson 1965). Then, a restriction can be set to ensure that the median voter does not belong to the organized interest groups. Thus,

\[
0 \leq \lambda = \sum_{j=1}^{J} \frac{N_j}{N} < 0.5
\]

(3)
where \( \lambda \) measures the share of the population organized in lobby groups in each period. These lobby groups offer contributions to the incumbent officeholders in exchange for a policy that increases the level of market distortions \( R \). The aim of the interest group is to maximize its expected utility, which is a function of its gross net benefits and the costs of the contribution. A maximum is reached, when the interest group achieves all gross benefits without paying any contributions.\(^{10}\) Furthermore, interest groups are only willing to pay contributions if the costs do not exceed the received rents. Market distortions are redistributive, which means that subsidizing one sector will decrease the net benefits of all other sectors given the budget constraints of the government.

Next, to derive the government’s equilibrium policy we have to account for the existence of interest groups lobbying for special interest policies. Since the government’s policies are constrained by a given budget, an interest-group friendly policy raises not only the level of market distortions, but also lowers the utility of non-subsidized sectors or unorganized groups. Thus, organized individuals gain from market distortions while unorganized individuals are better off with lower levels of market distortions. Since the median voter does not belong to \( J \) he would lose from these market distortions.

Whereas interest groups are mainly concerned with their influence on policy-making, the incumbent observes a relationship between total collections and re-election prospects. The government has to take into account voters’ preferences, which leaves the incumbent with the dilemma that he loses the support of one group depending on the level of market distortion he chooses. Furthermore, he is constrained by a certain budget, which is a function of the level of taxation \( \tau Y \). Given this budget, the

\(^{10}\) Note that for our purposes the relation between transfers and rents is unimportant.
government has to decide how much to spend on the public good $P_i$ and how much market distortions $R_j$ it is willing to permit. Then,

$$G = \tau Y = \sum_j R_j + P_i$$  \hspace{1cm} (4)$$

Then, the government’s utility function can be described as the weighted sum of the contributions and the aggregated welfare,

$$S_g = \pi \sum_i u_i + (1 - \pi) \sum_j C_j$$  \hspace{1cm} (5)$$

where $S_g$ describes the government’s support function, $\sum_i u_i$ denotes the aggregated welfare, and $C_j$ the support of interest groups in contributions. Furthermore, the weight $\pi$ is bounded so that $0 \leq \pi \leq 1$, whereas $\pi$ measures the “degree to which the incumbent government’s political survival depends on the utility of the population relative to its dependent on the will of the elite” (Mattli and Plümper 2002).

The government sets a policy vector and collects the contribution from each lobby associated with its policy choice. The choice of the policy should maximize a weighted sum of aggregated social welfare and total contributions by setting a certain level of market distortions. Therefore, the maximization function can be defined as a function of the level of market distortions:

$$\max S_g = \max f(C_j) - f\left(\sum N u_i\right) = \max C_j (R) - \sum_N u_i (R)$$

$$= \max f\left( C_j - \sum N u_i \right) = R^{\pi a} - R^{(1-\pi)b}$$  \hspace{1cm} (6)$$

where $0 \leq C_j < \infty$, $0 \leq a \leq 1$ and $1 \leq b < \infty$. It follows that
\[
\frac{\partial f}{\partial R} = \pi \frac{a \ C_j(R)^{(x_\pi-1)}}{(1 - \pi)^b \sum_{N} u_i(R)^{(b-x_\pi b^{-1})}} - (1 - \pi)^b \sum_{N} u_i(R)^{(b-x_\pi b^{-1})} = 0
\]

\[\Leftrightarrow 1 = \frac{\pi \frac{a \ C_j(R)^{(x_\pi-1)}}{(1 - \pi)^b \sum_{N} u_i(R)^{(b-x_\pi b^{-1})}}}{(1 - \pi)^b \sum_{N} u_i(R)^{(b-x_\pi b^{-1})}}\]

(7)

After some transformations of equation (7) we finally derive

\[R_{opt} = \left(\frac{(1 - \pi) b}{\pi a}\right)^{\frac{1}{(x_\pi - (1 - \pi)b)}}\]

(8)

where \(R_{opt}\) is the optimal level of market distortion for the government in order to maximize its domestic support.

This result implies that since the individual is better off without market distortions, but the interest groups are better off with market distortions the policy choice depends on the relative importance of the two groups within the society. The importance of each group within the state then defines the equilibrium level of market distortions. If the government’s survival depends on the utility of the population, the policy outcome would be that of less market distortions. On the contrary, if the political survival of an incumbent does not depend on the voter, the incumbent will maximize its utility by the implementation of a certain level of market distortions. The power of the groups is dependent upon the institutional system of the state. The more democratic a country, the more important is the population, and the less democratic a country, the more important are elites in the incumbent’s survival function.

The choice of government is illustrated in Figure 3.2.
The government maximizes its support from rent-seeking interest groups with the implementation of lower levels of regulatory quality. Note that the higher the regulatory quality within a country, the less market distortions are existent. Then, if $\pi = 0$, the government chooses $\tilde{p}_j$. In the contrary, the median voters' policy preference is more quality of regulation and government would choose $\tilde{p}_m$ if $\pi = 1$. If $0 < \pi < 1$, the government implements a policy $\tilde{p}'$ to maximize a weighted sum of the aggregated welfare and the contributions.

This figure also shows the costs of a government of choosing a certain policy. For example, if a government chooses a policy $\tilde{p}_m$ in a less democratic regime, it would not be able to maximize its rents because interest group's contributions would decline. In this case, however, interest group support is more important for the government.

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11 This table was printed with the permission of Thomas Plümper and Walter Mattli © (Konstanz)
The members’ utility of integrating outsiders, however, is a function of economic and institutional performance. Expressing this in terms of market distortions $R$ and level of democracy $\pi$, members try to maximize

$$U_o = \max \sum M \left( \pi + R^{-1} \right)$$

where $U_o$ denotes the utility of old members. By taking into account the political costs of outsiders, insiders are able to find strategies in order to exclude countries, which are low-performing and thus reduce the organization’s integration utility. The appropriate strategy for an organization is to set the level of requirements $P_o$ to progressively increase the costs for governments with decreasing homogeneity of a country’s economic and political institutions. It then requires the candidate, given the conditions, to set a policy $P_o$ in order to get accepted. The higher the level of market distortions or the lower the level of regulatory quality within a country, the higher the costs of application since the government loses the contributions of the interest groups. The more democratic a country, on the other hand, the more voters support a government gains submitting an application. Furthermore, once a state has adopted $P_o$, the likelihood that it will increase the level of market distortions is relatively low, since it would lose voter support.

I therefore can derive the hypotheses that the likelihood of an application increases with an increasing level of democracy and a decreasing proportion of market distortions, based on the costs imposed on the government.
Hypothesis 1: Regulatory Quality and Application

The higher the level of regulatory quality within a state, the more likely the state is to apply to an international organization.

Hypothesis 2: Democracy and Application

The higher the level of democracy within a state, the more likely the state is to apply to an international organization.

In the considerations of an organization, these two implications serve to find one solution of avoiding costly states that are not able to bear the burden of membership costs. Therefore,

Hypothesis 3: Democracy and Admission

The higher the level of democracy within an applicant country, the more likely it will be admitted to the international organization.

Hypothesis 4: Regulatory Quality and Admission

The higher the level of regulatory quality within an applicant country, the more likely it will be admitted to the international organization.

Restrictiveness of Conditions – Analyzing Across Organizations

Analyzing across organizations we see that the restrictiveness of conditions vary. This is partly explained by the model presented above, but the chosen restrictiveness of conditions $\overline{P_0}$ is not only determined by the level of democracy or the extent of market distortions, but also lies within internal features of the organization. The restrictiveness of conditions across organizations, then, depends furthermore on the ultimate goal of the
organization, the success of the organization, and characteristics of the decision-making process. Thus, the higher the expected negative externalities the more restrictive the conditions will turn out.

First of all, the ultimate goal of an organization will have an influence on the level of restrictiveness. As argued above, organizations serve the provision of three specific goods: Harmonization of regulation, the provision of political capacity, and the enforcement of rules. Furthermore, the intensity of provision varies across organizations. Then, it is argued that the impact of expansion on the old members’ utility increases with the intensity of the provision of club goods. It follows that members of an organization with a high degree of intensity fear more extreme negative externalities caused by the admission of low-performing states and thus implement more restrictive reforms.

Furthermore, the more dimensions an organization has, the more restrictive are the requirements for outsiders because negative externalities would also affect all dimensions. This means one has to distinguish whether an organization provides the club good on the economic level only or whether it incorporates economic, political, and judicial policies. The enforcement of rules, as one example, then becomes increasingly challenging.

**Hypothesis 5: Club goods and Conditions**

The higher the intensity of the provision of the club good within an organization the higher the restrictiveness of conditions for outsider states.

**Hypothesis 6: Dimensions and Conditions**

The more dimensions an organization incorporates, the higher the restrictiveness of conditions for outsider states.
Secondly, the current success of an organization determines the level of restrictiveness. Success of an organization, in this context, denotes a high level of efficiency with which the club goods are provided, the achievements of benefits relative to low levels of costs, and the longevity of an organization.

The more successful an organization is concerning the provision of the good, the less dependent it is on the admission of new states, which might improve the efficiency with which the good is provided. This means a relatively successful organization is able to filter out cases, which are connected with high uncertainty; members can be more risk averse because the loss of a beneficial would-be member is not as consequential. A relatively unsuccessful organization, however, needs to integrate as many beneficial states as possible in order to survive. Thus, it has to take more risk in highly uncertain cases. Therefore, a relative unsuccessful union is not able to set the conditions such that it would risk losing beneficial prospective members. A successful organization, however, is not dependent on admitting every beneficial state. Thus, it is able to set the conditions such that it excludes every low-performing country.

In this context, risk aversion plays a central role. A relatively successful organization might have incentives to admit low-performing countries.\(^\text{12}\) Whether an organization decides for or against the admission of a state, then, depends on the level of risk aversion within this organization. A relatively risk averse organization avoids situations in which low-performing states are admitted. An organization that is not risk averse might integrate states that are not expected to be beneficial for the organization but also expected not to be costly.

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\(^{12}\) One reason for this desire would lie in the presence of international norms.
**Hypothesis 7: Success and Conditions**

The more successful an international organization the higher the restrictiveness of conditions for outsider states.

**Hypothesis 8: Risk Aversion and Conditions**

The higher the level of risk aversion within an organization the higher the restrictiveness of conditions for outsider states.

**Hypothesis 9: Success, Risk Aversion and Conditions**

The more successful an international organization and the higher the level of risk aversion the higher the restrictiveness of conditions for outsider states.

Finally, the decision-making rules (if held constant) will have an influence on the restrictiveness of conditions. Possible modifications of majority conditions in decision making of the organization are considered to be crucial for individual actors within the organization. If the admission of new members increases the efficiency of decision-making, it can be regarded as a positive utility of the organization.13

The costs of the loss of power or influence, for individual members in particular, are almost always a result of modifications of the “minimum winning coalition”. The minimum winning coalition is the smallest number of actors within a group, which possess the required majority to pass decisions and alter the status quo.

Then, if there are M members within an organization and x, policies, the utility of a single member depends on the ability to enforce its preferred policy. Thus,

\[ u(A_i) = \max(x_i) \]  

(10)

The maximization of the preferred policy is a function of several factors,

---

13 See the discussion on the optimal club size in chapter 2. Furthermore, see Pauly (1967; 1970) and Cornes and Sandler (1996)
\[ u(A_i) = \max(x_i) = F(M, x_n, \beta) \]  

(11)

where \( x_n \) denotes competing policy preferences of other members and \( \beta \) denotes the inherent decision-making rules. Then, the utility function is described as

\[ u(A_i) = \beta \cdot (x_i, \ldots, x_n) \cdot M \]  

(12)

This function implies that if \( M \) is held constant, the probability to pass the preferred policy depends on the size of \( \beta \). If we assume that \( 0 \leq \beta \leq 1 \) and the range denotes the restrictiveness of the decision-making rules, whereby 1 equals unanimity and 0 single majority, then it can be inferred that the higher \( \beta \), the more likely the individual member \( A_i \) is able to enforce its preferred outcomes. In the extreme case of \( \beta = 1 \), \( M \) belongs to the minimum winning coalition. Since individual actors desire to be part of this coalition this is the preferred outcome.

Then, if \( \beta \) is held constant and \( M \) varies, it can be inferred that the probability of the enforcement of solutions preferred by individuals tends to decrease with the increase in membership size with constant decision rules. In other terms, the more restrictive the decision-making rules and as more actors are included in the minimum winning coalition, the higher the probability for each member to hinder unfavored outcomes. Along with this, the guarantee of the enforcement of a member’s preferences decreases since there exist more possible veto players. The extreme case is a decision-making system with unanimity rule.

In general, if members join a political union they will have an incentive to enforce their preferences and thus, have an impact on the likelihood of cooperative outcomes. In particular, the political efficiency of the club tends to drastically decrease the more restrictive the decision rules are. The individual member fears the loss in power.
Whereas the decrease of political capacity with an increase in membership size and constant rules is considered, the individual member focuses on its own odds to enforce certain rules or to hinder unfavored outcomes.

Three results are possible. First, the member state tries to hinder the admission of too many candidates where success is relative to the state’s veto power. Secondly, it favors the admission of new states if this changes the minimum winning coalition to his or her advantage. Finally, the state can bargain for a discrimination against new members. In general, the more states are able to influence the chosen set of conditions, the more restrictive the chosen conditions will turn out to be.

**Hypothesis 10: Minimum Winning Coalition and Conditions**

The bigger the minimum winning coalition within an organization the greater the likelihood of more restrictive conditions.

These hypotheses, however, depend in a high degree on the balance between the power of the single member states and the power of supranational governing bodies. The more power supranational bodies have in the decision-making process the less weight individual preferences have. Then, the aforementioned hypothesis is less prevalent and important in explaining the restrictiveness of conditions.

To sum up the last two sections, I arrived at a point where I am able to explain why organizations choose conditions in the first place – they aim at excluding countries from an application that are low performing compared to the average of the organization. Thus, the group of states which apply for a membership is diminished. Furthermore, the restrictiveness of conditions varies across organizations depending on the structure and characteristics of expected externalities caused by the enlargement.
But one can also see that the remaining states might still have the incentive to cheat within the organization. To avoid the acceptance of these moral hazards, old members need to identify different strategies. To understand the challenges and opportunities members face, a signal game is developed.

Second Step: Signal Games in the Admission Process – Discriminating Against Costly Members in the Admission Process

In the second stage, members of an organization aim at avoiding the admission of states that are likely to cheat once becoming members. The appropriate strategies are derived from a signal game. This game is based on simplistic assumptions by constraining it to a two-person game with two different types. This strategy allows for parsimonious modelling and still gives us enough clues about the process in an n-person game and the derivation of hypotheses. In the basic game, there exist two players, the sender and the receiver. Applied to this paper, the sender is the admission candidate and the receiver is the organization.
In the beginning, nature \( Na \) decides the type \( t_i \) for the admission candidate out of a set of types \( T = \{t_A, t_B\} \) according to a probability distribution \( p(t_i) > 0 \) for every type \( i \) where
\[
p(t_A) + p(t_B) = 1
\]
(13)

The probability to be \( t_A \) is \( \Pr(t_A) = p \), the probability of being \( t_B \) is \( \Pr(t_B) = (1 - p) \).

The difference between these two types of admission candidates is the probability to cheat once being within the organization. Cheating refers to the pattern of non-enforcement and/or fulfilment of the organizational rules and the unwillingness to bear the costs of membership. If it is assumed that type B is more likely to cheat within the organization, type B states find signaling more costly than states of type A. Thus,
\[
c_{A}(t_B, s_i) > c_{A}(t_A, s_i)
\]
(14)
Since outsiders face negative externalities if they are excluded from an organization as stated above, even types Bs' have the incentive to join an organization up to a certain threshold. Because of the aforementioned constraints, there is a high possibility that type B states perform badly within the organization lower their costs. Then, type B can be regarded as a case of moral hazard, knowing that once being a member of an organization, the possibility of being excluded is fairly small. Summarily, type As' are regarded as beneficial for the organization, type Bs' as costly.

The admission candidate T observes \( t_i \) and then chooses a signal \( s_j \) from a set of messages \( S = \{ r, \sim r \} \). In this basic game, \( r \) denotes just the fulfilment of the required conditions, and \( \sim r \) denotes no reforms.

The organization O observes the signal \( s_j \) and then chooses and action \( a_k \) from a set of feasible actions \( A = \{ a, \sim a \} \); whereas \( a \) in this game denotes the acceptance of a candidate and \( \sim a \) denotes the rejection of a candidate. However, while the organization observes \( s_j \), it does not observe \( t_i \) according to asymmetric information. Members of an organization are not able to know all characteristics of an applying state. Thus, the organization is uncertain whether it is facing a type A or a type B candidate when it chooses whether to admit or to reject the candidate.

The payoffs are then given by

\[
U_O(t_i, s_i, a_k) \text{ and } U_T(t_i, s_i, a_k)
\]

(15)

where \( U_O \) denotes the integration utility for old members and \( U_T \) the utility of outsiders.

In this game, there are four pure strategies for the outsider T. The outsider can

(1) play \( r \) (reforms) if nature draws \( t_A \), and play \( r \) if nature draws \( t_B \).

(2) play \( r \) if nature draws \( t_A \), and play \( \sim r \) (no reforms) if nature draws \( t_B \).
(3) play \( \neg r \) if nature draws \( t_A \), and play \( r \) if nature draws \( t_B \), and
(4) play \( \neg r \) if nature draws \( t_A \), and play \( r \) if nature draws \( t_B \).

Since the game ends if the outsider chooses no reforms \( \neg r \), the organization itself can
(1) play \( a \) (acceptance) if the candidate chooses \( r \), or
(2) play \( \neg a \) (no acceptance) if the candidate chooses \( r \).

The Bayesian perfect equilibrium is achieved if the players take the best action in light of
the available information at each node, and draw correct inferences from observations.

The four possible pure–strategy perfect Bayesian equilibria in any game would be
(1) pooling on \( r \),
(2) pooling on \( \neg r \),
(3) separating with \( t_A \) playing \( r \) and \( t_B \) playing \( \neg r \), and
(4) separating with \( t_A \) playing \( \neg r \) and \( t_B \) playing \( r \).

Then, given the assumptions made about preferences above, I assign the payoffs for
each outcome. Outsiders prefer to be admitted to an organization. A type B candidate,
then, loses from choosing \( \neg r \) and gains from pretending being a type A by choosing \( r \).
The organization, on the other hand, gains from admitting a type A state, but loses from
the admission of a cheating state. Since the organization is not certain whether she
faces a type A or a type B, she is not certain whether the applying state, which accepts
and implements the reforms is a cheating or non-cheating country. Without uncertainty,
the equilibria would be \((t_A, r, a)\) and \((t_B, \neg r)\). With uncertainty, the organization could
decide to randomly assign candidates for acceptance based on \( p \) and \((1-p)\), if known.

Then, the organization will calculate its payoff from admitting, which is

\[
1 \times p + (1 - p)(-1) = 2p - 1
\]
Therefore, the organization will admit the candidate if \( p > 0.5 \). This, however, would lead to a pooling equilibrium, where a candidate always chooses reforms \( r \), independent of its type.

Whereas both candidate types fit well with this pooling strategy, it cannot be an equilibrium since the organization’s aim, on the other hand, is the elimination of pooling incentives, and thus to minimize the possibility to admit a candidate of type B. In this instance a type A state also would pursue its maximum likelihood of being admitted to the organization and thus, sends signals to the member states.

Thus, the organizational strategy has to consist in the implementation of different screening devices. Here, the organization derives its strategy from the assumptions made above. If type B states are more likely to cheat but still willing and able to accept and implement the conditions, the organization needs to implement costs that are too high for cheating states to pay. To find this threshold, a more in-depth examination of the term “cheating” is required.

The reason for countries to cheat is usually grounded in the domestic system. Here the autonomy of the government or the strength of the opposition determines the costs of membership. A strong opposition may lead to two problems. One problem is that an opposition may slow down the process of reforms, especially if the opposition is part of the government. This means that conditions cannot be accepted as fast as the government in place would wish. The second problem is that a strong opposition increases the probability to reverse an integration-friendly policy. If the likelihood of an anti integration party getting into power is high, so is the danger for an organization that the country will be costly by reversing its integration friendly policies.
If cheating states find it more difficult to implement required reforms because of inherent domestic constraints, the organization is able to observe the difference in the types by looking at how fast a country is able and willing to accept the conditions. If a state faces a powerful opposition on the domestic level, it either will not be able to pass the reform process relatively fast or it will be careful to avoid a loss in voter support and thus slow down the reform process. In both cases, a type B state is relatively slower in the reform process than a type A state.

If the costs of \( r \) for \( t_B \) are too high, then type B would either choose a slow reform process or choose no reforms. With the payoffs given, \( c \) has to be greater than 0. Thus, the organization is able to require the speed of acceptance and implementation of conditions \( c \) as screening devices. Then, \( r \) serves to separate the two types because it will not be optimal for a candidate of type B to incur these costs. Therefore, the
organization can correctly infer that a candidate who chooses \( r \) is \( t_A \), and then the organization will respond with the acceptance \( a \), even if the applicant might not have implemented all conditions. The predictability is the explanation of why states are sometimes admitted before they have accepted all reforms. The Bayesian perfect equilibrium would then be \((t_A, r, a)\) and \((t_B, \sim r)\).

I am now able to derive two more hypotheses concerning organizational strategies in the admission process.

**Hypothesis 11: Chapters and Admission**

An international organization admits those applicant countries for a membership that most quickly have accepted the organization’s conditions.

**Hypothesis 12: Domestic Opposition and Admission**

The less power anti-integration parties have within the parliament of the applicant country the more likely it will be admitted to an international organization.

In sum, organizations face certain externalities in the enlargement process. To minimize the costs and protect the integration utility, members implement a certain set of conditions. These conditions are based on the domestic characteristics of outsider states, such as to maximize the political costs of regimes that do not have approximately homogenous institutions. The restrictiveness of conditions depends on the structure of externalities that are connected with the enlargement process. In a second step, old members implement screening devices. Hereby, members assume that the more likely would-be members cheat, the slower is the reform process. Thus, the speed of the acceptance and implementation of conditions serve to differentiate between cheating
and non-cheating states. The next chapter provides a statistical analysis of the derived hypotheses.
CHAPTER 4

ANALYSIS

A HECKMAN-PROBIT SELECTION MODEL

Introduction

The goal of this empirical analysis is the measurement of the relationship between the characteristics of insiders and outsiders and the incentives of an organization to implement an optimal level of admission conditions. The international organization being examined is the European Union. This international organization was chosen because it provides an actual example of an expansion process with the admission of more than one candidate and the resulting optimization problems that members face. Furthermore, whereas the negotiations in other organizations such as the WTO do not take place with all members, but in bilateral bargaining rounds with a weight on single actors like the United States and the European Union, the admission process of the European Union follows the single chapters of the common Acquis and thus allows for more information on organizational preferences as a whole and the variables in question.

The statistical analysis will not include inter-organizational issues. Supranational issues cannot be tested in the same model and including them would be too broad for the purpose of this work. Future research will investigate the issue of inter-organizational differences and test the hypotheses that were developed in the theoretical
part. In this analysis I concentrate on the strategies that members of an expanding organization and “want-to-be” states choose.

Conceptualization and Operationalization

The core of the analysis is the explanation and prediction of the choice of optimal organizational strategies in the admission process. The condition chosen by the member states of the European Union is the acceptance and implementation of the *Acquis Communautaire*. The statistical analysis, then, examines whether this set of conditions is successful in avoiding costly new members.

Thus, the analysis follows a two-stage process. The first dependent step tests the decision for or against a European Union membership application. The second step includes a dependent variable measuring whether the European Union assigned the applicants to wave 1 and wave 2, where wave 1 indicates higher chances of getting accepted to the European Union. The statistical analysis includes all European transition countries in the first step (applicants and non-applicants) and the 10 EU-candidate countries in the second step. Then, the data is collected in a time frame from 1990 to 2000 for applicant and non-applicant countries.

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14 Countries in the first step are Albania, Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, and Ukraine. Excluded are small countries and Asian-European countries. Countries of the second step are the Czech Republic, Estonia, Hungary, Poland, Slovenia, Latvia, Lithuania, Slovakia, Bulgaria, and Romania. Malta and Cyprus are excluded from the sample because they are too small which leads to data problems and Turkey is a special case in the European expansion process. The EU rejected Turkey's request for full membership in 1987. Although the EU regards Turkey as a candidate country and its integration into the EU in the long run, it is not included in the accession negotiations. Furthermore, countries of earlier enlargement waves are not included because of the different accession conditions they faced (Balwin and Brunetti 2001).
Hypotheses

**Hypothesis 1: Regulatory Quality and Application**

The higher the level of regulatory quality within a state, the more likely is an application to an international organization.

**Hypothesis 2: Democracy and Application**

The higher the level of democracy within a state, the more likely the state is to apply to an international organization.

**Hypothesis 3: Democracy and Admission**

The higher the level of democracy within an applicant country, the more likely the state is to apply to an international organization.

**Hypothesis 4: Regulatory Quality and Admission**

The higher the level of regulatory quality within an applicant country, the more likely it will be admitted to the international organization.

**Hypothesis 11: Chapters and Admission**

An international organization admits those applicant countries for a membership that most quickly have accepted the organization’s conditions.

**Hypothesis 12: Domestic Opposition and Admission**

The less power anti-integration parties have within the parliament of the applicant country the more likely it will be admitted to an international organization.

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15 Hypotheses 5-10 are not part of the empirical analysis.
Dependent Variables

**EU Application.** The first dependent variable of interest is a dichotomous variable that indicates whether a state applies for a membership in the European Union (EUAPP). The concept denotes the process of expressing the desire to join an organization by a formal application for membership. It is operationally defined as 1 if a state applies and 0 if not. The data is collected from the European Union homepage for expansion.\(^\text{16}\)

**Admission.** The second dependent variable of interest is a dichotomous variable that measures whether an applicant country is assigned to wave 1 or wave 2 (WAVE1). After the confirmation of the legitimacy of Central and Eastern European applications for membership by the Copenhagen European Council in 1993, the Luxembourg European Council in 1997 suggested that negotiations should begin in March 1998 with the first wave of six countries: Cyprus, the Czech Republic, Estonia, Hungary, Poland and Slovenia. Wave 1 countries were the only applicants considered for early membership. Wave 2 countries, such as Latvia, Lithuania, Slovakia, Bulgaria, and Romania, on the other hand, were not considered for an admission any time soon.\(^\text{17}\) An assignment to wave 2 equals a tentative rejection of these candidates.

Since the European Union has not accepted any of these countries yet, we have no final information of whether the country became a member or not. Thus, the distinction between wave 1 and wave 2 seems to be the most appropriate. It is expected that wave 1 countries will be accepted sooner than wave 2 countries. The goal is to be

\(^{16}\) [http://www.europa.eu.int/pol/enlarg/index_de.htm](http://www.europa.eu.int/pol/enlarg/index_de.htm)

\(^{17}\) See also Maresceau and Lannon (2001) for more detailed information.
able to predict the countries that were actually assigned to these two waves by observing the speed and easiness with which these applicants implemented the reforms. WAVE1 is a dichotomous variable operationally defined as 1 if and at the time countries were assigned to wave 1 and 0 if they were assigned to wave two. All wave 1 countries were assigned in 1997. The data for these variables is also found on the European Union homepage for expansion.

Independent Variables

The main independent variables of interest are the level of regulatory quality, the level of democracy in the first step, the speed of the implementation of reforms, and power of anti-EU oppositions in applicant countries in the second step.

*Regulatory quality.* The quality of regulation (REGQUAL) is measured on nine dimensions, which include large-scale privatization, small-scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system, competition policy, banking reform and interest rate liberalization, securities markets and non-bank financial institutions, and the extensiveness of commercial law. The dimensions are coded from 1 to 4 were 1 denotes very low regulatory quality and 4

---

18 Interestingly, the European Commission, in a recently published strategy paper (2002), stated that accession negotiations with ten applicants, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic and Slovenia, will be concluded by the end of 2002 and suggests an admission for 2004. Therefore, in contrast to the separation in wave 1 and wave 2 countries in 1997, Latvia, Lithuania, and Slovakia were able to pass the negotiations as fast as wave 1 countries and are now considered for early accession. Only Bulgaria and Romania remain in negotiation as wave 2 countries. An admission is not expected until 2007. Unfortunately, we are yet not able to include these differences in our data, because there is no data on the other variables for the year 2002. Future research however, has to account for this difference by recoding the dependent variable from 2002 on.

19 [http://www.europa.eu.int/pol/enlarg/index_de.htm](http://www.europa.eu.int/pol/enlarg/index_de.htm)
denotes the quality typical of advanced industrial economies. An integrated score is computed by taking the mean of these nine dimensions because the dimensions are highly inter-correlated. Furthermore, the coding scheme allows for taking the mean of the observation without inducing biases. The lower the quality of regulation is within a country, the less likely that a country is to make an application to the European Union. The concept is measured in a scale from 1 to 4. Data is derived from the European Bank for Reconstruction and Development. Unfortunately, this data set does not cover Yugoslavia. Thus, Yugoslavia had to be dropped from the dataset. Regarding the war in the 1990’s and scores for other measures, I would not have expected Yugoslavia to apply anytime soon.

Regime type. The concept of democracy (POLITY) denotes a system in which political participation is competitive, executive recruitment is elective, and constraints on the chief executive are substantial. These three dimensions are utilized in the Polity IV dataset. The level of democracy is measured in an additive eleven-point scale (0-10). POLITY, however, accounts also for autocratic types and is computed by subtracting the AUTOC score from the DEMOC score; the resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic). Polity IV seems to be the most appropriate measurement instrument for the regime type.

---

21 Taking the mean might omit differences between countries, which have even scores over the dimensions and countries, which scores are uneven but as a result of taking the mean, end up with the same overall score. However, weighting the different dimensions is very difficult and thus, it seems to be most appropriate to take the mean score of the nine dimensions.
22 The level of autocracy mirrors the measurement of the level of democracy.
23 Polity data was widely criticized for its subjectivity, ethnocentrism and problems with inter-coder reliability. In attempt to overcome the latter critics, the POLITY IV project’s data collection and updating
Due to coding problems, especially of some Central Eastern European countries, which were involved in wars in the 1990’s, some observations had to be excluded. One example is Bosnia, for which the POLITY dataset does not provide data within the range of the POLITY variable. This is due to the fact that Bosnia faced serious transition crises and it was not able to assign Bosnia to a certain polity level. I had to exclude these observations from the dataset.24

Acceptance and speed of reforms / implementation of conditions. The speed of the implementation of reforms in the context of the European Union denotes how fast the applicant countries were able to close the single chapters of the European Union (CHAPTER). Within the European Union it is most appropriate to look at the thirty single chapters of the Acquis Communautaire, which serve as the conditions in the enlargement process. The Acquis Communautaire incorporates all policy areas of the European Union.25 The more chapters a state accumulatively closes, the more likely it

24 This includes Bosnia from 1990-2000; Croatia for 1999; Slovenia, Ukraine, Belarus, Estonia, Georgia, Latvia, Lithuania, Macedonia, Moldova, Croatia, Armenia for 1990; Russia for 1990 and 1991; and Slovakia for 1990 until 1992.

will be assigned to wave 1. The number of closed chapters is counted accumulative for each year. Thus, the variable takes values from 0 to 30. The data is derived from the reports of the European Commission, which are published on a yearly basis with the exact time of closure of the single chapters.26

Power of anti-integration parties. The power of Eurosceptic groups denotes the strength of parties within the domestic system, which are opposed to an admission to the European Union. The concept of Eurosceptic groups is restricted to parties within applicant countries since public opinion data is not available for wave 1 countries until 2001. The Eurobarometer, which covers wave 1 countries does not include wave 2 countries.27 Furthermore, parties are a direct resource in hindering or pushing a government in implementing the basis for an admission and furthermore reflect the public opinion in a not reliable but approximate valid sense.

The information about Euroscepticism is drawn from the “Opposing Europe Research Network” from the Sussex European Institute. This group concentrates on the development of data sets concerning Euroscepticism in Western Europe and the candidate countries.28 All parties within a country are conceptualized as soft Eurosceptic, hard Eurosceptic, or pro European.

Hard Euroscepticism denotes a party where there is a principled opposition to the EU and European integration and therefore can be seen in parties who think that their countries should withdraw from membership, or whose policies

26 The EU publishes regular reports on the progress the candidate countries made, based on the single chapters; see http://europa.eu.int/comm/enlargement/negotiations/chapters/index.htm.
towards the EU are tantamount to being opposed to the whole project of European integration as it is currently conceived.

**Soft Euroscepticism** is where there is not a principled objection to European integration or EU membership but where concerns of one (or a number) of policy areas lead to the expression of qualified opposition to the EU, or where there is a sense that national interest is currently at odds with the EU’s trajectory (Taggart and Szczerbiak 2002: 7).

Based on this information, two variables were derived. The first variable counts the percentage of all votes Eurosceptic parties received for each year (OPP) based on the election results. Data on election results is derived from the Parties-and-Elections-in–Europe homepage.29

A second variable accounts for whether a Eurosceptic party is part of an executive coalition (OPPCOAL). We expect that being part of a government will increase the effect of slowing down the reform process. It should be noted, however, that none of the hardliner parties were represented in government from 1990 until 2002. The variable is operationally defined as 1, if a Eurosceptic party is part of a coalition, 0 if not.30 Data on governmental coalitions is derived from “Zarate’s Political Collection”.31

Unfortunately, data is available for applicant countries only, thus, I cannot include OPP or OPPCOAL as control variables into the first model without changing the whole model because of simultaneity. Instead of explaining the likelihood of whether a country

29 [http://www.parties-and-elections.de/europe.html](http://www.parties-and-elections.de/europe.html)

30 Originally, I had two more variables included in the dataset. These variables accounted for the extent of Euroscepticism and were separated by the percentage of votes by hard and soft Euroscepticism (OPPHARD, OPPOFT). I expected that a high percentage of hardliners in the parliament should lead to a higher probability of cheating as a member of the EU and to a slow down of the reform process in the candidate countries. Including these variables into the model, however, led to collinierity since OPP, OPPHARD, and OPPOFT are highly intercorrelated. Since they do not provide much more information, I excluded them from the model.

31 [http://www.terra.es/personal2/monolith/home.htm](http://www.terra.es/personal2/monolith/home.htm)
applies or not, I would only be able to explain why a country applied later in time but not the fact that some countries did not apply at all.

Control Variables

Some scholars argue that the amount of aid a country receives will influence its push towards regulatory reforms. The control variable in this dataset is overall aid per capita (AIDCAPI). The data is collected from the World Bank Development Indicators.

There are no other economic variables included within the model because the nine dimensions of REGQUAL cover most of the economic parameters and thus are highly correlated with other economic variables.

Statistical Analysis

To empirically test the derived hypotheses, this paper utilizes a Heckman-Probit Selection model. This procedure seems to be most appropriate in capturing the underlying theory since we expect a two-stage process. Furthermore, this method avoids several problems that might occur if two separate probit models would be used, such as heteroscedasticity, and sample selection bias.

The Heckman-Probit Selection model is developed out of the Heckman-Selection model, which was invented in the 1970s (Heckman 1976, 1979) and consists of two stages. Whereas the original Heckman-Selection model utilizes probit in the first and ordinary least squares in the second stage, the Heckman-Probit Selection model consists of probit models in both stages.
The first stage determines whether a state makes it into the sample of the second model. This means that the sample of the second stage is not randomly chosen, but drawn as a subpopulation of the population in the first model. The problem that occurs is that the error term of the first model is correlated with the explanatory variables in the second stage. In the case of the European Union, it occurs that the likelihood of being admitted is dependent upon whether a state applied or not. However, whether a state applies or not depends on the level of democracy and regulatory quality within a country. In this case, the selection mechanism is correlated with the explanatory variables of the second stage. If the model does not account for this selection effect, it might lead to serious sampling bias and thus inconsistent estimates.

To avoid this problem, we can use the Heckman procedure to estimate the expected error in the first stage and include it as an explanatory variable in the second stage. Then, selection bias is avoided, which would have resulted with two separate models. Furthermore, the Heckman model can be estimated in clusters, which are assumed to be independent from each other. However, I do not assume independence within the clusters and thus, control for heteroscedasticity.

Formally, the selection equation in the first stage of the Heckman-Probit Selection model is estimated as

\[
euapp_i^* = z_i^\gamma + \nu_i, \text{where } \begin{cases} 1 & \text{if } \nu_i \geq 0 \\ 0 & \text{otherwise} \end{cases}
\]

(17)

where \(z_i^\gamma\) denotes the vector of variables in the first stage and \(\nu_i\) is the error term of the first model.\(^{32}\)

\(^{32}\) The vector \(z_i^\gamma\) in this analysis denotes the variables REGQUAL, POLITY, and AIDCAPI.
The second stage of the Heckman-Probit Selection model is estimated as

\[ \text{wave}^{*}_{it} = x_{it}' \beta + \varepsilon_{it}, \text{ where } \text{wave}^{*}_{it} \begin{cases} \text{wave}^{*}_{it} & \text{euapp}_{it} > 0 \\ 0 & \text{otherwise} \end{cases} \] (18)

where \( \text{wave}^{*}_{it} \) denotes the underlying latent probability function and \( x_{it}' \beta \) the vector of variables in the second stage.\(^{33}\) The model itself is estimated as the expected value of the error given that the equation in the first stage is greater than 0, which means that the state applied for EU membership (see Appendix A and B).

Table 4.1 presents summary statistics including basic information of the relevant variables.

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<th>Observation</th>
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<td>25.528</td>
<td>-23.84</td>
<td>144.18</td>
</tr>
<tr>
<td>Opp(^a)</td>
<td>80</td>
<td>26.19</td>
<td>20.321</td>
<td>0</td>
<td>62.4</td>
</tr>
<tr>
<td>oppcoali(^a)</td>
<td>80</td>
<td>0.313</td>
<td>0.466</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Chapter(^a)</td>
<td>80</td>
<td>7.8</td>
<td>9.91</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Wave1(^a)</td>
<td>80</td>
<td>0.375</td>
<td>0.487</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Wave2(^a)</td>
<td>80</td>
<td>0.4125</td>
<td>0.495</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^a\) Information on these variables concerns only observations for which EUAPP takes 1

---

\(^{33}\) The vector \( x_{it}' \beta \) in this case denotes the variables CHAPTER, OPP, OPPCOAL, REGQUAL, and POLITY.
In calculating the Heckman-Probit Selection model, both a cluster analysis and the Huber-White Sandwich estimator were utilized. Clustering the different countries helps to control for heteroscedasticity across clusters. Heteroscedasticity in this model might be caused by the panel structure of the data. The results of the Heckman-Probit Selection model are presented in table 4.2. Model 1 is the baseline model; models 2 and 3 test the robustness of results. Model 4 is a different estimation, excluding the control for interdependence within the different clusters. The selection model eliminates 124 from 184 observations. Thus, the sample for the second stage consists of 60 observations.
Table 4.2: Heckman-Probit Selection Model for the Likelihood of an EU Admission

2. Stage: Wave1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter</td>
<td>0.10***</td>
<td>0.10**</td>
<td>0.12***</td>
<td>0.10***</td>
</tr>
<tr>
<td></td>
<td>(0.037)</td>
<td>(0.042)</td>
<td>(0.0267)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>Opp</td>
<td>0.02</td>
<td>0.02*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.011)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppcoal</td>
<td>-1.10***</td>
<td>-0.73**</td>
<td>-1.10***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.288)</td>
<td>(0.295)</td>
<td>(0.261)</td>
<td></td>
</tr>
<tr>
<td>Regqual</td>
<td>-0.22</td>
<td>0.009</td>
<td>0.17</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>(0.502)</td>
<td>(0.094)</td>
<td>(0.293)</td>
<td>(0.453)</td>
</tr>
<tr>
<td>Polity</td>
<td>0.302</td>
<td>-0.098</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.159)</td>
<td>(1.63)</td>
<td>(0.152)</td>
<td></td>
</tr>
</tbody>
</table>

1. Stage: euapp

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regqual</td>
<td>2.13***</td>
<td>2.13***</td>
<td>2.13***</td>
<td>2.13***</td>
</tr>
<tr>
<td></td>
<td>(0.389)</td>
<td>(0.389)</td>
<td>(0.389)</td>
<td>(0.389)</td>
</tr>
<tr>
<td>Polity</td>
<td>0.21***</td>
<td>0.21***</td>
<td>0.21***</td>
<td>0.21***</td>
</tr>
<tr>
<td></td>
<td>(0.206)</td>
<td>(0.206)</td>
<td>(0.206)</td>
<td>(0.206)</td>
</tr>
<tr>
<td>Aidcapi</td>
<td>0.0008</td>
<td>0.0008</td>
<td>0.0008</td>
<td>0.0008</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.94***</td>
<td>-7.94***</td>
<td>-7.94***</td>
<td>-7.94***</td>
</tr>
<tr>
<td></td>
<td>(1.12)</td>
<td>(1.12)</td>
<td>(1.12)</td>
<td>(1.12)</td>
</tr>
</tbody>
</table>

N (Uncensored N) | 184 (60) | 184 (60) | 184 (60) | 184 (60) |
Wald chi2 (Prob > chi2) | 671.143 (0.0000) | 2.95e+07 (0.0000) | 25.01 (0.0000) | 417.69 (0.0000) |
p | -1 (1.83e-07) |
Wald (rho=0),(Prob>chi2) | 0.03 (0.8676) | 2.35 (0.1250) | 0.00 (0.9705) | 14.31 (0.0002) |
LR chi2 (Prob > chi2) | 123.13 (0.0000) | 123.13 (0.0000) | 123.13 (0.0000) | 123.13 (0.0000) |
Log likelihood | -72.206 | -74.0367 | -75.907 | -72.206 |

*= significant on the .1 - level; ** = significant on the .05 – level; ***= significant on the .01-level
Note that the estimated standard errors are displayed in the round brackets and the marginal effects in the squared brackets. The model fits the data reasonably well. Both the likelihood ratio test and the Wald test are highly significant. This means I am able to reject the null that all coefficients are jointly equal to zero.\textsuperscript{34}

Having argued that the results strongly support the theory, there might be some problems concerning the superiority of the Heckman-Selection model. In table 4.2 I fail to reject the second Wald test, which tests whether rho equals zero. Rho is the selection mechanism, as the error term of the second variable, which was included into the second stage as an explanatory variable. Failing to reject the null hypothesis that rho is zero would indicate that using two separated models is more appropriate since the error of the selection model does not seem to be correlated with the dependent variables of the second stage. On the other hand, theoretically I expect to have a two-stage model. Also, model 2 comes close to significance and in model 4 the null hypothesis is rejected on the 0.0002 level. Furthermore, regarding the fact that REGQUAL and POLITY become insignificant on the second level gives a hint that the model should account for two interrelated stages.\textsuperscript{35} Appendix C conducts further tests and provides an in-depth discussion of this problem. Based on the results of the examination in Appendix C and

\textsuperscript{34} The likelihood ratio test tests the null hypothesis that all coefficients in the first stage are jointly zero, whereas the Wald test equals the likelihood ratio test for the whole model.

\textsuperscript{35} These results are very puzzling regarding whether the Heckman model or two independent probit models are more appropriate. The trade off is that by falsely using the Heckman model, I would create a type 1 error. Then, even if the estimator were consistent, it would be inefficient. On the other hand, a type 2 error could be created if I would fail to reject the null hypothesis and use two probit models. This might lead to serious selection biases. These problems require a thorough examination of the Heckman model compared to the two independent probit models. In Appendix C, I therefore present the results of two independent probit models and conduct further tests regarding the efficiency of standard errors and a chi square likelihood ratio test of the log likelihoods of the Heckman model and the nested probit models. Finally, there is not a completely satisfying answer since we do not know the true model. I would be required to develop Monte Carlo simulations. The choice of either one model depends on the properties one prefers. However, the results of the tests, which are conducted in Appendix C, and the theoretical arguments, lean towards the Heckman model, which is presented in this empirical analysis.
strong theoretical arguments, this empirical analysis concentrates on the discussion of
the Heckman-Probit Selection model.

In the first stage, the level of regulatory quality and democracy enhance the
likelihood of an EU application. A one unit increase above the mean of regulatory quality
of a country will increase the probability of an application by 0.4 holding all other
variables at their mean. If POLITY increases by one unit above the mean, the probability
of EUAPP increases by 0.04. Both are highly significant. The marginal effect of
REGQUAL, however, is ten times bigger. Aid per capita is not significant in any of the
models. In sum, these results strongly support the Regulatory Quality and Application
and the Democracy and Application hypotheses that the more democratic a country is
and less market distortions it has, the more likely it is to make an application.

In the second stage, the empirical tests find that the faster a country accepts the
conditions of the Acquis Communautaire, the more likely it will be considered as a wave
1 country. Closing one more chapter above the mean increases the probability of
admission to wave 1 by 0.4 holding all other variables at their mean. Thus, I find strong
support for the Chapter and Admission hypothesis. These results are robust over the
models.

If Eurosceptic parties are present as coalition partners in government, this will
significantly decrease the likelihood of being considered as wave 1 country by the
probability of 0.44. The Opposition and Admission hypothesis refers to the argument that
if there are strong opposition groups in a country the likelihood of reversing integration
friendly policies will be high and thus, the likelihood that a country will cheat within the
organization increases.
However, there is a difference in whether there are Eurosceptic parties in the government or in the parliament. OPP is positively correlated with WAVE1 but it is not significantly different from zero except in model 4. In model 4, the rejection of the null hypothesis for OPP, however, is significant on the 0.10 - significance level only. This is not very convincing regarding that OPP was not significantly different from zero in all other models. Since anti-European parties have an influence on reforms if they are represented in government and these parties are also part of the parliament, I still find strong support for the Opposition and Admission hypothesis.

The level of regulatory quality and polity are not significantly different from zero. This gives some indication that utilizing the Heckman-Probit Selection model is most appropriate for testing the hypotheses. Crucial are the differences between this model and the two separated probit models, which are presented and discussed in Appendix C. I did not expect significance here since $\tilde{\varepsilon}_i$, the error term from the first stage, already accounts for part of this in the second stage.

In sum, the model provides strong support for the theory. The European Union is in fact able to select states based on the two strategies used. An application is too costly for states with relatively low economical and political performance. Thus, only some countries apply for a membership in the European Union.\textsuperscript{36} Furthermore, based on anti-European opposition in the domestic arena, countries have different likelihoods to cheat. Thus, the European Union successfully separates the different types by looking at the speed with which countries accept and implement the various conditions.

\textsuperscript{36} In fact, Turkey is the only real outlier in this scenario. The conditions did not hinder Turkey from applying for a membership. The European Union’s strategy, now, is to delay negotiation talks until Turkey reaches an appropriate level of economic and political development.
The classification tables also support the model. Table 4.3 presents the predicted versus the true probabilities for EU applications.

Table 4.3: Prediction of EU Applications—Heckman Model

<table>
<thead>
<tr>
<th></th>
<th>Predicted</th>
<th>True</th>
<th>0</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>1</td>
<td>46</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>9</td>
<td>115</td>
<td></td>
<td>124</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>129</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>% correct</td>
<td>83.6</td>
<td>89.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctly predicted</td>
<td></td>
<td>87.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In 83.6% of the cases we predicted correctly that countries did apply, in 89.2% of the cases we correctly predicted the absence of an application. Overall 87.5% of the cases were correctly predicted. The table shows that the prediction error lies especially in the cases that were predicted not to apply but actually did apply. To shed more light on that, table 4.4 illustrates the predicted versus actual dates of application.
Table 4.4: Predicted Versus True Dates of EU Applications

<table>
<thead>
<tr>
<th>Country</th>
<th>Date Predicted</th>
<th>True date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Armenia</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Belarus</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>No</td>
<td>1995</td>
</tr>
<tr>
<td>Croatia</td>
<td>2000</td>
<td>No</td>
</tr>
<tr>
<td>Czech</td>
<td>1993</td>
<td>1996</td>
</tr>
<tr>
<td>Estonia</td>
<td>1995</td>
<td>1995</td>
</tr>
<tr>
<td>Georgia</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hungary</td>
<td>1992</td>
<td>1994</td>
</tr>
<tr>
<td>Latvia</td>
<td>1996</td>
<td>1995</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1996</td>
<td>1995</td>
</tr>
<tr>
<td>Macedonia</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Moldova</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Poland</td>
<td>1993</td>
<td>1994</td>
</tr>
<tr>
<td>Romania</td>
<td>No</td>
<td>1995</td>
</tr>
<tr>
<td>Russia</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Slovakia</td>
<td>1994</td>
<td>1995</td>
</tr>
<tr>
<td>Slovenia</td>
<td>1995</td>
<td>1996</td>
</tr>
<tr>
<td>Ukraine</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 4.4 displays some very interesting results. First both, Romania and Bulgaria were not predicted to apply for a membership. As noted above, the European Commission recently commented on the admission of applicant countries. Whereas all other applicants are now expected to enter in 2004, only Bulgaria and Romania are considered as wave 2 countries. This is another theoretical indication that the two stages are interrelated. Whereas Bulgaria and Romania accepted the costs to apply, they are more likely moral hazards. Bulgaria, for example was not able to close any chapters until 2000 - much later than many other applicant countries. The same holds true for Romania. Both countries are still not considered for a membership earlier than 2007.

Furthermore, most of the countries that were predicted to apply earlier than they actually did are states that experienced transition crises and civil wars in this period. Croatia, for example, was predicted to apply but never did. This leads me to infer that we
have some omitted variable bias within our model. I am missing a variable that accounts for transition crises within a country or within a region. This shortcoming is important to address in order to improve the model. Thus, I include a variable that accounts for the time passed after the last crisis. The results are presented in table 4.5.37

37 Please note that I do not provide two separated probits in this case since the probit of the first stage is similar to a separated probit model. The first stage, however, is the one in question. Again, if we do not control for cluster, the Wald test for rho is significantly different from zero on the 0.004 level.
Table 4.5: Heckman-Probit Selection Model Controlling for Transition Crises

<table>
<thead>
<tr>
<th>2. Stage: Wave1 Model</th>
<th>1. Stage: Euapp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter</strong></td>
<td>0.08**</td>
</tr>
<tr>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td></td>
<td>[0.03]</td>
</tr>
<tr>
<td><strong>Opp</strong></td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(0.0085)</td>
</tr>
<tr>
<td></td>
<td>[0.003]</td>
</tr>
<tr>
<td><strong>Oppcoal</strong></td>
<td>-1.06*</td>
</tr>
<tr>
<td></td>
<td>(0.65)</td>
</tr>
<tr>
<td></td>
<td>[-0.42]</td>
</tr>
<tr>
<td><strong>Regqual</strong></td>
<td>1.02*</td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
</tr>
<tr>
<td></td>
<td>[0.34]</td>
</tr>
<tr>
<td><strong>Polity</strong></td>
<td>0.20***</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
</tr>
<tr>
<td></td>
<td>[0.09]</td>
</tr>
<tr>
<td><strong>Aidcapi</strong></td>
<td>-0.011**</td>
</tr>
<tr>
<td></td>
<td>(0.0052)</td>
</tr>
<tr>
<td></td>
<td>[-0.006]</td>
</tr>
<tr>
<td><strong>Pastcris</strong></td>
<td>0.5***</td>
</tr>
<tr>
<td></td>
<td>(0.095)</td>
</tr>
<tr>
<td></td>
<td>[0.22]</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-5.79***</td>
</tr>
<tr>
<td></td>
<td>(1.33)</td>
</tr>
</tbody>
</table>

| N (Uncensored N) | 143 (60) |
| Wald chi² (Prob > chi²) | 9.00 (0.0294) |
| rho | -1 (0) |
| Wald test rho=0; (Prob > chi²) | 0.20 (0.6586) |
| LR chi² (Prob > chi²) | 130.93 (0.0000) |
| Log likelihood | -56.616 |

*= significant on the .1 - level; ** = significant on the .05 – level; ***= significant on the .01-level
Note that the standard errors are presented in the round brackets and the marginal effects are displayed in the squared bracket. Table 4.5 shows immediately the high significance of PASTCRIS. REGQUAL and POLITY stay robust, whereas AIDCAPI becomes significantly negative. This implies that the more aid per capita a country receives the less likely is an application for a membership in the European Union. Theoretically, this makes sense, since I accounted not only for European Union aid, but for aid overall. Then, it seems plausible, that the more aid a country receives, the less developed it is. This should decrease the likelihood of an application. The variables in the second stage stay robust. The Wald test that all coefficients are jointly zero is significant on the 0.03 level. The log likelihood ratio test that all coefficients of the first stage are jointly zero is also easily rejected.

The predicted application dates are included and compared to the one estimated without including PASTCRIS in table 4.6.

---

38 Data was kindly provided by Walter Mattli and Thomas Plümper.
Table 4.6: Predicted Versus True Dates of EU Applications Controlling for Transition Crises

<table>
<thead>
<tr>
<th>Country</th>
<th>Date Predicted</th>
<th>Date Predicted (crisis)</th>
<th>True date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Armenia</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Belarus</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>No</td>
<td>1997</td>
<td>1995</td>
</tr>
<tr>
<td>Croatia</td>
<td>2000</td>
<td>2000</td>
<td>No</td>
</tr>
<tr>
<td>Estonia</td>
<td>1995</td>
<td>1997</td>
<td>1995</td>
</tr>
<tr>
<td>Georgia</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Latvia</td>
<td>1996</td>
<td>1996</td>
<td>1995</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1996</td>
<td>1997</td>
<td>1995</td>
</tr>
<tr>
<td>Macedonia</td>
<td>No</td>
<td>1998</td>
<td>No</td>
</tr>
<tr>
<td>Moldova</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Poland</td>
<td>1993</td>
<td>1994</td>
<td>1994</td>
</tr>
<tr>
<td>Romania</td>
<td>No</td>
<td>1996</td>
<td>1995</td>
</tr>
<tr>
<td>Russia</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Ukraine</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Whereas the predictions for Estonia, Macedonia, Lithuania, and Slovenia got worse, we improved the predictions for Slovakia, Romania, Poland, the Czech Republic,

Table 4.7: Prediction of EU Applications (Including Transition Crises)

<table>
<thead>
<tr>
<th>Predicted</th>
<th>True</th>
<th>1</th>
<th>0</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>51</td>
<td>9</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>7</td>
<td>76</td>
<td>83</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>85</td>
<td>143</td>
<td></td>
</tr>
<tr>
<td>% correct</td>
<td>87.9</td>
<td>89.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctly predicted</td>
<td>88.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

39 The continuous predicted values can be found in Appendix D and E.
and Bulgaria. Including PASTCRIS does not cause a huge change in the coefficients in the second stage and should be included to avoid omitted variable bias in the first stage. Overall we correctly predicted 88.8% of case. This improves the prediction by 1.3%.

Table 4.8 presents the predicted versus the true probabilities for the likelihood of being assigned to wave 1.40

<table>
<thead>
<tr>
<th>Predicted</th>
<th>True</th>
<th>1</th>
<th>0</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>6</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>83</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>89</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>% correct</td>
<td>71.4</td>
<td>93.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Correctly predicted 89.1%

In 71.4% of the cases the model correctly predicted that an observation becomes 1, in 93.3% it correctly predicted that an observation did not take the value 1. Overall the model correctly predicted 89.1% of the cases. Table 4.9 incorporates the predicted dates versus the actual dates when countries were assigned to wave 1 or 2.

40 Note, that the predicted values in this table are derived from the Heckman-Selection model in Table 4.2, which excludes PASTCRIS.
Table 4.9: Predicted Versus True Dates of Assignment to Wave1

<table>
<thead>
<tr>
<th>Country</th>
<th>Date Predicted</th>
<th>True date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>2000</td>
<td>No</td>
</tr>
<tr>
<td>Czech</td>
<td>1998</td>
<td>1997</td>
</tr>
<tr>
<td>Estonia</td>
<td>1997</td>
<td>1997</td>
</tr>
<tr>
<td>Hungary</td>
<td>1999</td>
<td>1997</td>
</tr>
<tr>
<td>Lithuania</td>
<td>No</td>
<td>No (2002)</td>
</tr>
<tr>
<td>Poland</td>
<td>1997</td>
<td>1997</td>
</tr>
<tr>
<td>Romania</td>
<td>2000</td>
<td>No</td>
</tr>
<tr>
<td>Slovenia</td>
<td>1999</td>
<td>1997</td>
</tr>
</tbody>
</table>

In table 4.9 it is obvious that the crucially false predicted cases are again Bulgaria and Romania. The underlying continuous predicted probability in Bulgaria's case in 2000 increases dramatically from 0.34 to 0.64 (see Appendix F). This is due to the fact that Bulgaria's scores for CHAPTER increase from zero to eight, while all other scores were already high. Exactly the same phenomenon can be found by regarding the Romanian case. Slovakia and Poland were assigned to the first wave in 2002. The predicted values give some indications. All others are correctly predicted or the dates are not far apart from each other.

Summary

The analysis went through several statistical methods to test the hypotheses in question. The decision to use the Heckman-Selection model or two probit models is a highly econometric one. I presented both methods in this section and conducted several tests to find support for one or the other model. The tests are contrary and finally we are required to trade off one possible problem with another. Using the Heckman model might lead to a type 1 error and inefficiency, using the independent probit models might lead to a type 2 error and selection bias.

41 The continuous predicted values are found in Appendix F.
Over both models, however, the results indicate strong support for the theory. We are able to reject the null hypotheses for the *Regulatory quality and Application* and the *Democracy and Application* hypotheses in the first stage and the *Chapter and Admission* and *Opposition and Admission* hypotheses in the second stage. The *Regulatory Quality and Admission* hypothesis is supported in both models. The Heckman model includes these variables indirectly using the error term of the first stage as explanatory variable in the second stage. We fail to reject the direct effect in the Heckman model but reject the null hypotheses in the probit model. The *Democracy and Admission* hypothesis is not supported by the data in both models. Furthermore, including a variable that accounts for transition crises improves the fit of the model.

In the end, all models supported my theory fairly well. Members of international organizations do not arbitrarily set conditions, but deal rather with the uncertainty they are faced in the enlargement process by utilizing known characteristics of outsider countries to find the best strategies in setting the conditions and requiring screening devices.
CHAPTER 6

CONCLUSION AND
RECOMMENDATIONS FOR FUTURE RESEARCH

The increasing interdependence in international politics became a crucially important issue in the last decades. In particular the opening of the economies in East Asia and the collapse of the Soviet Union led to a reshaping and restructuring of the international political arena. One part of this is the integration of these countries into the international community and thus, into international organizations.

Many scholars in this field devoted their studies to these processes and attempted to explain the causes, reasons and implications of these integrational processes. This study was conducted to further increase the understanding of these issues by utilizing different approaches compared to the mainstream approaches that were developed. The goal was to understand as of which strategies and actions are involved in the organizational expansion process. Ultimately, why do organizations implement certain conditions and why do some countries face the incentive to join an international organization while others do not?

The approach utilized was one that combined different fields and different methods. By combining political science with economics approaches it was possible to achieve different perspectives and develop a theory, which was conducted on different level of analysis. Concentrating on the state and organizational level the utilization of the game-theoretical approach allowed examinations at the individual level if necessary.
Thus the explanations reached are farther reaching than previous explanations that have been provided in this field.

Furthermore, it was possible to derive testable hypothesis from the general theory and to apply these hypotheses to a thorough statistical analysis. The results of both, the Heckman-Probit Selection model and the independent probit models strongly support the implications of the theory. It is important, however, to further investigate into the problems that occur with the decision of which model is more appropriate. Future work should run Monte-Carlo simulations that through the simulation of data, make a comparison of both models to a true model possible.

The conclusion which can be drawn is that organizations do not arbitrarily implement sets of admission conditions. Conditions are carefully chosen and depend not only on organizational features, but also on characteristics of want-to-be members. Organizational members face the incentive and necessity to exclude a certain set of states from application or admission. Since the underlying factors causing a state to be costly or beneficiary for an organization are not completely known, members have to choose a way to measure these characteristics indirectly. Conditions serve exactly this purpose. This also solves the puzzle as to why some states are admitted even if their economic and political status would not lead one to expect an admission. If they are able to signal the organization that they are able and willing to accept the given conditions by fulfilling the requirements easily in a short amount of time, the organization has indicators that this state is not a moral hazard for the promotion of the integration utility. As we have seen within the European Union enlargement process, the organization is now willing to accept more states in 2004 than were expected to enter a few years ago.
As found with the statistical analysis, these four states were able to implement the Aquis Communautaire as easily and quickly as the other wave 1 states.

Further research, however, should utilize these results to widen the population, which is being observed to improve the external validity achieved in this respect. Whereas this work concentrated on an analysis of the European Union enlargement to the Central Eastern European countries, there exist several goals for future research. First, the same analysis should be conducted using different organizations further applied by appropriate case and comparative studies. This means that a multiple methods approach is desired, which reduces the drawbacks of each approach and allows generally for a better understanding of the process of enlargement. Furthermore, a first step has to be taken in the empirical analysis of enlargement processes across organizations. The theoretical foundations are already developed in this work. The empirical work should be developed in future research.

Regarding these goals, this work provides a first step to build up a more generalizable theory of organizational expansion by combining the different puzzle pieces that are already present in this field.

Ultimately, I arrived at a point at which one can see that it is not enough to derive explanations or even predictions by just looking on one level of analysis but rather understand the complexities of international politics by combining the different levels, approaches and methods. Domestic politics and international or supranational actions go hand in hand and may not be separated.
APPENDIX A

ESTIMATION OF THE HECKMAN-PROBIT-SELECTION MODEL
\[
E[\text{wave}_u|\text{eapp}_u^*>0] = x_u' \beta + E[\varepsilon_u|\text{eapp}_u^*>-z_u' \gamma]
\]

\[
\varepsilon_u = \frac{\sigma_{\text{wave}}}{\sigma_{\text{eapp}}} \nu_u + \xi_u, \text{ where } \xi_u \sim N(0, V[\xi_u]); \quad E[\nu_u, \xi_u] = 0
\]

\[
\Rightarrow E[\text{wave}_u|\text{eapp}_u^*>0] = x_u' \beta + \frac{\sigma_{\text{wave}}}{\sigma_{\text{eapp}}} E\left[\frac{\nu_u}{\sigma_u} \bigg| \frac{\nu_u}{\sigma_u} > -\frac{z_u' \gamma}{\sigma_u} \right], \text{ with } -\frac{z_u' \gamma}{\sigma_u} \equiv \text{Mills Ratio}
\]

\[
= x_u' \beta + \frac{\sigma_{\text{wave}}}{\sigma_{\text{eapp}}} \left( -z_u' \frac{\gamma}{\sigma_u} \right)
\]

\[
E[|x| > c] = \mu + \sigma \frac{\varphi(\alpha)}{1 - \Phi(\alpha)}, \quad \text{where } \alpha = \frac{c - \mu}{\sigma}
\]

where \( \varphi \) is the probability density function and \( \Phi \) the conditional density function. The Mills ratio is a monotone decreasing function of the probability that an observation is selected into the sample and thus, utilized to calculate the estimated error term in the first stage, which will be included as explanatory variable in the second stage.

Then, I am able to estimate the regression model:

Assume \( \sigma_{\text{eapp}} = 1 \)

\[
E[\text{wave}_u|\text{eapp}_u^*>0] = x_u' \beta + \sigma_{\text{eapp}} \hat{\lambda}_u + \omega_u, \quad \text{where } \omega_u = \sigma_{\text{eapp}} (\hat{\lambda}_u - \hat{\lambda}_u)
\]

\[
\Rightarrow \text{wave}_u = x_u' \beta + \sigma_{\text{eapp}} \hat{\lambda}_u + \omega_u + \nu_u, \quad \text{where } \nu_u = \text{wave}_u - E[\text{wave}_u|\text{eapp}_u^*>0]
\]

\[
= x_u' \beta + \sigma_{\text{eapp}} \hat{\lambda}_u + \tilde{\nu}_u, \quad \text{where } \tilde{\nu}_u = \omega_u + \nu_u
\]

This means, I first estimate \( \tilde{\nu}_u \) (error term in the second stage) by using a probit model in \( \text{eapp}_u = z_u' \gamma + \nu_u \) on the overall sample. Second, I compute \( \hat{\lambda}_u = \frac{\varphi(z_u' \hat{\gamma})}{1 - \Phi(z_u' \hat{\gamma})} \), which is the probability distribution of the Mills ratio and finally I estimate model with \( \hat{\lambda}_u \) as additional regressor on the sample with \( \text{eapp}_u = 1 \) in a probit model. Note that the selection equation has to include at least one regressor \( z_u \) that is not a part of \( x_u \) and it
should include a constant. The second equation, however, does not need to include a constant.
APPENDIX B

GENERAL DERIVATION OF THE PROBIT MAXIMUM LIKELIHOOD ESTIMATOR
\[ \Pr[y_u = 1] = \Pr[y_u^* \geq 0] = \Pr[x_u' \beta + \varepsilon_u \geq 0] = \Pr[\varepsilon_u \geq -x_u' \beta] \\
= \Pr \left[ \frac{\varepsilon_u}{\sigma_\varepsilon} \geq -\frac{x_u'}{\sigma_\varepsilon} \alpha \right], \quad \text{where} \quad \alpha = \frac{\beta}{\sigma_\varepsilon} \\
= 1 - \Pr \left[ \frac{\varepsilon_u}{\sigma_\varepsilon} < -\frac{x_u'}{\sigma_\varepsilon} \alpha \right] = 1 - \Phi \left[ -x_u' \alpha \right] = \Phi \left[ x_u' \alpha \right], \quad \text{where} \quad \Phi \text{ is the conditional density function of the} \ N(0,1) \text{ random variable} \frac{\varepsilon_u}{\sigma_\varepsilon} = \tilde{\varepsilon}_u. \\
\]

Note: \( \Phi(a) = \int_{-\infty}^{a} \phi(\tilde{\varepsilon}_u) d\tilde{\varepsilon}_u = \Pr[\tilde{\varepsilon} < a] \), where \( \phi(\tilde{\varepsilon}) \) is the probability density function of the standard normal: \( \phi(\tilde{\varepsilon}) = \frac{1}{\sqrt{2\pi}} \exp \left\{ -\frac{1}{2} \tilde{\varepsilon}^2 \right\} \)

MLE:
\[
L(\alpha) = \prod_u \Pr[y_u = 0]^{1-y_u} \cdot \Pr[y_u = 1]^{y_u} = \prod_u \left[ 1 - \Phi(x_u' \alpha) \right]^{1-y_u} \cdot \Phi(x_u' \alpha)^{y_u} \\
\ln L(\alpha) = \sum_u (1 - y_u) \ln(1 - \Phi(x_u' \alpha)) + y_u \ln \Phi(x_u' \alpha)
\]

were \( y_u \) denotes EUAPP in the first and WAVE1 in the second stage.
APPENDIX C
HECKMAN-PROBIT-SELECTION MODEL VERSUS
INDEPENDENT PROBIT MODELS
The results of the Wald test that the two stages are independent are very puzzling regarding whether the Heckman model or two independent probit models are more appropriate. The trade off is that by using the Heckman model if it is not necessary, I would create a type 1 error. Then, even if the estimator is consistent, it would be inefficient. On the other hand, a type 2 error could be created if I would fail to reject the null hypothesis and use two probit models.\textsuperscript{42} This might lead to serious selection biases. To get a better impression the model is calculated again without including a selection equation.

Table A.1: Probit Model for the Likelihood of an EU Application\textsuperscript{43}

<table>
<thead>
<tr>
<th>Dep var: euapp</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regqual</td>
<td>2.12***</td>
<td>2.59***</td>
<td>2.13***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.388)</td>
<td>(0.38)</td>
<td>(0.38)</td>
<td></td>
</tr>
<tr>
<td>Polity</td>
<td>0.21***</td>
<td>0.45***</td>
<td>0.20***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.077)</td>
<td>(0.069)</td>
<td>(0.075)</td>
<td></td>
</tr>
<tr>
<td>Aidcapi</td>
<td>0.008</td>
<td>0.01**</td>
<td>-0.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.005)</td>
<td>(0.0056)</td>
<td></td>
</tr>
<tr>
<td>Const</td>
<td>-7.94</td>
<td>-4.05***</td>
<td>-7.71***</td>
<td>-7.91***</td>
</tr>
<tr>
<td></td>
<td>(1.12)</td>
<td>(0.607)</td>
<td>(1.13)</td>
<td>(1.098)</td>
</tr>
<tr>
<td>N</td>
<td>184</td>
<td>184</td>
<td>184</td>
<td>192</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.5299</td>
<td>0.2842</td>
<td>0.5420</td>
<td>0.5420</td>
</tr>
<tr>
<td>LR chi2</td>
<td>123.13</td>
<td>66.03</td>
<td>129.26</td>
<td>129.25</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-54.608</td>
<td>-83.159</td>
<td>-54.618</td>
<td>-54.618</td>
</tr>
</tbody>
</table>

\textsuperscript{42} Unfortunately, there is very little work on Heckman-Selection models. Some discussion is provided in Kennedy (1998), Greene (1997), and the Stata 7 Manual.

\textsuperscript{43} Note, that the results presented in figure 4.3 are the same results presented in the Heckman-Probit Selection model since the first stage of the Heckman model is just a probit model. The results are displayed for the convenience of the reader and to illustrate the robustness of the model if we exclude different variables.
<table>
<thead>
<tr>
<th>Dep var.: Wave1</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter</td>
<td>0.12*</td>
<td>0.04***</td>
<td>0.13**</td>
<td>0.05*</td>
</tr>
<tr>
<td></td>
<td>(0.068)</td>
<td>(0.016)</td>
<td>(0.59)</td>
<td>(0.028)</td>
</tr>
<tr>
<td>Opp</td>
<td>0.01</td>
<td>0.038***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppcoal</td>
<td>-1.72**</td>
<td>-1.15**</td>
<td>-1.44***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.8)</td>
<td>(0.45)</td>
<td>(0.56)</td>
<td></td>
</tr>
<tr>
<td>Regqual</td>
<td>5.43**</td>
<td>5.54***</td>
<td>7.21***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.19)</td>
<td>(1.68)</td>
<td>(1.64)</td>
<td></td>
</tr>
<tr>
<td>Polity</td>
<td>0.15</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.257)</td>
<td>(0.17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-19.98***</td>
<td>-1.44***</td>
<td>-19.42***</td>
<td>-24.24***</td>
</tr>
<tr>
<td></td>
<td>(6.378)</td>
<td>(0.328)</td>
<td>(5.69)</td>
<td>(5.51)</td>
</tr>
<tr>
<td>N</td>
<td>60</td>
<td>80</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-13.937</td>
<td>-39.060</td>
<td>-17.584</td>
<td>-17.49</td>
</tr>
<tr>
<td>LR chi2</td>
<td>48.51</td>
<td>27.73</td>
<td>41.21</td>
<td>56.27</td>
</tr>
<tr>
<td>Prob&gt;chi2</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.6351</td>
<td>0.2620</td>
<td>0.5396</td>
<td>0.6167</td>
</tr>
</tbody>
</table>

*= significant on the .1 - level; ** = significant on the .05 – level; ***= significant on the .01-level

We can see immediately that the Heckman-Probit Selection model and the two probit models produce almost similar results. However, comparing the second probit model to the second stage in the Heckman-Selection model, REGQUAL is highly significant in the second probit model. A one-unit increase above the mean in regulatory quality increases the chances of application by 1.11. In contrast to this large marginal effect in the probit model, REGQUAL was not significant in the Heckman-Selection model. Furthermore, the marginal effect of the main independent variables, CHAPTER and OPPCOAL, decrease by over 100% for chapter and 50% for OPPCOAL.

Regarding the second stage, POLITY is neither significant in the probit, nor in the Heckman model. This might result from the fact that there is basically no variation in POLITY after 1997. All countries have more or less stable democratic regimes, which
excludes the level of democracy as a significant indicator for the likelihood of an assignment to wave 1.\footnote{Note also, that the average in the variable is 6.17 in a range from -10 and 10.}

These results suggest that I might be able to minimize selection bias, which is present in the probit model by including the error term of the selection model into the second stage. The predicted probabilities for both models are generated in table A.3.

<table>
<thead>
<tr>
<th>Predict. V.</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heckman</strong></td>
<td>120</td>
<td>0.279</td>
<td>0.367</td>
<td>6.29e-28</td>
<td>0.999</td>
</tr>
<tr>
<td><strong>Probit</strong></td>
<td>119</td>
<td>0.217</td>
<td>0.349</td>
<td>0</td>
<td>0.996</td>
</tr>
</tbody>
</table>

The table illustrates that ignoring the selection mechanism results in predicted values that are lower than the predicted values for the Heckman model. Since I do not have the true model, unfortunately, I am not able to compare these results with the true predicted values. Still, it gives a hint of what differences we expect by using one or the other method.

Another way of testing which model is more appropriate and thus of avoiding both, type 1 and type 2 error is to utilize a chi square test of the null hypothesis that the independent probit models are true. We do this by comparing the log likelihoods of the Heckman model to the nested ones of the independent probit models for the baseline model (model 1 in all three tables). The log likelihood of the Heckman model is -72.206, the log likelihood of the nested probit models is -68.55.\footnote{The nested log likelihood is the sum of the log likelihoods of the two independent probit models: -54.608 + (-13.937) = 68.55.} The resulting difference between them is 7.317. I am then able to reject the null hypotheses that two
independent probit models are true on both, the 95% and the 99% level in favour of the Heckman-Probit Selection model. This result stands in contrast to the result of the Wald test above. This means, I still am not able to confidently reject or fail to reject the null hypothesis that rho equals zero. Ultimately, the difference between the two tests lies in the size of the sample. To test which of the tests provides better results in small samples would require conducting a Monte Carlo simulation. According to a study that utilizes Monte Carlo simulation to compare the power of these and other tests for different sample sizes, the likelihood ratio test seems to be more powerful in small samples as the Wald test (Eklöf and Karlsson 1997). We have to be very careful with these results, however, since the small sample in this investigation consists of 200 observations. Therefore, it would be necessary to conduct a study that compares the power of the tests for even smaller sample sizes. This, however, is left for future research.

In sum, we face a trade off in the use of either the Heckman-Selection model or two independent probit models. Wrong use of the Heckman model leads to consistent, but inefficient estimators, wrong use of the probit models to selection bias. Theoretically, I expect a selection effect and would use a Heckman procedure; methodologically there is some support for the two probit models but also strong support for the Heckman model. Even if I would have to conduct simulations to get a final answer, the Heckman model seems to be more appropriate. Especially regarding the fact that there are some indications of inefficient estimators in the independent probit models due to large standard errors compared to the standard errors in the Heckman models. This is not the case for all coefficients, but having inefficient estimators in the probit model would also indicate biasedness. In the end, the decision depends on the properties of the estimators one prefers.
APPENDIX D

PREDICTED PROBABILITIES FOR EU APPLICATIONS
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>7.95e-09</td>
<td>4.09e-08</td>
<td>.0004</td>
<td>.0009</td>
<td>.007</td>
<td>.02</td>
<td>.01</td>
<td>.06</td>
<td>.06</td>
<td>.06</td>
<td>.08</td>
</tr>
<tr>
<td>Armenia</td>
<td>.00001</td>
<td>.00003</td>
<td>.0001</td>
<td>.0001</td>
<td>.006</td>
<td>.0002</td>
<td>.0003</td>
<td>.0001</td>
<td>.11</td>
<td>.12</td>
<td>.09</td>
</tr>
<tr>
<td>Belarus</td>
<td>.00001</td>
<td>.0001</td>
<td>.001</td>
<td>.0002</td>
<td>9.30e-09</td>
<td>2.32e-09</td>
<td>5.52e-10</td>
<td>3.24e-10</td>
<td>3.24e-10</td>
<td>3.24e-10</td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>.00001</td>
<td>.003</td>
<td>.03</td>
<td>.08</td>
<td>.12</td>
<td>.18</td>
<td>.18</td>
<td>.33</td>
<td>.42</td>
<td>.45</td>
<td>.61</td>
</tr>
<tr>
<td>Croatia</td>
<td>.0002</td>
<td>.001</td>
<td>.01</td>
<td>.008</td>
<td>.004</td>
<td>.004</td>
<td>.11</td>
<td>.12</td>
<td>.09</td>
<td>.91</td>
<td>.93</td>
</tr>
<tr>
<td>Czech</td>
<td>.00003</td>
<td>.005</td>
<td>.42</td>
<td>.88</td>
<td>.91</td>
<td>.94</td>
<td>.94</td>
<td>.94</td>
<td>.91</td>
<td>.91</td>
<td>.93</td>
</tr>
<tr>
<td>Estonia</td>
<td>.0007</td>
<td>.15</td>
<td>.35</td>
<td>.44</td>
<td>.54</td>
<td>.66</td>
<td>.74</td>
<td>.67</td>
<td>.75</td>
<td>.75</td>
<td>.77</td>
</tr>
<tr>
<td>Georgia</td>
<td>2.30e-07</td>
<td>7.63e-07</td>
<td>7.43e-06</td>
<td>7.70e-06</td>
<td>.0035</td>
<td>.04</td>
<td>.08</td>
<td>.13</td>
<td>.09</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>.008</td>
<td>.41</td>
<td>.82</td>
<td>.87</td>
<td>.93</td>
<td>.94</td>
<td>.97</td>
<td>.98</td>
<td>.97</td>
<td>.98</td>
<td>.98</td>
</tr>
<tr>
<td>Latvia</td>
<td>.00009</td>
<td>.001</td>
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APPENDIX E

PREDICTED PROBABILITIES FOR EU APPLICATIONS

ACCOUNTING FOR TRANSITION CRISES
# Table A.5: Predicted Probabilities for EU Applications Accounting for Transition Crises

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