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SPATIAL MODELS OF LOGROLLING IN THE EUROPEAN UNION

by

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Abstract

This paper presents spatial models of logrolling in the EU. It analyzes the Commission appointment, logrolling and policy making processes under the EU's principal legislative procedures: the consultation, cooperation and codecision procedures. The theory characterizes equilibrium EU policies and sets of successful policies, i.e., sets of policies that can become EU policy during the logrolling and policy making processes. It determines countries' optimal nomination strategies and countries and legislators' optimal voting strategies during the Commission appointment process. *Journal of Economic Literature* Classification Numbers: C72, D72. Keywords: Logrolling, European Union, Policy Making.

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1 Introduction

European Union (EU) policy makers may have other policy issues in mind when setting EU policy on a particular issue. Consideration of multiple issues may motivate exchanges of votes among policy makers. Policy makers may support a policy change on a certain issue even though they prefer the status quo, in exchange for other legislators' support for policy changes on other issues. Divergent policy preferences create opportunities for such vote trading or logrolling.

The EU legislative process has received widespread attention in recent years. The literature includes theoretical analyses of the legislative procedures, amongst others by Steunenberg (1994), Tsebelis (1994), and Crombez (1996, 1997a). In these models the Commission, the Parliament and the countries consider specific policy issues and do not engage in logrolling. Equilibrium EU policies depend on the preferences of the Commission, the Parliament and the countries, and these preferences are assumed to be exogenous.

Crombez (1997b) endogenizes the Commission's preferences by studying the Commission appointment process. He characterizes sets of effective Commissions, i.e., Commissions that can be appointed and can successfully propose their own ideal policies, as functions of the ideal policies of the countries and the Parliament.

It is somewhat surprising that theoretical analyses of the EU legislative process have largely neglected logrolling so far, as the political economics literature includes a considerable number of theoretical analyses of logrolling. Tullock (1959) provides an early analysis of logrolling. He argues that logrolling leads to socially inefficient policies, and finds that logrolls are less efficient the smaller the majority required. He also points at the instability of logrolls.

Subsequent contributions focus on specific aspects of logrolling, including the points raised by Tullock. Downs (1961) does not consider socially inefficient logrolling as a consequence of majority rule. He claims that legislators' electoral motivations and the electorate's consideration of over-all legislative programs rather than isolated policy issues would prevent logrolling, if it were not for the electorate's ignorance. Buchanan and Tullock (1962) show that vote trading may indeed be socially efficient.¹ In the models introduced in this paper logrolls are efficient. All countries need to approve the appointment of a Commission. They consider policies when voting on the Commission. A Commission is then appointed only if all countries prefer the resulting policy or logroll to the status quo. Implemented logrolls are thus socially efficient.

Bernholz (1973) shows that in "two issues, two alternatives" cases logrolling is possible if majorities of two thirds or less are required for decisions. Koford (1982) claims that U.S. legislative institutions help establish stable and efficient forms of vote trading.² Baron (1991) presents sequential games of distributive politics. Using noncooperative game theory he studies what distributive programs legislatures adopt under perfect information. He shows that majoritarian incentives can lead to the adoption of inefficient programs, legislatures can limit the inefficiency through the choice of procedures, and adopted programs are stable. In this paper the EU institutions lead to stable logrolls.

As mentioned above, logrolling in the EU has received little attention in the literature so far. Bueno de Mesquita and Stokman (1994) discuss theories of logrolling and apply them to the EU in an institution-free setting. Carrubba and Volden (1996) present a distributive model of logrolling. They study how chamber size and voting rule affect a legislature's ability to engage in logrolling, and refer to the EU as an example.

This paper presents spatial models of logrolling in the EU. Alternative EU policies are represented by points in a policy space and policy makers are assumed to have preferences over these points. Most other models of logrolling are distributive, i.e., different policies correspond to different amounts of government spending and to different budget allocations. Tullock (1970) provides an exception in this respect. He presents a spatial model of logrolling thus integrating the literatures on logrolling and spatial models. He concludes that differences in voters' intensities of preferences on certain issues create opportunities for logrolling. I find opportunities for logrolling in the absence of different intensities of preferences.

I introduce sequential, finite horizon games of EU logrolling in a spatial context. The countries, Members of the European Parliament (MEPs) and Commissioners have complete and perfect information.³ The models yield equilibrium policies as functions of the countries' and MEPs' preferences. In the models the EU member countries, as represented in the Council, and the MEPs first appoint a Commission. The countries and MEPs are assumed to have preferences over EU policies. They care about the Commission only because it affects EU policy. Therefore, they think ahead and look at the logrolling and policy making processes when they appoint a Commission. Subsequently, the countries, MEPs and Commissioners can approve a broad EU legislative program, which provides opportunities for logrolling. If they fail to agree on a logroll, the countries, MEPs and Commissioners finally set EU policy on each issue separately.

In the next section I introduce the models. I present a model for each of the EU's three principal legislative procedures: the consultation, cooperation and codecision procedures.⁴ The third section considers policy making on individual policy issues and characterizes equilibrium EU policies and sets of successful policies during policy making, i.e., sets of policies that can become

EU policy during the policy making process. These sets and the equilibrium EU policies are functions of the ideal policies of the countries, MEPs and Commissioners, and the location of the status quo. In the fourth section I consider logrolling, and characterize equilibrium EU policies and sets of successful policies during logrolling, i.e., sets of policies that can become EU policy during the logrolling process. Again, the sets and equilibrium policies are functions of the ideal policies of the countries, MEPs and Commissioners, and the location of the status quo. The fifth section studies Commission appointment and characterizes the countries' equilibrium nomination strategies and the countries' and MEPs' equilibrium voting strategies during the Commission appointment process. The sixth section presents the conclusions.

I find that under consultation the Commission President successfully proposes as a logroll the policy it prefers most among the policies a qualified majority in the Council and a majority of the Commissioners prefer to the policy that results in the policy making process. Under cooperation a majority of the MEPs also needs to prefer the equilibrium logroll to the policy that results in the policy making process. Under codecision the countries and MEPs may amend the logroll the Commission President proposes in equilibrium.

2 The Model

I present spatial models of Commission appointment, logrolling and policy making in the EU. Alternative logrolls and policies are represented by points in an n -dimensional policy space. Each dimension corresponds to a specific policy issue, such as the allowable noncocoa fat level in chocolate or the length of daylight saving time. Logrolling and policy making can then be thought of as choosing a point in the policy space.

I assume that countries have Euclidean preferences over the EU policy $p(p^1, \dots, p^n)$, with ideal policy $\hat{p}_k(\hat{p}_k^1, \dots, \hat{p}_k^n)$ for country k . Each country has an ideal policy and prefers policies that are closer to, rather than farther away from, its ideal policy. I refer to the EU policy p^i on dimension i as the i -policy, and to country k 's ideal policy \hat{p}_k^i on dimension i as country k 's ideal i -policy.⁵ MEPs and potential Commissioners are also assumed to have Euclidean preferences over the EU policy.

I study the EU's three principal legislative procedures: the consultation, cooperation and codecision procedures, and present a model for each procedure. Each model consists of three sequential games: a Commission appointment game, a logrolling game and a policy game. First, the countries and MEPs appoint a Commission. Subsequently, the Commissioners, MEPs and countries can engage in logrolling, i.e., they have an opportunity to trade votes across policy issues. If the logrolling efforts fail, they finally set EU policies on the n dimensions separately. I now study the Commission appointment, logrolling and policy games in more detail.

2.1 Commission Appointment

The Commission appointment process, as studied in the model, is shown in Figure 1. It is analyzed in more detail by Crombez (1997b). In the first stage Nature selects the country k that is to propose a Commission President. Country k 's selection probability could, for example, be equal to its share of the Commissioners.⁶ Subsequently, country k proposes a Commission President. Next, the countries simultaneously propose the other Commissioners. In the fourth and fifth stages the countries and the Parliament vote on the proposed Commission. If all countries and a majority of MEPs vote in favor, the proposed Commission is appointed.⁷ Otherwise, the status quo prevails.⁸ The status quo is either the policy agreed on under a previous

Commission, or the result of existing national policies. On the daylight saving time issue, for example, the status quo would be daylight saving time from the last weekend of March until the last weekend of October. On the chocolate issue, the status quo would be the absence of an internal market.

---Figure 1 about here---

2.2 Logrolling

The logrolling process, as studied in the model, is shown in Figure 2.⁹ First, the Commission President proposes a logroll. Subsequently, the Commissioners vote on the proposed logroll. If the proposed logroll obtains the support of a simple majority of the Commissioners, it is sent to the Parliament and the Council. If the proposed logroll fails to obtain the support of a majority of the Commissioners, the Commission proposes the countries and MEPs that no logroll be implemented.

---Figure 2 about here---

Under the codecision procedure the MEPs and the countries, as represented in the Council, can together approve an amendment to the proposal.¹⁰ In particular, the Council President can propose an amendment in the third stage of the logrolling process. If the Parliament President approves the amendment in the fourth stage, it is subsequently voted on in the Council and the Parliament. The amendment needs the support of a qualified majority in the Council and a majority of MEPs for approval. A qualified majority in the Council consists of 62 out of a total of 87 votes.¹¹ The countries and MEPs compare the amendment to the logroll. Finally, the winner of this vote is voted on by the countries and MEPs in the seventh and eighth stages of the logrolling process. The countries and MEPs compare the (amended) logroll to

the policy that is implemented if no logroll is agreed on. To be adopted the (amended) logroll needs the support of a qualified majority in the Council and a majority of the MEPs. If no logroll is adopted, the policy making process commences.

Under consultation and cooperation no amendments are voted on. Under cooperation the countries and MEPs vote on the logroll, as under codecision, whereas under consultation only the countries vote on the logroll.

2.3 Policy Making

If no logroll is agreed on, the countries and institutions turn their attention to policy making and deal with the n policy issues one issue at a time. Since the countries, the MEPs and the Commissioners have Euclidean preferences, their preferences over the i -policy are independent of the EU policies on other dimensions. Country k 's utility, for example, decreases as the i -policy moves farther away from country k 's ideal i -policy \hat{p}_k^i , whatever the EU policies on the other dimensions are. Policy making on dimension i can thus be studied as if it were the only relevant dimension.

The Commission and the Parliament use majority rule, and there are no restrictions on amendments. As a consequence, the analysis of policy making on dimension i can be simplified by focusing on the ideal i -policies of the i -median Commissioner and the i -median MEP. Suppose the i -status quo q^i is to the right (left) of the i -median Commissioner's ideal i -policy \hat{p}_c^i . The i -median Commissioner and all Commissioners on his left (right) then want a move to the left (right). As a result, any i -policy is defeated in the Commission by i -policies that are closer to the i -median Commissioner's ideal i -policy. Similar reasoning applies to voting in the Parliament. With respect to policy making on dimension i the Commission and the Parliament can thus be

treated as unitary actors with ideal i -policies equal to their i -median voters' ideal policies, \hat{p}_c^i and \hat{p}_p^i respectively.¹²

The Council is not represented as a unitary actor because it uses qualified majority rule. Nonetheless, the analysis of policy making on dimension i can be simplified by focusing on the countries that are i -pivotal under the qualified majority rule. The country a^i that is i -pivotal for a move to the right thus has an ideal policy to the left of the country with the i -median vote. In particular, country a^i is the country with the 26th vote (from the left). Country a^i and the countries to its right then have 62 votes, and the countries to its right do not constitute a qualified majority without country a^i . The country b^i that is i -pivotal for a move to the left is the country with the 62nd vote.

Policy making on dimension i starts with a proposal from the Commission. The Commission proposal goes through one of the EU's legislative procedures. The model focuses on the consultation, cooperation and codecision procedures. Crombez (1996) presents a model of the consultation and cooperation procedures, and Crombez (1997a) studies the codecision procedure. This model uses simplified versions of those models. They are shown in Figure 3.

----- Figure 3 about here-----

First, the Commission proposes a policy. Under the codecision procedure the Parliament can then offer a joint text, which becomes EU policy if a qualified majority in the Council approves it.¹³ If the Parliament does not propose a joint text or the Council rejects it, the countries vote on the Commission proposal in the fourth stage. If a qualified majority accepts the proposal and the Parliament approves it under the cooperation and codecision procedures, then the proposal becomes EU policy. Otherwise, the status quo prevails.

The models incorporate complete and perfect information. The countries, the MEPs and the Commissioners know each other's preferences, the location of the status quo, the impact of proposed policies, the sequential structure of the models, and the actions taken in prior stages of the models. They know which issues they will be addressing during the Commission's term.¹⁴

An equilibrium consists of a strategy for each country, MEP and Commissioner. Strategies tell the countries, the MEPs and the Commissioners what actions to choose in the relevant stages of the procedure, given the actions taken in prior stages. The equilibrium concept is subgame perfect Nash. In a Nash equilibrium, no country, MEP or Commissioner can achieve a higher utility by choosing another strategy, given the other countries', MEPs' and Commissioners' strategies. In a subgame perfect Nash equilibrium, countries and institutions can do no better than stick to their strategies in any stage of the procedure, even if a country, MEP or Commissioner deviated from the equilibrium strategy in a prior stage.

3 The Policy Making Process

In this section I study the policy game. This game is played when the Commission has been appointed and attempts at logrolling have failed. In the game the Commission proposes EU policies for the n policy issues. The n policy issues are dealt with one at a time. The Commission first proposes an EU policy for issue 1. The countries and the Parliament then consider the proposal under the consultation, cooperation or codecision procedure. The procedure ends with the adoption, amendment or rejection of the proposal. When the procedure is over, the Commission proposes a policy on issue 2, and the countries and the Parliament consider the proposal under one of the three procedures. This sequence is repeated until all n issues have been dealt with. I look at three scenarios: in the first scenario all issues are dealt with

under the consultation procedure, in the second scenario the cooperation procedure applies to all issues, and in the third scenario all issues are considered under the codecision procedure.

For each procedure I first look at policy making on a single dimension i . As mentioned above, policy making on dimension i can be studied as if it were the only relevant dimension. I go through the different steps of the procedure, and determine the set of successful i -policies and the equilibrium i -policy. Subsequently, I look at the entire policy space and characterize the set of successful policies and the equilibrium EU policy in the n -dimensional policy space, for any configuration of ideal policies and for any location of the status quo.

3.1 Policy Making under Consultation

The Commission starts policy making on dimension i by proposing an i -policy p^i , as shown in Figure 3. It wants the i -policy to be as close to its ideal i -policy as possible.¹⁵ This does not imply, however, that the Commission proposes its ideal i -policy. The Commission understands the role the Council plays in the next stage of the procedure and takes this into account when it makes its proposal.

In the second stage the countries vote on the Commission proposal in the Council. They compare it to the i -status quo. A qualified majority then approves the Commission proposal if it prefers the proposal to the i -status quo. The set CS^i of successful i -policies under the consultation procedure, i.e., the set of i -policies that the Commission can successfully propose, is thus the set of i -policies that are preferred to the i -status quo by a qualified majority in the Council. In the first stage the Commission successfully proposes the i -policy p_{cs}^i that belongs to the set CS^i and is closest to its ideal i -policy. The i -

policy p_{cs}^i is approved by a qualified majority in the Council and thus becomes the equilibrium i -policy.

To illustrate policy making on dimension i I use the configuration of ideal i -policies shown in Figure 4. Country a^i , the Parliament and the Commission, with ideal i -policies \hat{p}_a^i , \hat{p}_p^i and \hat{p}_c^i respectively, have ideal i -policies to the right of the i -status quo. For simplicity, the i -status quo q^i is assumed to be equal to zero. The Parliament has an ideal i -policy to the left of countries a^i and b^i that are pivotal under the qualified majority rule, whereas the Commission is located more to the right. In Figure 4 country a^i and thus a qualified majority prefer a move to the right. The set CS^i of successful policies is then the set of i -policies country a^i prefers to the i -status quo. This set contains all i -policies that are closer to country a^i 's ideal i -policy than is the status quo. The equilibrium i -policy is the Commission's ideal i -policy, i.e., $p_{cs}^i = \hat{p}_c^i$.

----- Figure 4 about here -----

The n i -proposals that the Commission makes during the policy game can be thought of as constituting a proposal in the n -dimensional policy space. Such a proposal is then successful if each of its i -proposals is successful. Proposition 1 characterizes the set of successful policies during policy making and the equilibrium policy under consultation.

Proposition 1 *The set CS of successful policies during policy making under consultation is the set of policies such that each i -policy is preferred to the i -status quo by a qualified majority in the Council, i.e., $CS = \{p(p^1, \dots, p^n) \text{ s.t. } p^i \in CS^i, \forall i\}$. During the policy making process the Commission successfully proposes the policy p_{cs} that belongs to the set CS and is closest to its ideal policy.¹⁶*

Figure 5 shows the set CS for a particular configuration of ideal policies in a two-dimensional policy space. In Figure 5 the two policies that the EU is addressing during the Commission's term are (1) market liberalization (economic policy) and (2) cohesion (social policy). The ideal policies of the countries and the Parliament were chosen for illustrative purposes but correspond to reality. The "southern" countries (Spain, Greece, Ireland, Italy and Portugal) want to move far on cohesion, but want little change on market liberalization. They have a total of 31 votes in the Council. The United Kingdom, with 10 votes, wants a lot more liberalization, but little change on cohesion. The "core" countries (Belgium, Germany, France, Luxembourg, the Netherlands and Austria), as well as the "northern" countries (Denmark, Finland and Sweden) have intermediate positions on both issues. They have 36 and 10 votes respectively. The Parliament's ideal policy is between the ideal policies of the core and the southern countries. The southern countries are pivotal on market liberalization, whereas the core countries are pivotal on cohesion. The set CS is then the set of policies that are preferred to the status quo on market liberalization by the southern countries and on cohesion by the core countries.

-----Figure 5 about here-----

Suppose the Commission's ideal policy is equal to the core countries' ideal policy in Figure 5. The Commission can then successfully propose its ideal policy on cohesion, since the core countries are pivotal on cohesion. The Commission cannot successfully propose its ideal policy on market liberalization however. The southern countries are pivotal on market liberalization and they prefer the status quo to the Commission's ideal policy. On liberalization the Commission then proposes the policy $2\hat{p}_a^1$ that makes the southern countries indifferent to the status quo. In Figure 5 the Commission thus successfully proposes the policy $p_{cs}(2\hat{p}_a^1, \hat{p}_a^2)$. Any

Commission with an ideal policy on the dotted line would successfully propose the same policy.

3.2 Policy Making under Cooperation

Under cooperation the Commission proposes a policy, which is subsequently voted on by the countries and the Parliament, as shown in Figure 3. A qualified majority and the Parliament approve the proposal if they prefer it to the status quo. The set CP^i of successful i -policies under the cooperation procedure is thus the set of i -policies that are preferred to the i -status quo by a qualified majority in the Council and by the Parliament. The set CP^i is thus a subset of the set CS^i of successful policies under the consultation procedure. The Commission successfully proposes the i -policy p_{cp}^i that belongs to the set CP^i and is closest to its ideal i -policy.

In Figure 4 the pivotal country a^i prefers an i -policy to the right of the Parliament's ideal i -policy. It wants to move further away from the i -status quo than does the Parliament. If the Parliament approves the Commission proposal, a qualified majority in the Council thus supports it as well. The set CP^i of successful i -policies is then the set of proposals the Parliament prefers to the i -status quo. The equilibrium i -policy is the policy $2\hat{p}_p^i$ that makes the Parliament indifferent to the status quo.

Proposition 2 characterizes the set of successful policies during policy making and the equilibrium policy under cooperation.

Proposition 2 *The set CP of successful policies during policy making under cooperation is the set of policies such that each i -policy is preferred to the i -status quo by a qualified majority in the Council and by the Parliament, i.e., $CP = \{p(p^1, \dots, p^n) \text{ s.t. } p^i \in CP^i, \forall i\}$. The set CP is a subset of the set CS of*

successful policies under consultation. The Parliament's greater role under cooperation thus reduces the set of successful policies during policy making. During the policy making process the Commission successfully proposes the policy that belongs to the set CP and is closest to its ideal policy.

In Figure 5 the set CP of successful policies during policy making under cooperation is equal to the set CS of successful policies during policy making under consultation, because the Parliament wants to move further away from the status quo than do the pivotal countries a^1 and a^2 on both dimensions. The Commission thus proposes the same policy as under the consultation procedure in Figure 5.

3.3 Policy Making under Codecision

The last two stages of the codecision procedure, as shown in Figure 3, are reached if the Parliament and the Council fail to agree on an i -joint text. They are the same as the last two stages of the cooperation procedure: the Parliament and the Council vote on the i -proposal. For approval the proposal thus needs to be preferred to the i -status quo by a qualified majority in the Council and by the Parliament. It needs to belong to the set CP^i of successful i -policies under cooperation.

An i -proposal that belongs to the set CP^i does not necessarily reach the last two stages of the codecision procedure, however. In the second stage the Parliament can propose an i -joint text, and this i -joint text becomes the i -policy if a qualified majority approves it in the third stage. Since the countries think ahead, they compare the i -joint text to the i -proposal in the third stage. The i -joint text is then adopted if a qualified majority prefers it to the i -proposal.

The Parliament can thus successfully propose an i -joint text in the second stage if there are i -policies a qualified majority prefers to the proposal. The

Parliament uses this opportunity if it prefers such i -policies to the i -proposal. As a result, the i -proposal does not reach the last two stages of the procedure if there are i -policies the Parliament and a qualified majority prefer to it. The set CD^i of successful i -policies under codecision is thus the set of i -policies that satisfy the following requirements: (1) they are preferred to the i -status quo by the Parliament and a qualified majority, and (2) no i -policy is preferred to them by the Parliament and a qualified majority. The set CD^i is thus a subset of the set CP^i of successful policies under cooperation. In the first stage the Commission successfully proposes the i -policy p_{cd}^i that belongs to the set CD^i and is closest to its ideal i -policy.

In Figure 4 the Parliament successfully proposes an i -joint text if the i -proposal is to the left of its ideal i -policy. The Parliament, country a^i and thus a qualified majority then prefer an i -policy to the right of the i -proposal. If the i -proposal is to the right of country b^i 's ideal i -policy, the Parliament also successfully proposes an i -joint text. The Parliament, country b^i and thus a qualified majority then prefer an i -policy to the left of the i -proposal. If the i -proposal is between the ideal i -policies of the Parliament and country a^i , the Parliament cannot successfully propose an i -joint text. The Parliament prefers i -policies to the left of the i -proposal, whereas a qualified majority in the Council prefers i -policies to the right. If the i -proposal is between the ideal i -policies of countries a^i and b^i , the Parliament cannot successfully propose an i -joint text either, since the Council cannot agree on a policy change by a qualified majority. In Figure 4 the set CD^i of successful i -policies is thus the set of i -policies between the ideal i -policies of the Parliament and country b^i . The Commission successfully proposes country b 's ideal i -policy, i.e., $p_{cd}^i = \hat{p}_b^i$. The equilibrium i -policy p_{cd}^i under codecision is farther from the Commission's ideal i -policy than is the equilibrium i -policy p_{cp}^i under cooperation, because the Parliament and a qualified majority in the Council prefer a policy left of the i -policy p_{cp}^i .

Proposition 3 characterizes the set of successful policies during policy making and the equilibrium policy under codecision.

Proposition 3 *The set CD of successful policies during policy making under codecision is the set of policies such that each i -policy satisfies the following requirements: (1) it is preferred to the i -status quo by the Parliament and a qualified majority, and (2) no i -policy is preferred to it by the Parliament and a qualified majority, i.e., $CD = \{p(p^1, \dots, p^n) \text{ s.t. } p^i \in CD^i, \forall i\}$. The set CD is a subset of the set CP of successful policies during policy making under cooperation. The Parliament's greater role under codecision thus further reduces the set of successful policies during policy making. During the policy making process the Commission successfully proposes the policy p_{cd} that belongs to the set CD and is closest to its ideal policy.*

In Figure 5 proposals left of the southern countries' ideal policy are unsuccessful, because the Parliament and the pivotal southern countries prefer to move farther on market liberalization. The Parliament would thus successfully propose a joint text on market liberalization. Similarly, proposals under the core countries' ideal policy are unsuccessful, because the Parliament and the pivotal core countries want to move farther on cohesion. Proposals right of the policy $2\hat{p}_a^1$ that makes the pivotal southern countries indifferent to the status quo on market liberalization are unsuccessful, because the southern countries and thus a qualified majority prefer the status quo. Similarly, proposals above the policy $2\hat{p}_a^2$ that makes the pivotal core countries indifferent to the status quo on cohesion are unsuccessful, because the core countries and thus a qualified majority prefer the status quo. The other policies satisfy the above conditions and thus constitute the set CD . The Commission successfully proposes the policy $p_{cd}(2\hat{p}_a^1, \hat{p}_a^2)$. Any Commission with an ideal policy in the shaded area would successfully propose the same policy.

4 The Logrolling Process

In this section I discuss the countries', MEPs' and Commissioners' opportunities for logrolling. The logrolling game is played after the appointment of a Commission and before the setting of EU policies on the n dimensions. I consider three scenarios: logrolling under consultation, cooperation and codecision.

4.1 Logrolling under Consultation

Under consultation the Commission President first proposes a logroll, as shown in Figure 2. Next, the Commissioners vote on it, and finally the countries consider it in the Council. The proposed logroll is adopted if a majority of the Commissioners and a qualified majority in the Council approve it. The Commissioners and the countries compare the proposed logroll to the policy p_{cs} that becomes EU policy if no logroll is adopted. The logroll is then adopted if a majority of the Commissioners and a qualified majority in the Council prefer it to the policy p_{cs} .

Let the sets $Q(p)$ and $C(p)$ be the sets of policies that are preferred to the policy p by a qualified majority and by a majority of the Commissioners respectively. Proposition 4 characterizes the set of successful policies during logrolling and the equilibrium logroll under consultation.

Proposition 4 *The set L_{cs} of successful policies under logrolling under consultation is the set of policies that are preferred to the policy p_{cs} by a qualified majority in the Council and by a majority of the Commissioners, i.e., $L_{cs} = Q(p_{cs}) \cap C(p_{cs})$. The Commission President successfully proposes as a logroll the policy that belongs to the set L_{cs} and is closest to his ideal policy.*

Figure 6 reproduces part of Figure 5. It focuses on the ideal policies of the southern and core countries, and shows the sets of successful policies during logrolling under the three legislative procedures. The Parliament is no longer represented as a unitary actor, as logrolls concern multiple dimensions. In practice, for a logroll to receive the support of a majority of MEPs, the approval of the two main political groups in the Parliament is needed. These groups are the group of the Party of European Socialists (PES) and the conservative European People's Party (EPP).¹⁷ In Figure 6 I consider these two groups as unitary actors, as they tend to be cohesive.

---Figure 6 about here---

In Figure 6 the core countries as well as the southern countries represent a blocking minority in the Council, i.e., without them no qualified majority can be formed. Together the core and southern countries form a qualified majority. As a result the set $Q(p_{cs})$ of policies that are preferred to the policy p_{cs} by a qualified majority is the set of policies that are preferred to the policy p_{cs} by the southern and core countries. It consists of the shaded areas in Figure 6. Suppose each country appoints Commissioners with ideal policies equal to its own. Then the policies in the set $Q(p_{cs})$ are also preferred to the policy p_{cs} by a majority of the Commissioners, because the southern and core countries together appoint 15 Commissioners out of 21. As a result the set L_{cs} of successful policies during logrolling under consultation is the set $Q(p_{cs})$ of policies that are preferred to the policy p_{cs} by a qualified majority in the Council. Suppose the Commission President's ideal policy is equal to the core countries' ideal policy. Then the Commission President successfully proposes as a logroll the policy l_{cs} that belongs to the set L_{cs} and is closest to his ideal policy.

4.2 Logrolling under Cooperation

Under cooperation the MEPs vote on the logroll in the last stage of the logrolling process, as shown in Figure 2. The prior stages of the logrolling process are as under consultation. A logroll thus needs the approval of a majority of the MEPs to be adopted, in addition to the approval of a majority of the Commissioners and a qualified majority in the Council. Let the set $P(p)$ be the set of policies that are preferred to the policy p by a majority of MEPs. Proposition 5 characterizes the set of successful policies during logrolling and the equilibrium logroll under cooperation.

Proposition 5 *The set L_{cp} of successful policies during logrolling under cooperation is the set of policies that are preferred to the policy p_{cp} by a majority of the Commissioners, a qualified majority in the Council, and a majority of MEPs, i.e., $L_{cp} = P(p_{cp}) \cap Q(p_{cp}) \cap C(p_{cp})$. The Commission President successfully proposes as a logroll the policy that belongs to the set L_{cp} and is closest to his ideal policy.*

In Figure 6 the policy p_{cp} is equal to the policy p_{cs} . As a result, the set L_{cp} of successful policies during logrolling under cooperation is a subset of the set L_{cs} of successful policies during logrolling under consultation. For a logroll to receive the support of a majority of the MEPs it needs to be preferred to the policy p_{cp} by the PES and EPP groups. In Figure 6 the set L_{cp} is bounded by the indifference curves of the EPP group and the core countries through the policy p_{cp} . In particular, it consists of the dark shaded area. Suppose the Commission President's ideal policy is equal to the core countries' ideal policy. Then the Commission President successfully proposes as a logroll the policy l_{cp} that belongs to the set L_{cp} and is closest to his ideal policy.

4.3 Logrolling under Codecision

Under codecision the countries and MEPs can amend the proposed logroll. The final two stages of the logrolling process, as illustrated in Figure 2, are as under cooperation, however: the countries and MEPs vote on the (amended) logroll. The (amended) logroll is then adopted in the last two stages of the process if a qualified majority in the Council and a majority of MEPs prefer it to the policy p_{cd} .

Proposing a logroll or an amendment that is not preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council is thus equivalent to proposing the policy p_{cd} . In equilibrium, the Commission President thus proposes a logroll that is (weakly) preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council. Likewise, the Council President proposes an amendment that is (weakly) preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council.

Suppose that the Council President proposes an amendment in the third stage of the logrolling process, and that a qualified majority in the Council and a majority of MEPs do indeed prefer the logroll and the amendment to the policy p_{cd} . When voting on the amendment in the fifth and sixth stages of the logrolling process, the countries and MEPs then compare the amendment to the logroll. The amendment is then approved if a majority of MEPs and a qualified majority in the Council prefer it to the logroll. Likewise, the Parliament President agrees to the amendment in the fourth stage of the logrolling process, if he prefers it to the logroll. The amendment is thus successful if a qualified majority in the Council, a majority of MEPs, and the Parliament President prefer it to the logroll.

In equilibrium, the Council President thus proposes an amendment that is (1) preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council, and (2) preferred to the logroll by a qualified majority in the Council, a majority of MEPs, and the Parliament President. In particular, he proposes as an amendment the policy he prefers most among the policies that satisfy the two conditions. Let $a_{cd}(l_{cd})$ be this amendment. It is a function of the logroll l_{cd} proposed by the Commission President.

Commissioners voting on the logroll in the second stage of the process compare the amendment $a_{cd}(l_{cd})$ that is implemented if they approve the logroll to the amendment $a_{cd}(p_{cd})$ that is implemented if they reject it. The Commissioners vote in favor of the logroll if they prefer the amendment $a_{cd}(l_{cd})$ to the amendment $a_{cd}(p_{cd})$. The logroll is thus approved in the second stage of the logrolling process if a majority of the Commissioners prefer the amendment $a_{cd}(l_{cd})$ to the amendment $a_{cd}(p_{cd})$.

Proposing a logroll such that a majority of the Commissioners prefers the amendment $a_{cd}(p_{cd})$ to the amendment $a_{cd}(l_{cd})$ is thus equivalent to proposing the policy p_{cd} . In equilibrium, the Commission President thus proposes a logroll such that a majority of the Commissioners (weakly) prefers the amendment $a_{cd}(l_{cd})$ to the amendment $a_{cd}(p_{cd})$.

Proposition 6 characterizes the set L_{cd} of successful policies during logrolling and the equilibrium logroll under codecision.

Proposition 6 *The set L_{cd} of successful policies during logrolling under codecision is the set of policies $a_{cd}(l_{cd})$ that satisfy the following four requirements. First, a qualified majority in the Council and a majority of MEPs prefer each policy $a_{cd}(l_{cd})$ to the policy p_{cd} . Second, a qualified majority in the Council, a majority of MEPs,*

and the Parliament President prefer each policy $a_{cd}(l_{cd})$ to a logroll l_{cd} , that is preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council. Third, the policy $a_{cd}(l_{cd})$ is the policy the Council President prefers most among the policies that satisfy the first two conditions for a logroll l_{cd} , that is preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council. Fourth, the policy $a_{cd}(l_{cd})$ is preferred to the policy $a_{cd}(p_{cd})$ by a majority of the Commissioners. The amendment $a_{cd}(p_{cd})$ is the amendment that is adopted if the Commission President proposes the policy p_{cd} as a logroll. The Commission President proposes as a logroll the policy l_{cd} , that is preferred to the policy p_{cd} by a majority of MEPs and a qualified majority in the Council, and such that the amendment $a_{cd}(l_{cd})$ belongs to the set L_{cd} and is closest to his ideal policy.

In Figure 6 logrolls that are preferred to the status quo by a majority of MEPs and a qualified majority in the Council belong to the set L_{cp} , as explained above. Not all logrolls in the set L_{cp} belong to the set L_{cd} , however. The logroll needs to be such that the amendment $a_{cd}(l_{cd})$ is preferred to the amendment $a_{cd}(p_{cd})$ by a majority of the Commissioners. The amendment $a_{cd}(p_{cd})$ is the policy the Council President prefers most among the policies that are preferred to the policy p_{cd} by the Parliament President, a qualified majority in the Council and a majority of the MEPs. Suppose the Parliament President's ideal policy is equal to the EPP's ideal policy and the Council President's ideal policy is equal to the core countries' ideal policy. The amendment $a_{cd}(p_{cd})$ is then the policy the Council President prefers most among the policies that belongs to the set L_{cp} , i.e., the policy l_{cp} . Suppose all countries nominate Commissioners with ideal policies equal to their own. Then no policy in the set L_{cp} is strictly preferred to the policy l_{cp} by a majority of the Commissioners, because the ten Commissioners of the UK and the core

countries prefer the policy l_{cp} to any other policy in the set L_{cp} . As a result the set L_{cd} is equal to the singleton $\{a_{cd}(p_{cd})\}$.

In equilibrium the Commission President thus proposes the policy $l_{cd} = a_{cd}(p_{cd})$ as a logroll in Figure 6. A majority of the Commissioners approves it, since the Council President successfully proposes the policy $a_{cd}(p_{cd})$ as an amendment otherwise. The Council President does not propose an amendment, as the EPP and the core countries cannot agree on an amendment. Finally, a qualified majority in the Council and a majority of the MEPs approve the logroll, because they prefer it to the policy p_{cd} . The logroll l_{cd} is thus adopted.

5 The Commission Appointment Process

In this section I study the Commission appointment process, as shown in Figure 1. Again, I consider three scenarios. In the first scenario the logrolling and policy making that follow the Commission appointment occur under consultation. In the second scenario the cooperation procedure applies, and in the third scenario the codecision procedure is used.

5.1 Commission Appointment under Consultation

In the final two stages of the Commission appointment process the countries and MEPs vote on the proposed Commission. They compare the status quo to the policy that will be implemented if the Commission is appointed. The countries and MEPs consider the median Commissioners on all dimensions, the set CS of successful proposals, the policy p_{cs} that is implemented in the absence of logrolling, the set L_{cs} of successful logrolls, and the logroll l_{cs} that is implemented. They vote in favor of the Commission if they prefer the

logroll l_{cs} to the status quo. The Commission is thus appointed if all countries and a majority of MEPs prefer the logroll l_{cs} to the status quo.

In Figure 7 the dashed line shows the set U of policies that are preferred to the status quo by all countries and a majority of MEPs. It is bounded by the indifference curves through the status quo of the United Kingdom, the core countries, the EPP, the PES and the southern countries. The Commission is thus appointed if the logroll l_{cs} belongs to the set U . Suppose that the countries appoint Commissioners with ideal policies equal to their own ideal policies, as above. Then the logroll l_{cs} does indeed belong to the set U . Such a Commission is thus appointed in the last two stages of the Commission appointment process.

-----Figure 7 about here-----

In the third stage of the Commission appointment process the countries nominate Commissioners. In equilibrium they nominate Commissioners such that the resulting logroll l_{cs} belongs to the set U and is closest to their ideal policies, if this is possible given the Commissioners the other countries nominate.¹⁸ The choice of a Commissioner may affect the implemented policy in two ways. First, it may affect the median Commissioner on one or more dimensions, and thus the policy p_{cs} that is implemented in the absence of logrolling. As logrolls are compared to the policy p_{cs} in the logrolling process, the choice may thus affect the set of successful logrolls. Second, the choice may also affect this set because successful logrolls need to be approved by a simple majority of the Commissioners. Similar arguments hold for the nomination of the Commission President in the second stage of the Commission appointment process.

Proposition 7 characterizes the countries' optimal nomination strategies, and the countries' and MEPs' optimal voting strategies in the Commission appointment process.

Proposition 7 *In the Commission appointment process the countries and MEPs vote in favor of the Commission if they prefer the resulting logroll l_{cs} to the status quo. A Commission is thus appointed if the resulting logroll l_{cs} belongs to the set U of policies that all countries and a majority of MEPs prefer to the status quo. The countries nominate Commissioners such that the logroll l_{cs} belongs to the set U and is closest to their ideal policies, if this is possible given the other countries' nomination strategies.*

In Figure 7 it is an equilibrium strategy for all countries to nominate Commissioners with ideal policies equal to their own. The policies that are preferred to the policy p_{cs} by a qualified majority in the Council, are then also preferred to it by 15 Commissioners. So, a single country cannot affect the set L_{cs} , without changing the policy p_{cs} . Given the other countries' nomination strategies only the UK and the core countries can change the median Commissioner on a dimension by nominating a different Commissioner. In particular, they can give the median Commissioner a higher ideal policy on cohesion. This would move the policy p_{cs} upward, and would move the corresponding logroll farther away from the ideal policies of the core countries and the UK. So, the countries have no incentives to nominate Commissioners with ideal policies different from their own ideal policies, given that the other countries also nominate Commissioners with ideal policies equal to their own ideal policies.

5.2 Commission Appointment under Cooperation

In the second scenario, studied in this subsection, the cooperation procedure applies to the logrolling and policy making that follow the Commission appointment. The Commission appointment process is as under consultation. As a result, the conclusions are analogous.

In the final two stages of the Commission appointment process the countries and MEPs vote on the proposed Commission. It is appointed if the resulting logroll l_{cp} belongs to the set U of policies that all countries and a majority of MEPs prefer to the status quo. In Figure 7 the logroll l_{cp} does indeed belong to the set U , if all countries appoint Commissioners with ideal policies equal to their own ideal policies.

In the third stage of the Commission appointment process the countries nominate Commissioners. In equilibrium they nominate Commissioners such that the resulting logroll l_{cp} belongs to the set U and is closest to their ideal policies, if this is possible given the Commissioners the other countries nominate. The optimal voting and nominating strategies under cooperation are thus similar to the optimal strategies under consultation. In Figure 7 it is optimal for all countries to nominate Commissioners with ideal policies equal to their own ideal policies.

5.3 Commission Appointment under Codecision

In the third scenario the codecision procedure applies to the logrolling and policy making that follow the Commission appointment. The Commission appointment process is as above. So, the conclusions are analogous.

In the final two stages of the Commission appointment process the countries and MEPs vote on the proposed Commission. It is appointed if the resulting policy $a_{cd}(l_{cd})$ belongs to the set U of policies that all countries and a majority of MEPs prefer to the status quo. In Figure 7 the logroll $l_{cd} = a_{cd}(l_{cd})$ does indeed belong to the set U , if all countries appoint Commissioners with ideal policies equal to their own ideal policies.

In the third stage of the Commission appointment process the countries nominate Commissioners. In equilibrium they nominate Commissioners such that the resulting policy $a_{cd}(l_{cd})$ belongs to the set U and is closest to their ideal policies, if this is possible given the Commissioners the other countries nominate. The optimal voting and nominating strategies under cooperation are thus similar to the optimal strategies under consultation. In Figure 7 it is optimal for all countries to nominate Commissioners with ideal policies equal to their own ideal policies.

6 Conclusions

This paper presents spatial theories of Commission appointment, logrolling, and policy making in the EU. It characterizes sets of successful policies during logrolling and policy making, i.e. policies that can become EU policy during the logrolling and policy making processes. It considers the three principal EU legislative procedures: consultation, cooperation and codecision.

During policy making a policy is successful under consultation if a qualified majority in the Council prefers it to the status quo on each dimension. Under cooperation a majority of MEPs also needs to prefer the policy to the status quo on each dimension. Under codecision there is a third requirement that there be no policies a majority of MEPs and a qualified majority in the Council

prefer to the policy. The Commission successfully proposes the policies it prefers most among the policies that satisfy these requirements.

During logrolling a policy is successful under consultation if a qualified majority in the Council and a majority of the Commissioners prefer it to the policy the Commission successfully proposes during policy making. Under cooperation a majority of MEPs also needs to prefer the policy to the policy the Commission successfully proposes during policy making. Under codecision a policy is successful if it satisfies the following four requirements. First, a majority of MEPs and a qualified majority in the Council prefer it to the policy the Commission successfully proposes during policy making. Second, a majority of MEPs, a qualified majority in the Council and the Parliament President prefer it to the logroll. Third, the Council President prefers the policy most among the policies that satisfy the first two requirements. Fourth, a majority of the Commissioners prefers the policy to the amendment the Council President would propose if they rejected the logroll. The Commission President successfully proposes the policies it prefers most among the policies that satisfy these requirements.

During the Commission appointment process a Commission is appointed if all countries and a majority of MEPs prefer the resulting logroll to the status quo. The countries nominate Commissioners who bring EU policy closest to their ideal policies.

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¹ Other scholars who study the welfare implications of logrolling include Coleman (1966), Mueller (1967), and Riker and Brams (1973).

² Stratmann (1992, 1995) provides rare empirical analyses of logrolling. He studies the incidence of logrolling in the United States Congress. Ferejohn (1986) presents a case study of logrolling. Mueller (1989) discusses logrolling models more extensively. I do not provide a complete overview of the logrolling literature.

³ The Council, the Parliament and the Commission are the three principal institutions involved in the EU legislative process. The Council is an intergovernmental body. It consists of representatives of the member countries' national governments. It is the main legislative institution in the EU. The Parliament is directly elected. It co-legislates with the Council under some of the EU's legislative procedures. The Commission is the EU's executive. It is appointed by the Council and the Parliament. It proposes and implements EU legislation. Currently, the Council has 15 members, the Parliament 626, and the Commission 20. See Nugent (1994) for a more detailed description of the EU institutions.

⁴ The consultation procedure accounts for about two thirds of legislation (154 opinions in 1997), the cooperation procedure for about 10 percent (19 first readings in 1997), and the codecision procedure for about 15 percent (34 first readings in 1997).

⁵ In general, I use the prefix *i* to refer to dimension *i*.

⁶ The five largest countries (Germany, Spain, France, Italy and the United Kingdom) have two Commissioners each, the other countries have one each.

⁷ The Parliament uses absolute majority rule. As I disregard abstentions, absolute majority rule is equivalent to simple majority rule. Therefore, I omit the adjective "absolute" throughout this paper.

⁸ In reality, the Commission President needs the approval of all countries and a majority of MEPs prior to the nomination of the other Commissioners. Moreover, the other Commissioners need the approval of the Commission President in addition to the approval of all countries and a majority of MEPs.

⁹ I assume that logrolling proceeds under one of the EU's three principal legislative procedures. It seems logical that a logroll across issues that are to be dealt with under a certain procedure would indeed need to be approved under the same procedure. In addition, I assume that the Commission President proposes a logroll within the Commission. This

seems reasonable given the Commission President's prominent role in the Commission and the inherently multi-issue character of logrolls.

¹⁰ An amendment is worked out in the Conciliation Committee and then voted on in the Council and the Parliament. The Conciliation Committee consists of the members of the Council and an equal number of representatives of the Parliament. The Council and Parliament Presidents (or their representatives) take turns at chairing the Committee's meetings. Both Presidents also convene prior to the Committee's meetings to agree on a compromise. Therefore, it seems reasonable to assume that the Presidents present an amendment they agree on to the Council and the Parliament. In the model I assume that the Council President proposes the amendment. This assumption does not affect the conclusions. See Corbett et al. (1995) on the functioning of the Conciliation Committee.

¹¹ France, Germany, Italy and the United Kingdom have 10 votes each; Spain 8; Belgium, Greece, Portugal and the Netherlands 5 each; Austria and Sweden 4 each; Denmark, Finland and Ireland 3 each; and Luxembourg 2.

¹² In other words Black's median voter theorem applies (Black 1958).

¹³ In reality, a Conciliation Committee consisting of representatives of the Parliament and the countries can negotiate a joint text. The treaties provide for a reversion policy in case of a disagreement in the Conciliation Committee. As a result, the assumption that the Parliament proposes the joint text does not affect the equilibrium EU policy. In equilibrium the Commission determines the reversion policy by making a proposal that cannot be amended in the Conciliation Committee.

¹⁴ In reality the countries and the MEPs do not know exactly what issues they will be dealing with over a period of five years. It seems reasonable to assume, however, that they have a good idea of the main issues that will arise, and that they have these issues in mind when appointing a Commission.

¹⁵ As seen above, the ideal i -policy of the i -median Commissioner (MEP) can be thought of as the Commission's (Parliament's) ideal i -policy.

¹⁶ On dimension i the Commission's (Parliament's) ideal policy consists of the i -median Commissioner (MEP) ideal i -policy.

¹⁷ Currently the PES group consists of 214 members, whereas the EPP group has 200 members in the 626 member Parliament.

¹⁸ If a country cannot nominate Commissioners such that the resulting logroll belongs to the set U , given the other countries' nomination strategies, then its nomination strategy is irrelevant, because the Commission will not be appointed.

Figure 1: Commission Appointment.

Nature selects the country k that is to propose a Commission President.

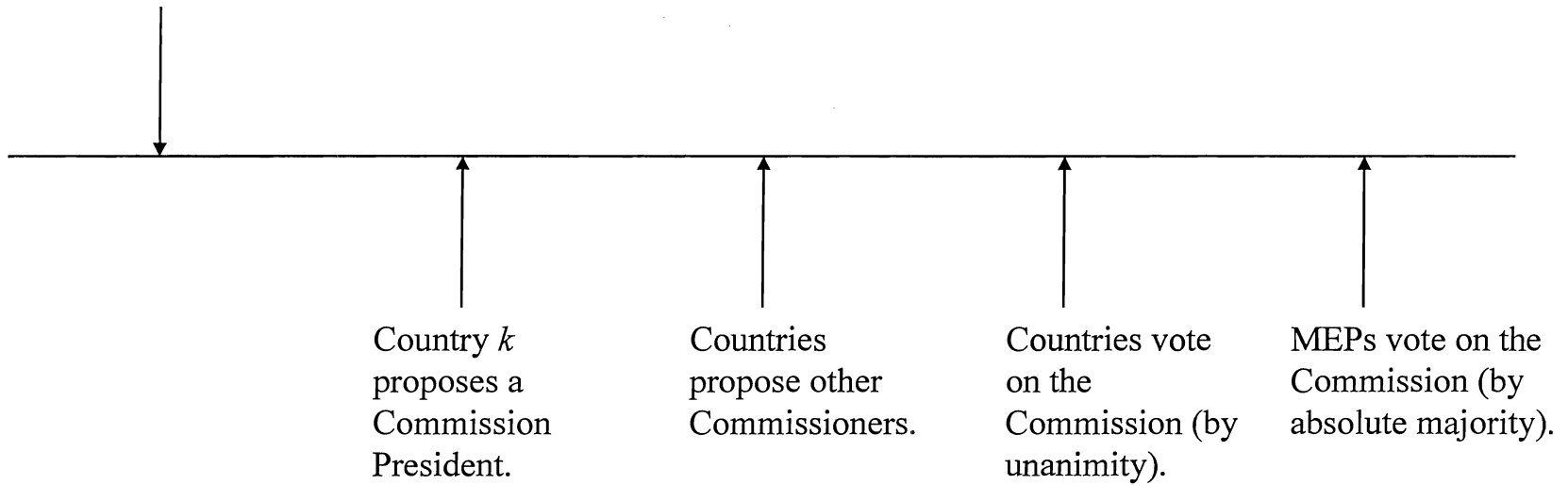


Figure 2: Logrolling.

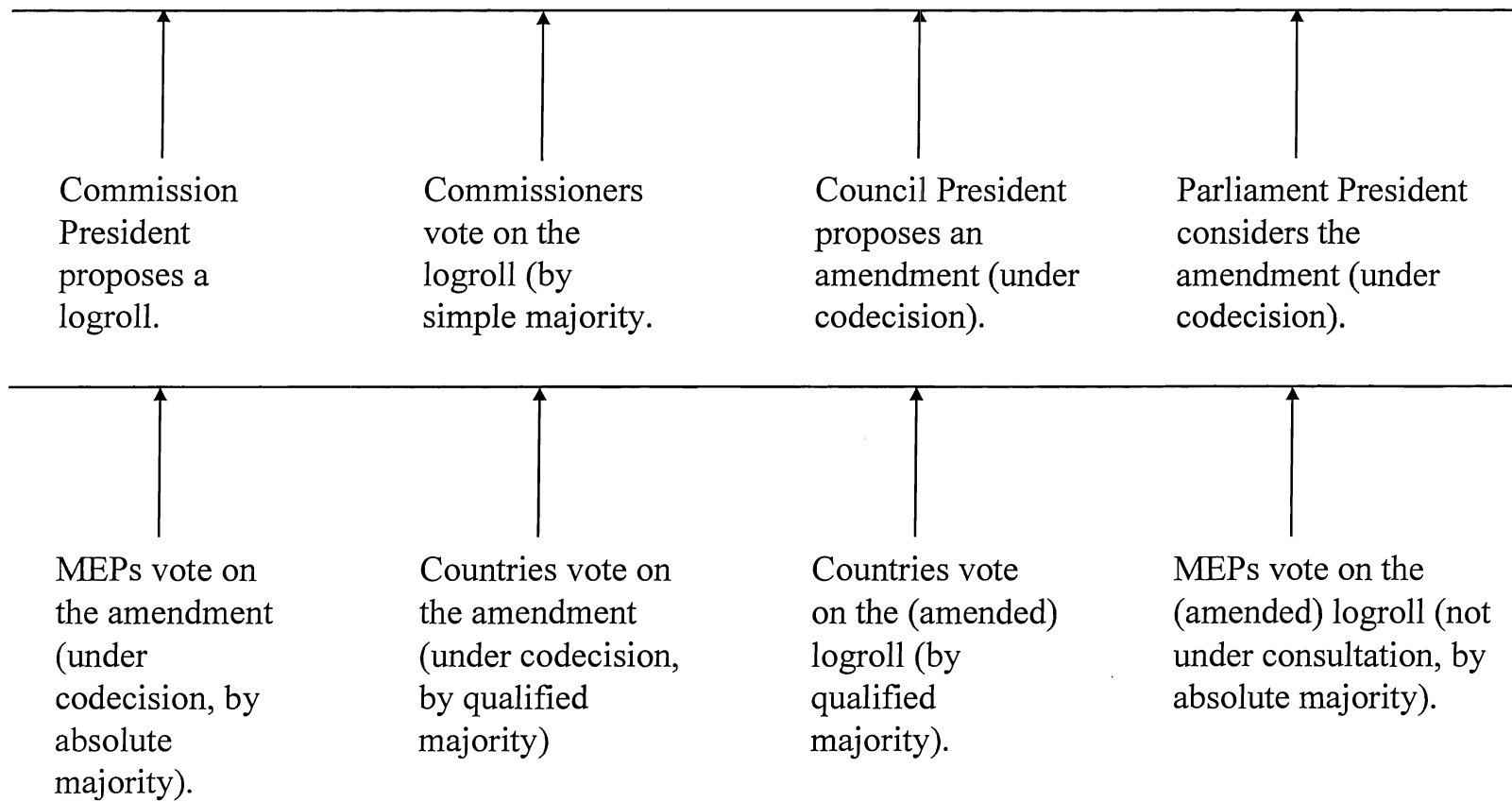


Figure 3: The Legislative Procedures.

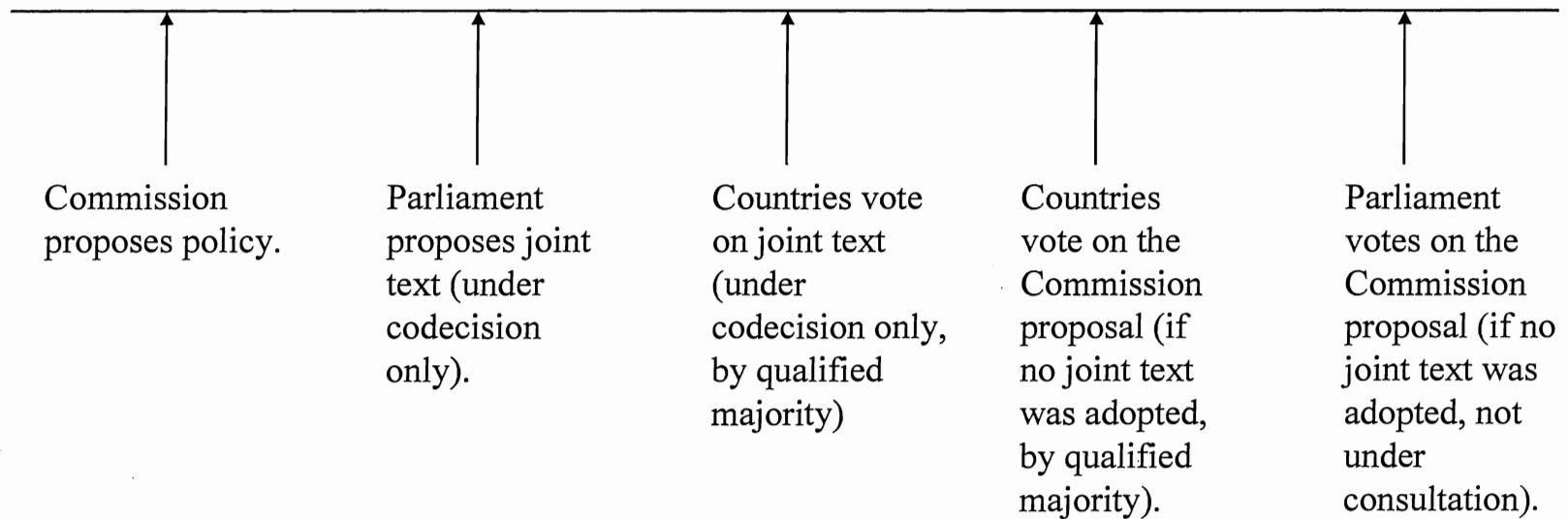


Figure 4: Policy Making.

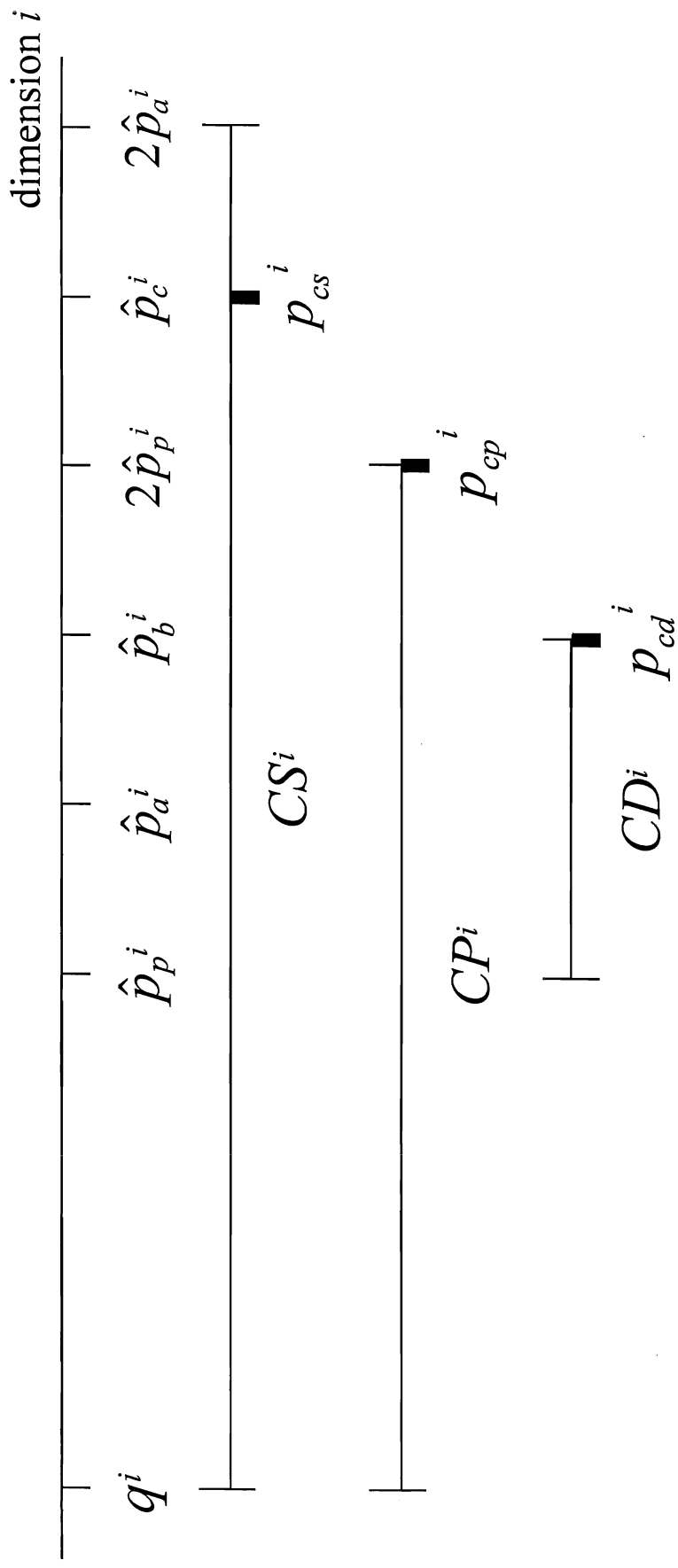


Figure 5: Successful Proposals.

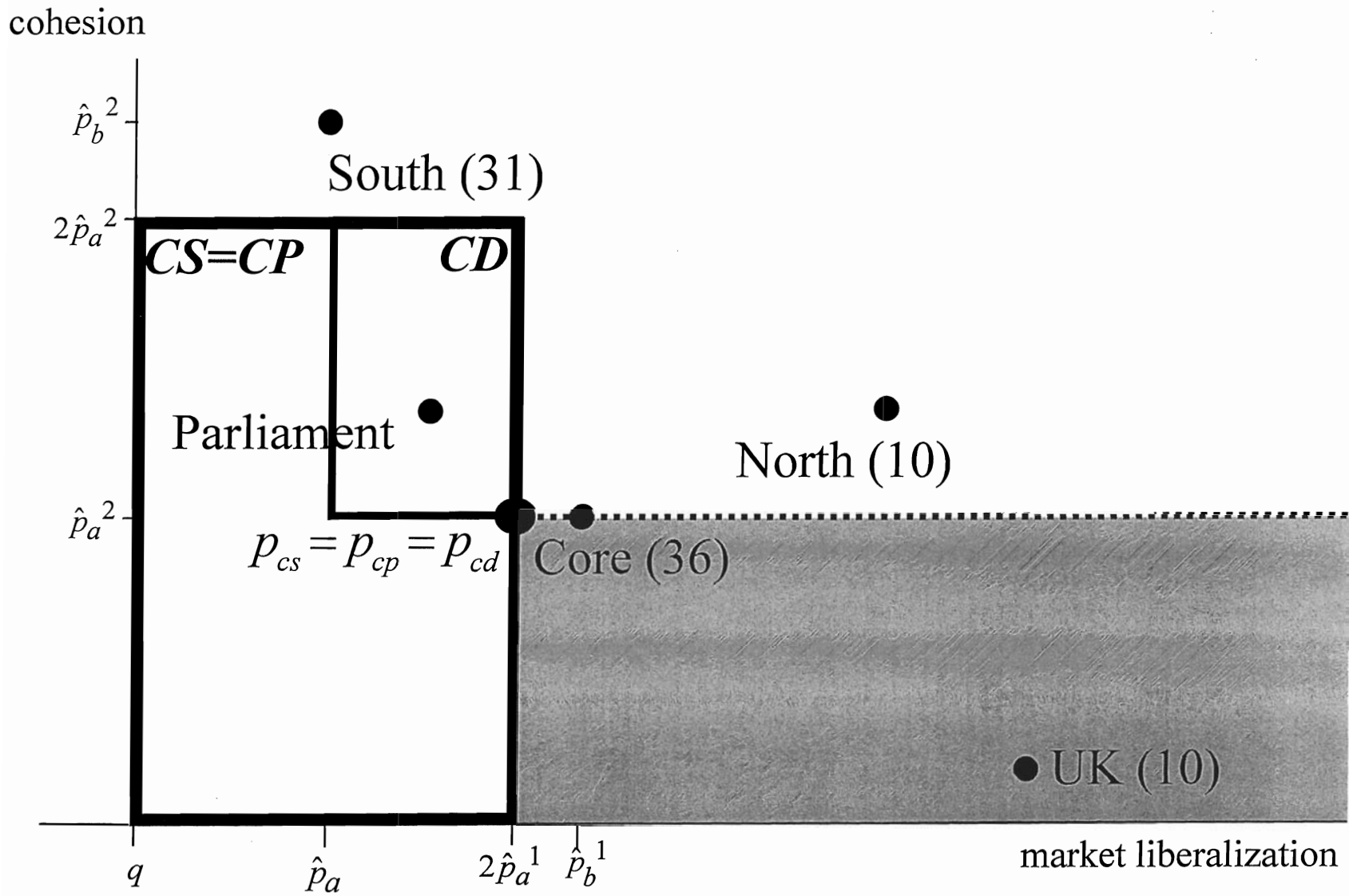


Figure 6: Successful Logrolls.

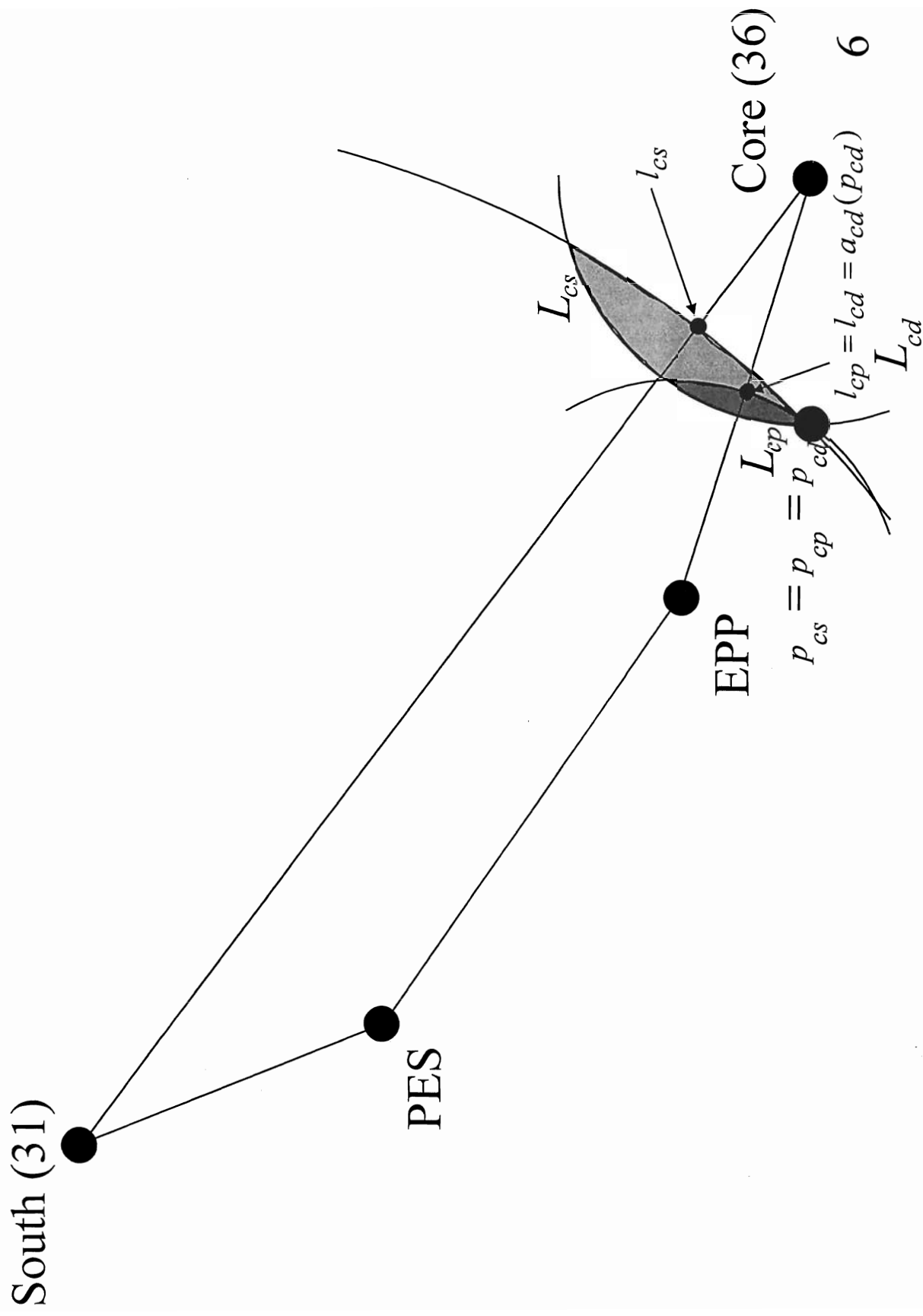


Figure 7: Equilibrium Policies.

