INTERNATIONAL UNION AND SPECIAL INTEREST POLITICS

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Abstract

Our aim in this paper is to merge the traditional literature on the determinant of success of special interest with the new political economy of international union. We study how the creation of such international arrangement can affect the ability of a group to influence decision-maker in its favor. We first create a political economy model of allocation of public spending among different interests in the society. We then apply it to an environment of International Union, which is viewed as a delegation process of a set of targeted public goods from national to a union-level of decision. We show that political integration leads to a sub-optimal allocation of public resources. Distortions appear because delegated groups can be favored at the expense of other interests in the society. In other words, the constitution of an international union per se can be viewed as a determinant of success of special interest politics. Our paper provides a theoretical framework dedicated to explain the underlying mechanism under this outcome. In order to test for the robustness of these results we also consider alternative group behaviour and decision making rules.

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1 Introduction

Last December, European Union leaders eventually set the next financial framework for the period 2007-2013. Shortly after the French and Dutch rejection of the EU constitution, the June 2005 summit opened a grand discussion "for the future of Europe". Unfortunately, six month latter the agreement painfully reached appears more like a statu quo decision and for sure did not vanish critics on the allocation of EU spending. Among many reasons, economists tend to conclude that the EU budget is highly sub-optimal (for instance the Sapir Report [20] in 2003 described it as an "historical relic"). Particularly, the fact that 42% of EU spending are allocated to agricultural policy brings many protests (besides, this figure is not expected to decrease until 2013\(^1\)). Agricultural policy was included in the Rome treaty, in a time when security of food supply was not assured and agricultural share of total employment accounted for 20 to 30% in rural countries of EU-6 (Zobbe, 2001 [22]) it was therefore mainly viewed as a common public good. Almost 50 years later agriculture represents only 3.8% of total EU-15 unemployment (and less that 2% of total GDP) and appears more like a "very successful special interest" (inequality in the distribution of CAP benefits among different activities but also among member states reinforce this view). If numerous contributions exist on the political economy of agricultural protection (for an extensive review see De Gorter & Swinner, 2002 [6]) this literature fails to emphasize the role supra-national arrangement can play on the issue of special interest politics.

How to deal with special interests in a political union belongs to the realm on what we would call today an issue of "good governance" but it is in fact a traditional question. Back in 1787 and a (successful this one!) constitutional process, founding fathers of the United States of America asked a somewhat similar question in the Federalist Papers.\(^2\) More than 200 years ago, Madison addressed the issue of "faction" which was a major concern for the thirteen states of the new union:

\[^*\text{The smaller the society, the fewer probably will be the distinct parties and interests composing it; the fewer the distinct parties and interests, the more frequently will a majority be found of the same party; and the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plans of oppression.} (...)\]

\[^1\text{Non negotiation of the CAP was guaranteed by the Franco-German agreement in 2002. On December 2005 a lowering of the well-know British "rebate" was obtained under the promise of a review of CAP spending from 2008. But many believe that, partly because of enlargement, such renegotiation is not likely to happen until 2013 anyway (see the economist December 24th-January 6th).}\]

\[^2\text{Federalist papers were written by Alexander Hamilton, James Madison, and John Jay during the years 1787-1788 for the people of New York to gain support for the proposed US constitution.}\]
As a fervent partisan of the federal power, Madison believed that higher degrees of political integration could reduce the ability of influential minorities to gain success at the expense of other interests in the society. Inconsistency between the Madisonian view and the current situation of the EU described before shows that the link between special interests and political integration is not clear-cut and has to be investigated more deeply. We thus propose in this paper a theoretical framework in order to study this relationship.

Our work relies manifestly on the traditional literature of special interest politics. Olson (1965 [15]) and latter Becker (1983 [4]) seminal works shed light on the ability of well organized groups to attract a larger fraction of common public resources at the expense of other interests. New political economy offers also greater insight on this issue. Common agency models à la Grossman & Helpman (2001;1996 [11, 6]) have been used to solve public policy issues (see for instance Persson, 1998 [16]). But groups are also able to influence non-benevolent policy makers through elections: Lindbeck & Weibull (1987 [14]), Dixit & Londregan (1996 [7]) and then Persson & Tabellini (2000 [17]) have popularized models of electoral competition. Although very useful, these analyses present the common drawback to be run in a unified framework (such as a single country) and therefore fail to take into account the role international union plays on the determinants of success of special interests.

Economic literature defines an international union as a group of countries deciding together on the provision of one or several public goods (see for instance pioneering work 3 by Alesina & al., 2005[1]). This broad definition is convenient to consider a large set of international arrangements such as monetary unions, regional trade agreements or custom unions. It traditionally assumes that public policies centralized to a supra-national level are common interests. To our knowledge only Ruta (2003 [19]) presents an analysis where special interest are concerned by political integration. One drawback of this analysis is that the creation of an international union entails an extreme distribution of public tasks so that only the alternative "no integration versus full integration" is considered. Our analysis takes place between these two polar cases and presents two advantages: it is more realistic and enables us to allow for different degrees of political integration.

Our aim is to merge traditional literature of special interest politics with the new political economy of international union. The basic intuition is that

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*Pioneering* in a sense that, so far, economic analysis usually addressed this issue with a "specialized" viewpoint depending on which kind of public policy was centralized. Alesina & al. were the first to provide a global and unified analysis of political unions.
the delegation of a special interest to a supra-national (or union) level can have consequences on its ability of influence decision maker. We first build in section 2 a basic issue of public finance displaying a conflict between different special interests and a common interest in the society. Special interests are introduced through targeted public goods. We introduce international union as a delegation process of a set of targeted public goods from national to the union level. We derive in section 3 our normative analysis both in a single country case and in the environment of an international union. We introduce politics and non-benevolent decision making in section 4. In order to display "traditional" determinant of success of special interest politics we keep the analysis in a single country case. Resolution of our political game relies on a modified version of Persson & Tabellini (2000 [17]) workhouse model of electoral competition. We apply this model in an international union in section 5. Section 6 presents some extensions of the model in order to test for the robustness of our results. Section 7 concludes. Our analysis displays a rather "anti-Madisonian argument" and shows that delegating some special interests to the union level can favor them. The underlying mechanism explaining this fact is exposed throughout the paper.

2 A simple public finance issue

In this section we present a public finance issue as simple as we can. Public decision is multi-dimensional and is based on the repartition of public resources between different interests in the society. We then build a model of international union and analyze our public issue in this more complicated framework.

2.1 Microeconomics foundations in a single country

There are $K + 1$ different groups in the society. One of these groups (we call it group $G$) is composed by individuals without special interest. Their utility function is such as:

$$W^G = y - \tau + H(G)$$  \hspace{1cm} (1)

This function is traditional in political economy literature: utility depends on a perfect substitutability between public and private consumption. $(y - \tau)$ represents income after (lump-sum) tax. We do not assume inequality in term of private consumption so these two variables are exogenous and common for everybody in the society. $G$ represents public spending for a composite global public good. It could be viewed as a bundle of global public needs such as education, justice or health care. It is provided to all individual in the single country. $H(G)$ represents utility derived from public consumption. Function $H(.)$ is both increasing ($H_G(.) > 0$) and concave ($H_{GG}(.) < 0$) with $G$. In
order to render our results as independent as possible from saturation for public consumption we assume that the degree of concavity of $H(.)$ is not too high.\footnote{More precisely, the relative index of concavity is restrained such as: $|H_{GG}(.)G/H_{G}(.)| \leq 1$. Under this restriction a large set of utility functions can apply: logarithmic functions or isoelastic functions (such as: $H(G) = G^{1-\sigma} / (1 - \sigma)$ with $\sigma \in [0;1]$).}

Other $K$ groups in the society are \textit{special interests}. Representative individual of group $k$ ($k = 1, ..., K$) has the following utility function:

$$W^k = y - \tau + H(G) + F(g^k)$$

(2)

Public consumption not only depends on the satisfaction of global public need. $g^k$ describes public spending targeted only to individuals belonging to group $k$. Club goods, regional public goods as well as targeted transfers can fit into this category. We can therefore view $F(g^k)$ as utility derived from special interest public consumption. Function $F(.)$ properties are similar to $H(.)$, including restriction on the degree of concavity.

Our public finance issue takes place after collection of public resources so that taxation rate $\tau$ is not a public policy variable in our model (in other world, we focus on the allocation of "already given" public revenues). When country size (in term of population) is equal to $N$, public budget constraint can thus be written:

$$\sum_{k=1}^{K} g^k + G = N \tau$$

(3)

In this simple framework (a single country or jurisdiction) public policy decision has $K + 1$ dimensions and can be summarized to the choice an allocation vector $\mathbf{g}$ such as: $\mathbf{g} = (G, g^1, ..., g^K)$.

2.2 Group fragmentation in a single country

We call \textit{fragmentation} the repartition of individuals among all the $K + 1$ groups in the society. This can be illustrated by a Hotelling segment where all individuals from the same group are clustered together.
We assume that $N$ is normalized to unity, $\eta \in [0; 1]$ represents size of group $G$. Special interest group $k$ size is equal to $\eta^k (1 - \eta)$ so that $\eta^k \in [0; 1]$ represents the size of each group $k$ relative to population endowed with a special interest. Group fragmentation is obviously an increasing function of the number of special interests in the society ($K$).

2.3 International union and repartition of public tasks

Assume a group of $I$ countries facing public finance issue described in section 2.1. All $K + 1$ public policy dimensions are identical between countries and each country $i$ ($i = 1, ..., I$) has a population size normalized to unity. These countries only differ in term of group fragmentation (represented by $\eta_i$ and $\eta^k_i (1 - \eta_i)$ when: $\eta_i + \sum_{k=1}^{K} \eta^k_i (1 - \eta_i) = 1$). Following Alesina & al. (2005), we assume that when these countries decide to create an international union they will produce in common a set of public goods. The decision to join the union is considered to be perfectly exogenous.

We want our model of international union to satisfy several requirements: first we only focus on the interaction between political integration and special interest politics; second our public finance issue must be easily introduced in the international union framework; third, we do not allow for an extreme and non-realistic distribution of public tasks in the union. To fulfill these needs, We create a model of international union based on a delegation process from each country to a supra-national (or "union") level of decision. We impose three assumptions:

A1 Constitutional choice: only targeted public goods are delegated to the union level.

In order to be consistent with our first requirement we take an extreme stand assuming that countries remain the only suppliers of common public needs so that $G$ cannot be delegated to the union-level.
A2 Political integration: a subset $D$ of $K$ special interests will be delegated to the union-level ($D = 1, ..., K - 1$).

International unions are usually endowed with a limited amount of public responsibilities, therefore assuming that all targeted goods are delegated to the union level could appear as a non-realistic distribution of public tasks. Ruta (2003 [19]) considers only the alternative "no integration" (which means that all public policy dimensions are in charge of national governments) versus "full integration". Our model enables us to go beyond these dual cases. An interesting feature of our model is that the number of delegated special interest ($D$) is a good index political integration between countries joining the union (it could also be interpreted as the "scope" of the union).

A3 Delegated group behaviour: once a public good is delegated, it is provided in all countries joining the union.

A public policy decision taken at the union level must be identical for all countries. This is a traditional assumption in a model of international unions but, when applied to special interests, it raises the issue of delegated groups’ behaviour. Indeed, $A3$ can only apply if identical special interests from different countries "perfectly collude" once their interest is delegated to the union level (see Ruta 2003 [19]). This uniformity of public policy decision at the union level is reflected by microeconomic foundations.

When a targeted public dimension $k$ is delegated to the union level, $A3$ implies so that, in all countries joining the union, all individuals belonging to special interest group $k$ will be provided with the same targeted public good $\tilde{g}^k$. Representative individual of group $k$ from country $i$ will therefore have the following preferences:

$$W_i^k = y - \tau + H(G_i) + F(\tilde{g}^k)$$

(2')

When this public policy dimension is not delegated and kept to the national levels of decision representative individual preferences will be:

$$W_i^k = y - \tau + H(G_i) + F(g_i^k)$$

(2'')

Assumptions $A1-A3$ enable us to introduce our public finance issue in what we call a "multi-jurisdictional model". Under this framework, public policy decision is now approached by a set of $I + 1$ allocation illustrated by figure 2 below:
Under political integration, public decision in a given country $i$, is now: $g_i = (G_i, g_i^1, ..., g_i^{K-D})$. At the union-level, public decision entails the determination of allocation vector $g_u = (\hat{g}^{K-D+1}, ..., \hat{g}^K)$. $D$ is exogenous in our model: decision on which public policy to delegate is what political economists call a "constitutional choice" and is not the subject of our study. We rather ask how the allocation of resources between all $K+1$ public policy dimension is affected by political integration.

3 Normative Benchmarks

The question raised in this section is what should be the optimal resolution of our public finance issue and how political integration should affect public decision.

3.1 In a single country

Assume a perfectly benevolent central planner in charge of the resolution of our public finance issue. Its optimization program is such as:

$$\text{Max}_{g} W^{soc} = \sum_{k=1}^{K} \eta^k(1 - \eta)W^k(g^k) + \eta_i W^G (G)$$

subject to : (3)
Remind that public decision is the choice of allocation of "already given" public resources \((\tau N)\) among our \(K + 1\) dimensions of public policy. This choice is summarized by first order conditions (hereafter FOC) of optimization program (4). First and second lines respectively describe optimal allocation conditions for targeted and common public policies:

\[
\begin{align*}
\text{for } k = 1, \ldots, K; \quad \eta^k(1 - \eta)F_g(g^k) &= 1 \\
H_c(G) &= 1
\end{align*}
\]

(5)

Traditionally, optimal allocation for a given public policy dimensions is such that its marginal benefit equals its marginal cost in term of private consumption (which is identical for all public goods and equal to 1 when \(N\) is normalized to unity). Because \(F_{g\eta} < 0\), \(g^k\) is an increasing function of \(\eta^k(1 - \eta)\). In this paper, we call discrimination the difference of treatment between groups. From (5), discrimination between two special interest groups 1 and 2 can be approached by the following index:

\[
\frac{F_g(g^I)}{F_g(g^2)} = \frac{\eta^2}{\eta^I}
\]

(6)

This index represents fair allocation of resources between two interests in the society. Considering property of function \(F(.)\) it is clear that if \(\eta^1 > \eta^2\) group 1 should receive a larger fraction of public resources than group 2. The explanation is as follow: when a targeted interest is provided to a larger fraction of total population, marginal utility associated to its consumption increases (individuals consuming this good are more willing to substitute this public consumption to private consumption) and perfectly benevolent decision maker should allocate a larger fraction of public resources to the production of this public good.\(^5\)

\(^5\)Because public decision concerns both common and special interests these microeconomic foundations are slightly different from what it is traditional found in the literature.
If these groups were equally-sized, there should be no differences of treatment and the index of discrimination would simply be equal to unity. Therefore, the only force driving allocation of public resources between our \( K + 1 \) interest in the society should be only based on groups’ share of total population. Intuitively, public policy dimension receiving the largest share of public resources should be common interest \( G \).

### 3.2 In an international union

Assume now that assumptions \( A1-A3 \) hold. Normative solution requires that public decision must be concentrated to the hands of a unique and perfectly benevolent decision maker. Timing of events will be as follow:

What political economists name constitutional choices is not the subject of our study and is considered to be exogenous in this paper. Our public finance issue takes place after such choices have been realized. Central planner decides on our public finance issue for all the union and centralizes common public resources (\( IN\tau \)). His optimization problem will be therefore:

\[
\operatorname{Max} W_{wu}^{soc} = \sum_{i=1}^{I} \frac{1}{I} \left[ \sum_{k=1}^{K} \eta_i^k (1 - \eta_i) W_i^k (d_i^k; \bar{g}_i^k) + \eta_i W_i^G (G_i) \right] \\
\text{subject to: } \sum_{i=1}^{I} \left[ \sum_{k=1}^{K-D} g_i^k + G_i \right] + \sum_{k=K-D+1}^{K} \bar{g}_i^k = I (N\tau) \tag{7}
\]

All countries have equal size (normalized to unity) so each one represents a fraction \( 1/I \) of total population of the union. Solving optimization program
(7) gives us optimal conditions in an international union. First and third lines respectively refer to optimal allocation for non-delegated and delegated public goods:

\[
\begin{cases}
\eta^k_i (1 - \eta_i) F_g (g^k_i) = 1 \\
H_G (G_i) = 1 \\
\sum_{i=1}^{I} \eta^k_i (1 - \eta_i) F_g (g^k_i) = 1
\end{cases}
\]  

(8)

When a public good is delegated, its marginal utility is affected. Because this good is provided to all countries joining the union (A3 holds) it depends on the number of individual consuming this good in each country \(i\) and consequently on total number of countries joining the union (\(I\)). As we are interested on how political integration per se affects the resolution of our public finance issue we assume that countries joining the union are perfectly symmetrical so that:

\[
\forall i, k; \eta_i = \eta \text{ and: } \eta^k_i (1 - \eta_i) = \frac{1 - \eta}{K}
\]  

(9)

For each country \(i\), non-special interest group represents an identical share of total population and all \(K\) special interest groups are equally sized. When these constraints hold, we are able to control for asymmetry so we can analyze influence of political integration "other things being equal". We can now derive the index of discrimination between a non-delegated and a delegated special interest:

\[
\frac{F_g (g^k_i)}{F_g (\check{g}^k_i)} = \frac{1}{I} < 1
\]  

(10)

Given properties of function \(F(\cdot)\), it is clear that a delegated interest will receive more public resources compared to a non-delegated one and this difference will be higher as the number of countries joining the union will rise. Nevertheless it cannot be considered as an "unfair" difference of treatment. Indeed, according to A3 a delegated public good is now provided to \(I\) times more individuals than it used to be in the single country case. Therefore common central planner needs to allocate a larger fraction of public resources to this public policy dimension.\(^6\)

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\(^6\)Note that chances for a delegated interest to receive exactly \(I\) times more public spending than a non-delegated one are limited. Condition \(\check{g}^k = I g^k\) can only be obtained under special restrictions of the degree of concavity of function \(F(\cdot)\).
4 Traditional determinants of success of special interest politics

A successful group is defined as a group receiving a larger fraction of public resources that it should have according to our normative benchmark. This obviously entails unfair treatment, which is impossible when our public finance issue is solved by a perfectly benevolent central planner. As we want to introduce a more realistic decision making process, we need to consider that public decisions are rather the outcome of a political game involving far from benevolent actors: politicians. In this section, analysis is run in a single country case which enables us to derive traditional determinants of success of special interest politics.

4.1 Introduction of politics

In real life, elections are by far the most traditional and common political game. Assume that two parties $p$ and $p'$ are competing on a one-shot election. Non-benevolence comes from the fact that both parties want to maximize their chance of being elected (which is consistent with Downs' (1957) hypothesis: suppose for instance that holding office allows them to extract some exogenous rent). To "convince" voters, they propose an allocation vector (a political platform) $g_p$ and $g_{p'}$. Resolution of our public finance issue (the political equilibrium) will be the allocation vector of elected party.

Unfortunately, because public decision is multi-dimensional, political equilibrium cannot be derived through the traditional median voter theorem (Black, 1948). We rather use a probabilistic voting model (hereafter PVM) which appears particularly well suited for our needs and are commonly used in multi-dimensional redistributions problems (see for instance Lindbeck & Weibull, 1987 [14]; Dixit & Londregan, 1996 [7]). In this section and in the following one we adapt the model of Persson & Tabellini (2000 [17]) in order to describe changes in microeconomic foundations induced by politics. The basic idea (which is common to all PVM) is that individuals' choice will not only be drawn by political platforms proposed but also by some exogenous preferences (a "political bias") for one of the two Downsian parties. Therefore in a world with politics an individual $j$ of group $k$ (the same thing applies for group $G$) has the following preference:

$$U_{jk}^{p,p'} = W^k(g_{p,p'}) + \theta^{jk}D_p$$

For instance an individual can have a preference for one of the two candidates because he belongs to the same community, share the same religion or ideology.
Vote behaviour is twofold. On one hand individuals are opportunistic so they prefer a party proposing a political platform favouring their group. But on the other hand voters have a political bias for one of the two parties (this could be understood as a form of ideology). \( D_p \) is a "political" dummy variable representing the winner’s party of the electoral competition (if \( p \) wins \( D_p = 1 \) otherwise \( D_p = -1 \). Therefore, if \( \theta^{jk} > 0 \) voter \( j \) will have a satisfaction based only on the fact that party \( p \) holds office. On the contrary, negative values for \( \theta^{jk} \) describe a political bias for \( p' \). Besides, high absolute value for \( \theta^{jk} \) reveals that vote behaviour of individual \( j \) from group \( k \) highly depends on ideology. Following Persson & Tabellini (2000) and Grossman & Persson (2002) we assume that the repartition of political bias within a group \( F(\theta^{jk}) \) follows a very simple uniform distribution law on the interval \( \left[ -1/2\phi^k, 1/2\phi^k \right] \) (the same thing applies for group \( G \)). This is particularly convenient because \( \phi^k \) \((\phi^G)\) can summarize vote behaviour "on average" within a group. Take for instance two different groups 1 and 2, it is clear that if \( \phi^1 > \phi^2 \) group 1 voting behaviour is "on average" more opportunistic whereas group 2 is composed by a greater number of very ideological individuals.

\[
\begin{align*}
\theta^{jk} &\sim U(-\frac{1}{2\phi^k}, \frac{1}{2\phi^k}) \\
\phi^1 &> \phi^2
\end{align*}
\]

figure 4: distribution of political bias

4.2 Political equilibrium without collective action

Assume that parties, perfectly informed by the distribution of political bias in each group, set their political platform in order to maximize the proportion of individuals voting for them. Therefore party \( p \) maximization program will be:
\[
\max_{\mathbf{g}_p} \Pi_p (\mathbf{g}_p ; \mathbf{g}_{p'}) = \sum_{k=1}^{K} n^k (1 - n) S_p^k (\mathbf{g}_p ; \mathbf{g}_{p'}) + n S_p^G (\mathbf{g}_p ; \mathbf{g}_{p'}) = -\Pi_{p'}
\]

subject to: (3)

Party \( p \) payoff function simply states that its chance to be elected depends solely on the number of ballot it receives. \( S_p^k (G) \) represents the proportion of voters in group \( k \) \((G)\) willing to vote for party \( p \) once both parties have displayed their allocation vector (see appendix 1). Because country population has been normalized to unity, \( n^k (1 - n) S_p^k \) (respect. \( \eta S_p^G \)) represents the total number of individuals from group \( k \) (respect. \( G \)) voting for party \( p \). As appendix 1 demonstrates, it can be easily shown that payoff functions of the two parties are perfectly symmetrical so that \( \Pi_{p'} (\mathbf{g}_p ; \mathbf{g}_{p'}) = -\Pi_p (\mathbf{g}_p ; \mathbf{g}_{p'}) \). Timing of events are as follow:

\( t_1 : p \) and \( p' \) simultaneously and non-cooperatively decide on a political platform. \( t_2 : \) Elections are held. \( t_3 : \) Elected decision maker solves our public finance issue.

First stage of the game obviously involves that the result of this electoral competition will be a Nash equilibrium. Because of the symmetry of payoff functions political competition will drive both parties to propose an identical allocation vector at stage 2. Therefore political equilibrium derived at stage 3 is independent on which party holds office. Political equilibrium is therefore described by the following FOC:

\[
\left\{ \begin{array}{l}
\frac{n^k (1 - \eta) \phi^k}{\sum_{k=1}^{K} n^k (1 - \eta) \phi^k + \eta \phi^G} F_g (g^k) = 1 \\
H_G (G) = 1
\end{array} \right. \tag{13}
\]

\( n^k (1 - \eta) \phi^k \) can be interpreted as the political weight of special interest group \( k \) depending on its relative size \((n^k (1 - \eta))\) on its average distribution of political bias \((\phi^k)\). Indeed as \( \phi^k \) takes higher values, individuals composing this group are on average less ideological in their voting behaviour (in other words they can
be "convinced" at lower cost by Downsian parties) so their influence is greater. Indeed, in a world where public decision is taken by non-benevolent actors, opportunistic groups are "cheaper to buy" so they are favoured by Downsian parties. Difference of treatment between two special interest groups 1 and 2 can now be written:

$$\frac{F_g(g^1)}{F_g(g^2)} = \frac{\eta^2 \phi^2}{\eta^1 \phi^1}$$  \hspace{1cm} (14)

When we take into account politics, two equally-sized groups can now be treated differently by policy-maker. Indeed, even if $\eta^1 = \eta^2$, group 1 will be favoured at the expense of group 2 if $\phi^1 > \phi^2$. When we control for the distribution of political bias among group ($\phi^k = \phi^G = \phi$) comparison with FOC (3) clearly shows that distortions disappear: in this case a group’s influence is perfectly cancelled out by the others.

4.3 Political equilibrium with collective action

We now allow for collective action and lobbying. Indeed, chances to be elected for a party does not entirely depend on political platform proposed: in the real world political rallies, TV or radio announcement influence voters and dramatically increase the ability to attract votes (see for instance Baron (1994 [3]) and Strömberg (2004 [21])). Political advertisement is often financed by special interest groups expecting to be rewarded by this contribution.\(^8\) Party $p$ pay-off function can thus be enriched including lobbying so that its optimization behaviour can now be written:

$$\max_{g_p} \Pi_p = \alpha \left\{ \sum_{k=1}^{K} n^k (1 - n) S^k + n S^G_p \right\} + (1 - \alpha) \left\{ \sum_{k=1}^{K} (C^k_p - C^k_{p'}) \right\} = -\Pi_p$$  \hspace{1cm} (15)

$C^k_p$ is the amount of contribution given by group $k$ to party $p$. Chances for party $p$ to be elected are increasing with contributions received and decreasing with contribution given to $p'$. Parameter $\alpha \in [0; 1]$ describes how much parties rely on lobby. When $\alpha = 1$ collective action is not allowed and we return to the "pure" electoral competition as it is exposed in the previous section.

\(^8\)See Grossman & Helpman, 2001 [12] for an extensive study on special interest politics.
We need now to describe more precisely collective action of lobbying. As we can already notice on equation (15) we consider that only special interest groups make contributions. Justifications can be provided by the Olsonian literature: controlling free-riding inside group $G$ is assumed to be too expensive so it cannot afford to run a collective action. We assume that a special interest group $k$ choice to contribute will depend on the following objective function:

$$
V^k = \Pi_p W^k_p + \Pi_{p'} W^k_{p'} - \frac{1}{(1 - \gamma^k) \eta^k} \left[ \frac{(C^k_A)^2}{2} + \frac{(C^k_B)^2}{2} \right] \tag{16}
$$

A special interest group wants to maximize its expected utility derived from the resolution of our public issue but has also to take into account the cost of collective action. We introduce parameter $\gamma^k \in [0; 1]$ which is a fixed cost of contribution. We assume this expenditure to be a decreasing function of the relative size of group $k$ among total contributors ($\eta^k$): as a group represents a larger fraction of total contributors it can afford to run a collective action at lower cost (this could be interpreted as an economy of scale effect in lobbying action).

Having defined both parties’ and groups’ behaviour, timing of the political game is now enriched such as:

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Lobbying is included in a slightly differently way compared to the "pure" lobbying games à la Grossman & Helpman (1994 [10]). Such common agency models where groups propose a contribution schedule before parties set their policies are very convenient by less tractable when combined with electoral competition. We rather take Persson & Tabellini (2000) formulation where parties

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\[9\] Nevertheless, our formulation differs slightly from theirs: in Persson & Tabellini (2000) lobbying is introduced through a random variable of average popularity for each party which can be influenced by groups contribution.
move first. Under this timing of events, lobbying is used more to reward parties. At stage 2 special interest groups independently decide on a contribution schedule maximizing (16) which gives us:

\[ C^k_p = (1 - \alpha)(1 - \gamma^k) \eta^k (W^k_p - W^k_{p'}) = -C^k_{p'} \quad (17) \]

Group \( k \) will give a contribution to party \( p \) if and only if \( W^k_p - W^k_{p'} > 0 \) (contributions cannot be negative), otherwise this group will lobby for \( p' \). There will be no contributions at all from group \( k \) when collective action is too expensive (\( \gamma^k \rightarrow 1 \)) or from any group if lobby is not allowed \( \alpha = 1 \). This lobbying behaviour is taken into account by Downsian parties at stage 1 when they set their political platform (we include (17) in (15): therefore changing timing of events do not alter the incentive function of contributions). Under this new political equilibrium, allocation of public resources for a targeted policy is now:

\[ \frac{\alpha \left[ \eta^k(1 - \eta)\phi^k + (1 - \alpha)^2 [(1 - \gamma^k) \eta^k] \right]}{\alpha \sum_k \eta^k(1 - \eta)\phi^k + \eta\phi^G + (1 - \alpha)^2 \sum_{k=1}^K (1 - \gamma^k) \eta^k} F_g (g^k) = 1 \quad (18) \]

A special interest group’ political weight now also depends on parameter \( \gamma^k \), which has to be taken into account when we study difference of treatment between two groups. Assuming that \( \alpha \rightarrow 0 \), enables us to focus on discrimination only based on their ability to run a collective action.

\[ \frac{F_g (g^1)}{F_g (g^2)} = \frac{\eta^2(1 - \gamma^2)}{\eta^1(1 - \gamma^1)} \quad (19) \]

More precisely, this index is a measure of the relative cost of contribution between two groups. It is clear that unfair treatment could arise: if \( \gamma^1 < \gamma^2 \) group 1 would be able to run a collective action at lower cost than group 2 and would be favoured by Downsian parties.\[ \text{\cite{10}} \]

\[ \text{\footnotesize \cite{10} When collective action is allowed normative analysis is less clear-cut compared to the pure electoral competition case. Indeed assuming that fixed cost of collective action is identical among all special interest groups (\( \forall k; \gamma^k = \gamma \)) does not reduces all forms of distortion in the resolution of our public finance issue. The explanation comes from the fact that non-special interest group \( G \) does not contribute.} \]
4.4 Summary on the traditional determinants of success

Sub-optimality in the resolution of our public finance issue is explained by the introduction of non-benevolent decision making. Indeed, some groups are now able to attract a larger fraction of common resources than they “should” receive at the expense of others. Politics introduces a competition between these different interests in the society. Exogenous features such as a group electoral appeal ($\phi$) and its ability to run a collective action ($\gamma$) will be rewarded by Downsian parties. These basic characteristics distinguishing groups are considered in our study as the traditional determinants of special interest politics.

5 International union and politics

We now introduce our public finance issue in an international union environment. Contrary to the normative benchmark case, we consider a "realistic" decision making process introducing politics.

5.1 International union and politics: a few assumptions

Assume that A1-A3 hold. We depart from the normative benchmark and the central planner solution considering that public decision is no longer concentrated to the hands of a single decision maker. As figure 2 displays, public decision in an international union entails two levels of decision and involves $I+1$ actors (or jurisdictions). This requires setting a few more assumptions in order to describe how international union and politics co-exist.

A4 Multi-jurisdictional political game: public decision in an international union entails the resolution of $I+1$ political games. They are perfectly identical and take place simultaneously.

On each jurisdiction, two Downsian parties compete and propose an allocation vector. We apply political process exposed in the previous section in all $I+1$ jurisdictions. Assuming identical political games enables us to hold other things constant when we compare the international union with the single country case (remind that our aim is to "isolate" the pure effect of political integration on the resolution of our public finance issue).
In the single country case, we assumed all individuals to be voters. In our multi-jurisdictional political game, it is not realistic to assume that voters participate in all \( I + 1 \) elections. We thus need a realistic rule describing the "distribution" of voters among the different electoral competitions. We want this rule to be as simple and realistic as possible:

**A5 Repartition of voters among political games:** an individual participate in the political game that "takes care of his interest", this entails:

1. individual from country \( i \) will participate in country \( i \) political game but will not vote for others \( I - 1 \) political games.

2. only members of a group whose special interest has been delegated participate in the union-level political game.

Assumption A5-1 is quite obvious and realistic. A "soft" version of A5-2 would be to consider that delegated groups care more about the union-level electoral competition that non-delegated ones but it would complicate derivation of our political equilibrium without changing the results.

### 5.2 Political equilibrium

Because of the multi-jurisdictional nature of public decision we need to distinguish parties’ payoff functions according to which level of decision is considered. Besides public ressources cannot be centralized as in the normative benchmark
case. Following Assumption A5-1, a Downsian party from country $i$ will have the following optimization behavior:

\[
\text{Max } \Pi_{ip} = \sum_{k=1}^{K} n_i^k (1 - n_i) S_{ip}^k + n_i S_{ip}^G = -\Pi_{ip'}
\]

subject to:

\[
\sum_{k=1}^{K-D} g_i^k + G_i = N\tau
\]

At the union level, Downsian parties will maximize the proportion of votes they can receive. Following assumption A5-2, their optimization behavior can be described as:

\[
\text{Max } \Pi_{up} = \sum_{k=K-D+1}^{K} \sum_{i=1}^{I} n_i^k S_{up}^k = -\Pi_{up'}
\]

subject to:

\[
\sum_{k=K-D+1}^{K} \tilde{g}_i^k = I (N\tau)
\]

Parameter $\tilde{n}_i^k$ (with $k = K - D + 1, ..., K$) describes the relative size of delegated group $k$ from country $i$. Following A5, identical special interests from different countries perfectly collude so that $\tilde{n}_i^k$ represent the proportion of individuals consuming $\tilde{g}_i^k$ among all voters at the union-level. Figure 6 illustrates group fragmentation at the union level, which depends both on the number of countries joining the union ($I$) and on the degree of political integration ($D$):

![figure 6: group fragmentation at the union level](image-url)
When A1-A5 holds, timing of events is now:

Constitutional choices
(t₀): an international union is created between I countries - a sub-set D of K targeted public goods are delegated to the union-level.

$t_1$: p and p’ simultaneously and non-cooperatively decide on a political platform on each political game (A4 applies).

$t_2$: elections are held simultaneously.

$t_3$: decision maker on each jurisdiction simultaneously and non-cooperatively decide on the repartition of common public resources.

At time 3, each I + 1 decision maker has a "public policy stance" which is determined in time 1 by electoral competition. This multi-jurisdictional political game is simplified by the fact that electoral competition taking place in all jurisdictions drives Downsian parties to propose identical allocation vectors. Therefore decision maker policy stance at a national or at the union level is perfectly independent on which party wins. Public decision is therefore the solution of a Nash equilibrium involving I + 1 players. First order conditions represent each policy maker reaction function at time 3:

$$
\begin{align*}
\text{for } k = 1, \ldots, K - D: \quad & \frac{\eta_i^k (1 - \eta_i) \phi^k}{\sum_{k=1}^{K} \eta_i^k (1 - \eta_i) \phi^k + \eta_i \phi^*} F_g (\tilde{g}_i^k) = 1 \\
\text{for } k = K - D + 1, \ldots, K: \quad & \frac{\tilde{\eta}_i^k \phi^k}{\sum_{i=1}^{I} \sum_{k=K-D+1}^K \tilde{\eta}_i^k \phi^k} F_g (\tilde{g}_i^k) = \frac{1}{7}
\end{align*}
$$

Comparing with equation (8), it is clear that this political equilibrium cannot reach optimality even if \( \forall k; \phi^k = \phi^G = \tilde{\phi} \). We therefore have to conclude that the constitution of a political union per se is a source of distortion. To determine the causes of this sub-optimality we first control for the "traditional" source of distortion and assume that countries joining the union are perfectly symmetrical (so that restriction (9) applies).\(^{11}\) Equilibrium allocations for targeted public policies in an international union now become:

\[^{11}\text{Under these restrictions, } \tilde{\eta}_i^k = 1/ID \text{ so that: } \tilde{g}_i^k = 1/D\]
Discrimination analysis between a delegated and a non-delegated interest becomes straightforward:

\[
\frac{1 - \eta}{K} F_g (g_i^k) = 1
\]

\[
\frac{I}{D} F_g (\tilde{g}^k) = 1
\]  

(23)

Obviously introduction of politics leads to an unfair difference of treatment between a delegated and a non-delegated group. We illustrate this first source of sub-optimality on the left box of figure 7, which displays a simple comparative static analysis between political equilibrium obtain in this section and normative requirements derived in section 3. We illustrate the single country case (i.e. when \( D = 0 \)), where (under our restriction) there should be no differences of treatment between two special interest groups. Comparison with (10) tells us that the constitution of an international union is a source of distortion (sub-optimality is represented by the hatched area).\(^{12}\) Sub-optimality reaches its peak at first stage of political integration (i.e. \( D = 1 \)) and decreases afterwards.

We investigate a second source of sub-optimality analyzing the amount of public resources allocated to a common interest in a country both in a single country case and under international union. We derive this amount both in the normative benchmark case and according to the political equilibrium described by (22) (these amount are respectively \( G^* \) and \( G(D) \) and are equal in each countries because of restriction (9) applies). Once again we run a basic comparative static analysis where hatched area on the right box of figure 7 measures \( \Delta(D) = |G^* - G(D)| \). It is clear that a similar patter appears: first stage of political integration is highly sub-optimal whereas distortions are reduced as more public tasks are delegated to the international union.

\(^{12}\)Note that it is always true because condition for optimality would require \( 1 - \eta = K \) which is clearly impossible because \( \eta \neq 0 \) and \( K \) is an integer.
Political integration *per se* is therefore a source of distortion: delegated groups are too much favored both at the expense of non-delegated special interest and common interest in the society. An increasing degree of political integration (in other words: a greater scope for the international union) can be interpreted as a "second best".

### 5.3 Political equilibrium with collective action

The extended political process presented in section 4.3 is now introduced in our multi-jurisdictional political game. Pay-off functions and political equilibrium are exposed in Appendix 3. A1-A5 apply but we need to add a last assumption related to lobbying behaviour under political integration:

**A5bis Lobbying behavior under political integration:** delegated groups give contribution only to Downsians party at the union-level.

Once again this hypothesis on group behavior is based on the basic principle that individuals will be more willing to participate in a political game that takes care of their interest. Under this setting, timing of events is now:
Assume that $\alpha \to 0$ and that condition (9) applies. Assume also that all groups have the same ability to run a collective action so that $\forall k; \gamma^k = \bar{\gamma}$. Under these restrictions, the discrimination index between delegated and non-delegated groups will be:

$$\frac{F_g (\hat{q}^k)}{F_g (\hat{q}^\ell)} = \frac{D}{K - D} \neq 1$$

(25)

As we have mentioned in sub-section 4.3 this index must be read as a measure of relative cost of collective action. In the single country case, and under our restrictions, this index should be equal to unity (see equation 19). It is clear, as figure 8 illustrates, that both the creation of an international union and increasing political integration will largely affect this measure. Particularly, first stages of political integration dramatically reduce the cost of lobbying for a delegated group and makes them better off.
5.4 International union and politics: explanation

The main conclusion of this section is that the creation of an international union per se has an effect on special interest success. This is true even when we control for traditional determinants of success (i.e. when restrictions such as \( \forall k; \phi^k = \phi^G = \bar{\phi} \) and: \( \forall k; \gamma^k = \bar{\gamma} \) apply). As we have seen in the previous section, non-benevolence induces a competition between groups in order to gain favor from non-benevolent policy-maker. In our multi-jurisdictional political game, the major consequence of political integration is to change the “rules” of this competition. The basic explanation comes from the dispersion of public tasks among the different levels of decision and the distribution of groups between different political games. The underlying mechanism is described by the conditionality of group fragmentation.

Considering first a pure electoral competition where groups’ success relies only on their electoral appeal. At the national levels Downsian parties are required to seek the support of all \( K + 1 \) groups (indeed even delegated group vote because they are provided with common public good \( G \)), whereas at the union level Downsian parties only "chase" delegated groups. This distribution of interests between different levels of decision explains why group do not have the same ability to be favored by Downsian parties in an electoral game. Group fragmentation is a good measure of the intensity the competition taking place...
between groups. Particularly at first stages of political integration, group fragmentation is much higher at national levels compared to the union level so that delegated groups can more easily receive favors from Downsian parties.

The creation of an international union has also a major influence of the ability of a group to run a collective action. Cost associated to lobbying action for a group depends on a fixed element but also on its size relative to total contributors on a political game. When group fragmentation is low at the union level, each delegated group represents a larger fraction of total contributors and can thus run a collective action at lower cost. This prior advantage decreases as more groups (and therefore more competitors) are participating to this supranational political game.

Consequently, our purpose to build a multi-jurisdictional model of political integration is justified. Failing to take into account dispersion of public decision in an international union could underestimate the ability of some groups to take advantage of the non-benevolence of policy making (particularly it limits the analysis to traditional determinants). The creation of an international union and the degree of political integration \( D \) can be viewed as major determinants of success of special interest politics.

6 Extensions

Thanks to assumptions \( A1 \) through \( A5 \) we have been able to build a multi-jurisdictional model of international union. We have shown that delegated special interest could largely be favored by political integration. Dropping some of these assumptions can now be useful both to test for the robustness of the model and to address more specific issues such as group behaviour in an international union or the formation of public policies in a supranational environment.

6.1 International Fragmentation

Assumption \( A3 \) guarantees that public decision taken at the union level is imposed uniformly in all member countries. As we have mentioned before, this assumption is induced by a specific behaviour of special interest groups. Because all \( K + 1 \) public policy dimensions are perfectly identical among all \( I \) countries we basically assumed that identical groups form different country will perfectly collude at the union level. Nevertheless, as Ruta (2003 [19]) points out, many factors can prevent them to create such an homogeneous group. In our study, we call "international fragmentation" the extreme situation where identical groups from different countries do not collude at all and have a conflicting interest.

Under international fragmentation, Assumption \( A3 \) no longer applies so that identical groups from different countries will be provided with a different targeted public good. This clearly affect public decision at the union level which
is now: $\mathbf{\hat{g}}_u = (\hat{g}_1^{K-D+1}, \ldots, \hat{g}_1^K)$. International fragmentation will change microeconomic foundations so that representative individual of delegated group $k$ from country $i$ will have the following preferences:

$$W_i^K = y - \tau + H(G_i) + F(\hat{g}_i^k) \tag{2ter}$$

Political game exposed in section 5.2 still applies: $I+1$ electoral competitions take place simultaneously in each jurisdiction and we do not allow for collective action. Optimization behaviors at the national levels do not change and are still described by (19). On the contrary, public policy stance at the union level has to take into account international fragmentation so that electoral competition between each Downsian parties will be based on the following optimization behaviour:

$$\begin{aligned}
\max_{\mathbf{\Pi}_{up}} & = \sum_{k=K-D+1}^K \sum_{i=1}^I \mathbf{\eta}_i^k \mathbf{S}_{up}^k = -\Pi_{up'} \\
\text{subject to: } & \sum_{i=1}^I \left[ \sum_{k=K-D+1}^K \hat{g}_i^k \right] = I(N\tau) 
\end{aligned} \tag{26}$$

At time $3$, reaction function of decision maker at the union-level will be:

$$\frac{\sum_{i=1}^I \sum_{k=K-D+1}^K \mathbf{\eta}_i^k \phi^k}{\sum_{i=1}^I \sum_{k=K-D+1}^K \mathbf{\eta}_i^k \phi^k} F_g(\hat{g}_i^k) = \frac{1}{I} \tag{27}$$

When condition (9) applies and if we control for traditional source of distortion, index of discrimination between a delegated and non-delegated special interest will be:

$$\left. \frac{F_g(\hat{g}_i^k)}{F_g(\hat{g}_i^k)} \right| = \frac{D(1-\eta)}{K} \tag{28}$$

A misleading analysis would be to compare this index with the one derived by the normative solution in section 3.2 (see equation 10). Indeed, when $A3$ does not hold, normative solution is also affected so that our normative analysis must take into account international fragmentation.\textsuperscript{13} Under this setting,
a fair index of discrimination would be equal to unity. As Figure 9 illustrates discrimination should not be changed by political integration. Indeed, international fragmentation makes that a delegated public good is not provided to a larger number of individuals (as it is when \( A3 \) holds). Nevertheless, sub-optimality described by the hatched area perfectly follows the pattern exposed in section 5.2.\(^{14}\)

\[
\begin{align*}
F_s (g_i^k) \\
F_s (\bar{g}_i^k)
\end{align*}
\]

**figure 9: normative analysis under international fragmentation**

Therefore, considering alternative group behaviour does not affect our results: international union by itself creates sub-optimality and higher degrees of political integration can be viewed as a second best.

### 6.2 International Bargaining

The resolution of our public finance issue at time 3 is based on a Nash equilibrium between \( I + 1 \) decision makers. Assumption \( A4 \) assures that political process deciding on each public policy stance is identical both at national and the union-levels. Election are by far the most common political game at the national level but can appear less relevant when applied to the union level. Indeed, the formation of supra-national public policies relies more on a committee game composed of national representatives (such as in the EU council).

International bargaining may be understood as a direct consequence of international fragmentation: national representatives in the council tend to defend interests of "their" domestic groups. We thus derive our political equilibrium

\(^{14}\)Although it is not exposed in this paper, the second source of sub-optimality coming from the penalization of common interest follows a similar pattern to right box of Figure 7.
when \( A3 \) does not hold and modify \( A4 \) in order to take into account the particularity public policy decision at the union level. We therefore assume that political games still take place simultaneously on each jurisdiction but they are considered different between the national and the union levels.\(^1\) At the national level, decision maker policy stance remains determined by a traditional game of electoral competition (we do not allow for collective action). Whereas at the union level, we assume that a committee game takes place. We only consider first stage of political integration in this sub-section (so that: \( D = 1 \)), this enable us to apply a traditional model of legislative bargaining in a style of Baron & Ferejohn (1989 [3]) and Helpman & Persson (1998 [13]).

Timing of this committee game is as follow: \( \theta \) a country \( i (= a) \) is exogenous chosen to be an "agenda setter" and makes a proposal to other members of the committee; \( \iota \) agenda setter country proposes an allocation vector \( \vec{g}_{ua} \); \( \iota \) representative countries vote on the proposal; \( \iota \) a public policy stance is adopted at the union level. At time \( \iota \), agenda setter country’s proposal will become the policy stance of the union government only if a majority of countries vote in favour of \( \vec{g}_{ua} \). If it is rejected, a "statu quo" solution (\( \vec{g}_u \)) will be applied.

Bargaining arises because each national representative choice (as voter or agenda setter) is made in order to gain favor for "its" domestic interest group (each country defends only one group because \( D = 1 \)) so that \( \forall i; \Pi_i = W_i^k (\vec{g}_{ua}; \vec{g}_a) \) with \( k = 1 \). Agenda setter selects an allocation vector \( \vec{g}_{ua} \) considering the following optimization behaviour:

\[
\begin{align*}
\text{Max} & \Pi_a = W_a^{k_a} \\
\text{subject to:} & \Pi_i (\vec{g}_{ua}) \geq \Pi_i (\vec{g}_a) \quad (\text{for } i \in M) \\
\text{subject to:} & \sum_{i=1}^{\iota} \left[ \sum_{k=K-D+1}^{K} \vec{g}_i^k \right] = I (N\tau) \\
\end{align*}
\]

Country \( a \) sets an allocation vector so as to maximize utility of "its" delegated group. In order to make this proposal accepted by the committee, \( \vec{g}_{ua} \) must satisfy an incentive compatibility constraint for a majority of countries (\( M \) is a sub-set of \( I \) so that \( M \geq \frac{I-1}{2} \)). \( FOC \) representing the equilibrium amount of public resources allocated to group \( k (= 1) \) from country \( a \) is:

\[
F_g (g_a^k) = \frac{1}{I} \frac{1}{1-\Psi} \text{ with: } \Psi = \frac{1}{I} \sum_{i=1}^{(I-1)/2} \frac{1}{F_g (g_i^k)}
\]

\(^1\) Considering sequential rather than simultaneous games would implicitly introduce a rule a public finance between the national and the union level of decision which is not the topic of our paper.
Agenda setter country proposes an incentive scheme for all other groups in the committee maximizing its domestic interest. Only countries whose group are "cheapest" to buy will be part of the majority (i.e. groups with the lowest default pay-off $\tilde{g}_k^i$). $\Psi$ can be understood as the cost of establishing a majority for the agenda setter. Because incentive constraint is binding, groups in the majority can only obtain for their group the statu quo solution so that $F_g (\tilde{g}_i^k) = F_g (\tilde{g}_{\tilde{i}}^k)$ (for $i \in M$). For all other groups ($i \notin M$), $F_g (\tilde{g}_i^k) = 0$. Such a large disparity of treatment between groups is a traditional result of committees political games.

6.3 Summary on extensions

Prior advantage of delegated groups exposed in section 5 does not come from collusions between special interests at the union level. When we take an extreme stand by dropping assumption A3 sub-optimality still occurs. Considering an alternative decision-making process at the union-level reinforce our statement and introduces disparities among delegated groups.16

When sections 5 and 6 are taken together, we are endowed with two major alternatives. First an alternative concerning delegated groups behaviour: we have considered either absence or perfect international fragmentation. Second an alternative concerning the political process at the union level: it can be either a perfect electoral competition or a simple committee game. Obviously, reality lies between these polar cases. Incentives to collude between two identical delegated special interests at the union level depend on many factors (such as asymmetries between countries or public policy considered). Besides political game at the union level can be based both on electoral competition and supranational committees (in the European Union where Parliament and EU council are both major actors in the formation of public policies). The major advantage of our model is to provide a unified framework able to display a global approach on these issues.

7 Concluding remarks

The main statement of this paper is that political integration per se is a major determinant of success of special interest politics. Delegation affects the rules by which groups obtain favors from non-benevolent decision makers. Delegated groups are particularly better-off at first stage of political integration. Our model allows us to consider different degrees of political integration between countries. Under this framework, increasing political integration can be used in order to reduce the prior advantage of delegated groups.

16 Much work remains to be done on how special interest success can be determined under a political game of committee (see Felgehauer & Grüner, 2003 [9])
Much work remains to be done on the analysis of special interest politics in an international union. We have focused our analysis on differences of treatment between delegated and non-delegated interests, but political integration is also likely to change the repartition of public resources between delegated groups as well (we promptly addressed this question in the very last sub-section). Besides it would be interesting to run an analysis on optimal public finance rules under this setting.

More importantly, we have attempted in this paper to show evidences that not taking into account dispersion of public decision in an international union can be misleading. We believe that our multi-jurisdictional view could be applied to other public finance issues raised by political integration.

Although we did not directly address this issue, the question of which public policy to delegate to the union-level can be addressed. Our results clearly state that the delegation of special interests (Assumption A1) is a "bad" constitutional choice. This conclusion is consistent with recent normative analysis, derived from the traditional theory of fiscal federalism: delegation to the union-level should only concern global interest involving large economies of scale.
Appendix 1: symmetry of payoff functions

Downsian parties $p$ and $p'$ set their political platform $g_p$ and $g_{p'}$ so as to try to maximize the number of votes they can receive. In each group $k$ (the same thing) for a particular set of allocation vectors for instance $\{g_p; g_{p'}\}$ proposed by the two parties at stage 1 there will always be an individual endowed with political bias $\theta^k$ indifferent between the two parties:

$$\theta^k(g_p; g_{p'}) = \frac{W^k_p(g_p) - W^k_{p'}(g_{p'})}{2} \Rightarrow U^1_a(g_p) \equiv U^1_b(g_{p'})$$

For these particular political platforms proposed, every individual from group $k$ endowed with a political bias greater (lower) than $\theta^k(g_p; g_{p'})$ will vote for party $p$ (respectively $p'$). Given the distribution of political biases, $S^k_p$ (the proportion of voters in group $k$ willing to vote for $p$) can be illustrated by the figure below:

When $p$ and $p'$ respectively propose $\{g_p; g_{p'}\}$ proportion of voters in group $k$ willing to vote these parties can be written:

$$S^k_p = \phi^k \left[ \frac{1}{2\phi^k} - \hat{\theta}^k(g_p; g_{p'}) \right] = \phi^k \left[ \frac{1}{2\phi^k} - \frac{W^k_p(g_p) - W^k_{p'}(g_{p'})}{2} \right]$$

$$S^k_{p'} = \phi^k \left[ \hat{\theta}^k(g_p; g_{p'}) + \frac{1}{2\phi^k} \right] = \phi^k \left[ \frac{W^k_p(g_p) - W^k_{p'}(g_{p'})}{2} + \frac{1}{2\phi^k} \right]$$

It is therefore obvious that: $\forall k, S^k_p = -S^k_{p'}$ and because the same thing applies for group $G$, $S^G_p = -S^G_{p'}$. Given payoff functions described by (12) we obtain $\Pi_p = -\Pi_p$. Downsian parties payoff function are perfectly symmetrical,
besides $p$ and $p'$ face the same budget constraint (3) so the outcome of their optimization behaviour will be identical and parties will end up proposing the same political platform.

**Appendix 2: determination of the amount of public ressources allocated to common interest (G)**

**Normative Benchmark ($G^*$)** Optimal allocation of public spendings are described by FOC (9) if we control for asymetry normative solutions can now be written such as:

\[
\begin{align*}
&\frac{1}{K} F_g (g^k) = 1 \\
&H_G (G) = 1 \\
&I \frac{1}{K} F_g (\bar{g}^k) = 1
\end{align*}
\]

Because all groups have the same size, $\forall i; g^k_i = g^k$ and $G_i = G$. Under these restriction, budget constraint (4) is now:

\[
IN = I(K - D) g^k + IG + D \bar{g}^k
\]

Without loss of generality assume that $H$ and $F$ are isoelastic functions so that $F(g) = g^{1-\sigma}$ and $H(G) = G^{1-\sigma}$. The optimal fraction of public ressources allocated to common interest is identical for each country $i$ an is equal to:

\[
G^* = \frac{IN}{I(K - D) \left[ \frac{1}{K} \right]^{1/\sigma} + I + D \left[ I \frac{1}{K} \right]^{1/\sigma}}
\]

**Political equilibrium ($G_d$)** Allocation of public spendings in the union are described by FOC (21). If we control for asymetry political equilibrium can now be written:

\[
\begin{align*}
&\frac{1}{K} F_g (g^k) = 1 \\
&H_G (G) = 1 \\
&I \frac{1}{K} F_g (\bar{g}^k) = 1
\end{align*}
\]

Using the simplified budget constraint, the fraction of public ressources allocated to common interest is:
\[ G_d = \frac{\text{IN}_\tau}{I (K - D) \left[ \frac{1-n}{K} \right]^{1/\sigma} + I + D \left[ \frac{I}{D} \right]^{1/\sigma}} \]

Appendix 3: international union and collective action

When \( A1-A5(bis) \) apply Downsian parties optimization behavior at the national level will be

\[
\max \Pi_{ip} = \alpha \left\{ \sum_{k=1}^{K} n_i^k (1-n_i) S_{ip}^k + n_i S_{ip}^G \right\} + (1-\alpha) \left\{ \sum_{k=1}^{K-D} (C_{ip}^k - C_{ip'}^k) \right\} = -\Pi_{ip'}
\]

subject to : (3)

Because \( A5bis \) applies national Downsian parties cannot be lobbies by delegated groups so the total amount of contributions party \( p \) can receive is: \( \sum_{k=1}^{K-D} C_{ip}^k \). At the union level decision maker behavior is such as :

\[
\max \Pi_{up} = \alpha \left\{ \sum_{k=K-D+1}^{K} \sum_{i=1}^{I} \tilde{n}_i^k S_{up}^k \right\} + (1-\alpha) \left\{ \sum_{k=K-D+1}^{K} (C_{up}^k - C_{up'}^k) \right\} = -\Pi_{up'}
\]

subject to : \( \sum_{i=1}^{I} \left[ \sum_{k=K-D+1}^{K} \tilde{g}_i^k \right] = I (N\tau) \)

Following \( A5bis \), objective function of a non-delegated group from country \( i \) will be:

\[
V_i^k = \Pi_{ip} W_{ip}^k + \Pi_{ip'} W_{ip'}^k - \frac{1}{(1-\gamma^k)} \sum_{k=1}^{K-D} \left[ \frac{(C_{ip}^k)^2}{2} + \frac{(C_{ip'}^k)^2}{2} \right]
\]

In country \( i \), \( \eta_i^{k=1,\ldots,K-D} \) represents the relative size of group \( k \) among amont all non-delegated groups (\( \sum_{k=1}^{K-D} \eta_i^{k=1,\ldots,K-D} = 1 \)).
Objective function of a delegated group is:

\[ V^k_u = \Pi_{wp} W^k_{wp} + \Pi_{wpp} W^k_{wp} - \frac{1}{(1 - \gamma^k) \bar{q}^k} \left[ \frac{(C^k_{ip})^2}{2} + \frac{(C^k_{ip'})^2}{2} \right] \]

Given parties’ payoff function and special interest groups’ objective functions political equilibrim is derived under the timing presented in section 5.3:

\[
\begin{align*}
F_g (g^k_{\alpha}) &= \frac{\alpha \eta^k (1 - \eta^k) \phi^k \eta^k + (1 - \alpha)^2 \left[ \sum_{k=0}^{K} \eta^k (1 - \gamma^k) \eta^k \right]}{\sum_{k=K-D+1}^{K} \eta^k \phi^k + (1 - \alpha)^2 \left[ \sum_{k=0}^{K-D+1} (1 - \gamma^k) \eta^k \right]} \\
F_g (g^k) &= 1
\end{align*}
\]
References


[22] Zobbe H., "The Economic and Historical Foundation of the Common Agricultural Policy in Europe", *working paper*, The Royal Veterinary and Agriculture University, Copenhagen.