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Interest Organizations across Economic Sectors: Explaining Interest Group Density in the European Union

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Abstract

The number of interest organizations (density) varies across policy domains, political issues and economic sectors. This shapes the nature and outcomes of interest representation. In this paper, we explain the density of interest organizations per economic sector in the European Union on the basis of political and economic institutional factors. Focusing on business interest representation, we show that economic institutions structure the 'supply' of interest organizations by affecting the number of potential constituents, the resources available for lobbying and the geographical level of collective action of businesses. In contrast, we do not find consistent evidence that political institutions produce 'demand' for interest organizations by making laws, developing public policy or spending money. This is in contrast to the extensive evidence that such factors affect lobbying practices. The EU interest system is (partially) shaped by economic factors, relatively independent from public policy or institutions.

Keywords: business interest representation , European Union, interest groups, lobbying

Introduction

Systematic studies of interest group mobilization in the EU, i.e. large-N studies examining the number and type of interest groups politically active in the EU, have become more common recently (e.g. Messer et al, 2009; Broscheid and Coen, 2007; Rasmussen and Carroll 2013). Also beyond the EU case, there has been a marked increase in recent years in studies of interest group populations. These studies examine the density and diversity of interest organizations in political systems as a whole as well as subunits within them, such as political issues, policy domains, and economic sectors (e.g. Gray and Lowery, 1996b; Lowery and Gray, 2015; Baumgartner and Leech, 2001; Halpin and Jordan, 2012). Such attention is not surprising. The density of interest organizations within a given economic sector, issue area, or policy domain is highly important for several reasons. Density has been shown to affect both the strategy and (potential) influence of interest organizations (e.g. Beyers & and Kerremans 2007, Lowery, Gray and Monogan 2008), the breadth of policy engagement of interest groups (e.g. Halpin and Thomas, 2012) and the opportunities for entry of new organizations to the interest group system (Gray and Lowery 1996a). Thus, understanding what drives variation in densities between economic sectors could help shed light on a variety of issues associated with interest representation. In the underlying special issue, Kluver and Mahoney (<THIS ISSUE: PUBLISHER TO ADD/UPDATE DETAILS AT PROOF>), for instance, hypothesize the diversity of groups in a policy debate to affect nature of the frames used, and Bernhagen et al (<THIS ISSUE: PUBLISHER TO ADD/UPDATE DETAILS AT PROOF>) use a legislative 'side' density measure to explain positional alignment with the European Commission . This is the conceptual link to the strategy and influence components of the INTEREURO project of which the underlying research is a part.[2]

Density also has societal relevance. Olson (1982, 41-69), for example, argues that economic sectors (and societies more broadly) will eventually 'decline' when too many interest

organizations seek to maintain the policy status quo, defend their narrow interests, and, thereby, lead the political process to deadlock. According to such an argument, also common in popular accounts of the EU, the size and scope of the interest system has potential consequences for the eventual success of the political system as a whole and the society it serves.

One of the key observations of population density studies is that there is a great deal of variation in the density (i.e. number) of interest groups when system-level data is broken down into subunits. That is, regardless of whether the population is disaggregated by issues, economic sectors or policy domains, the distribution of the number of active interest organizations is highly skewed (e.g. Baumgartner and Leech, 2001; Halpin, 2011). At the level of economic sectors, for example, this means that interest organizations sometimes have a representational monopoly with only a single interest organization working in a particular economic sector, whereas in other sectors a large number of diverse types of interest organizations are active. This has led La Pira et al (2012) to speak of 'two worlds of lobbying': one with niche, low-number lobbying at the periphery and another with intense bandwagon lobbying at the core of the US interest system. Interest group density in the more explicitly multi-level governance system of the EU is also highly skewed. Richardson and Coen (2009, 348), for example use the term 'chameleon pluralism' to denote similar lobbying differences in the number of groups between policy domains in the EU (see also Broscheid and Coen 2007; Coen and Katsaitis, 2013; Rasmussen et al. 2014). Such skewed distributions complicate the general normative assessment of lobbying in democratic political systems because lobbying may be 'good' or 'bad' depending on the sector specific situation in which it occurs.

Previous research on the EU interest population, and on EU interest representation more broadly, have sought to explain such differences on the basis of institutional factors – such as

institutional patronage by the European Commission (e.g. Greenwood, 2007; Mahoney, 2004, 2011; Sanchez Salgado, 2014; Maloney and Saurugger, <THIS ISSUE: PUBLISHER TO ADD/UPDATE DETAILS AT PROOF>). Considering the unique institutional structure of the EU, this emphasis on the demand for lobbying is a convincing point of departure and is supported by empirical evidence. This is especially case for studies on group strategies for which such explanations are theoretically more proximate than for studies on population density. At the same time, the EU may be a very likely case to find effects of political institutional demand for lobbying, and, due to the multi-level, cross-national character, a relatively unlikely case to find that socio-economic 'supply' factors such as the potential number of constituents, to produce substantial variation in lobby presence. Compared to national cases, in the EU there is a relatively long causal chain between 'supply' factors and the actual lobbying venue. This implies that when we find support for supply-side explanations in the EU, such explanations are also likely to be valid in other political systems. Further, the omission of supply-side factors in several assessments of group density in the EU may leave such existing models substantially underspecified. We provide a theoretical justification and detailed analysis of supply factors while also including demand-side factors highlighted in earlier research. Our focus on the economic base of the EU interest group system casts new light on 'old' discussions on whether groups anticipate or react to European integration (e.g. Wessels, 2004) and, in the relation to the underlying Special Issue, broadens the interest group 'context' beyond their institutional targets of influence.

We focus on density per economic sector rather than policy domain, interest guild or the legislative proposals sampled in the INTEREURO project. In conceptual terms, economic sectors most closely match the tightly defined subpopulation required to plausibly assume (critical resource) competition among organizations. In population ecology terms, the economic sector is more likely to be the 'selective environment' of 'like-groups' in need of

similar scarce resources than policy domain or legislative proposal (see discussion in: Lowery, 2012; 50, 54).

We use a novel dataset compiled by the authors on interest group presence in the European Parliament in the period 2009-10. In total, 1425 (out of 2070) organizations in the Parliament's door pass registry have been classified by economic sector based on information provided online, resulting in density figures for 88 economic sectors of which 57 are included in the multivariate analysis (694 organizations). Our empirical research does not cover interest representation in the public, semi-public or non-business sectors. We begin by discussing the existing literature and presenting our theoretical expectations. Thereafter, we lay out our research design and data before conducting our empirical analysis and concluding.

Theory: supply and demand approaches to density

Difference in numbers of interest organizations may be related to the policy process ('demand-side) or the population/membership environment ('supply-side'). Coen and Katsaitis (2013) exemplify a demand focus. They suggest that the varying informational demands of different sections of the EU bureaucracy and the substantive nature of policy (regulatory or (re)distributive) explain the number of interest organizations at the policy domain level. Lowery et al (2005, 68), as an example of supply-oriented research, find that 'economies of scale in interest representation closely reflect economies of scale in industrial production'. This implies that factors such as the size and structure of specific markets (e.g. such as determined by its geographical limits or the number of establishments) should be regarded as the ultimate causes of observed patterns of interest representation.

We first discuss the supply-side factors at some length, and only briefly describe the conceptual rationale of the demand-side factors. Some of the arguments about demand-side factors are already precisely described as 'policy and polity contextual factors' in the outline

of this special issue (Kluver et al, <THIS ISSUE: PUBLISHER TO ADD /UPDATE DETAILS AT PROOF>) and other arguments do not require elaborate restatement as they are already substantively developed in previous studies (e.g. Broscheid and Coen, 2007; Leech et al, 2005).

The supply of interest organizations

Population ecology approaches pay high emphasis to supply side factors in accounting for interest group density. The key underlying proposition of such approaches is that the number of interest organizations in a given environment is constrained by the availability of organizational resources, relatively independent of mobilization rates and dependent on the pre-existing density of organizations (e.g. Gray and Lowery, 1996b, 40-41; Halpin and Jordan, 2009). These propositions directly contradict the notions of an indeterminate growth of interest organizations (e.g. Olson, 1982, 38-41) and an exclusive focus on mobilization practices to infer population level 'bias' (e.g. Olson, 1965). Instead, population ecologists focus on environmental factors in conjunction with distinct growth patterns of sectors ('density dependence') to explain differences in numbers of organizations in a given sector or polity. Selective pressures ensure that not all interest organizations survive, and such pressures increase when populations become more crowded. The population ecology approach posits that survival of interest organizations depends on the 'energy' available in the organizational environment (here: demand) and the 'area' or potential size of the environment on which the organization relies (here: supply-side).

First, the number of interest organizations (or density) in a given economic sector ultimately depends on the availability of organizational resources in a sector (Lowery and Gray 1995). Without farmers there cannot be a farmers' association. Interest organizations require constituents. A large number of potential constituents provide opportunities for larger numbers of organizations. The abundance of organizational resources produces more

organizations rather than a few big organizations because a larger number of constituents will allow specialists to inhabit narrower, more specific niches that are not viable with fewer constituents (Gray and Lowery 1996a). However, there is an important caveat here. Even in cases with near infinite resources, at some point the number of interest organizations will stop growing because the marginal utility of ever more specialized interest organizations declines with density (Lowery and Gray 1995, Nownes and Lipinski 2005). In other words, the growth of the number of organizations depends on the pre-existing density of organizations in an economic sector. The number of potential constituents may be measured by the number of establishments in a given economic sector (Leech et al, 2005, 23, Lowery, Gray and Fellowes 2005).

Constituents hypothesis: The density of interest organizations within economic sectors is positively related, but at a declining rate, with the number of potential constituents of the sectors.

We now turn to the second supply-side factor derived from population ecology. Lowery, et al (2005, 47) refer to the classic argument of Schattschneider (1960) that better endowed interests are more likely to organize themselves. While Lowery and Gray (1995; Lowery, Gray, and Fellowes 2005) have found little support for this hypothesis in within sector, cross-jurisdiction tests, it remains a viable and often cited hypothesis with respect to differences in political activity among economic sectors (Schlozman and Tierney 1986). Two related arguments support this expectation. First, and most obviously, it is plausible that the availability of slack resources per firm – a by-product of wealth – in a given sector might lead to supporting a larger number of interest organizations representing that sector. But a second interpretation or rather implication of this bears directly on our first hypothesis on density dependence. That is, the relationship between number of enterprises in an economic sector and its economic value added is likely to vary across economic sectors. For some, relatively

few enterprises will each share a great deal of value added (e.g. banks) in comparison to other economic sectors (e.g. restaurants). This means that to secure valid estimates for the density dependence hypotheses in cross-sector analyses like ours, we must control for these variations in the economies of scale or wealth of sectors. We do so by including an indicator of sector wealth in the model – the economic value added per enterprise of an economic sector – to test the following hypothesis.

Wealth hypothesis: The density of interest organizations is positively related to the wealth of the potential constituents in a sector.

Third, in the case of a within-system, cross-sector analysis of interest system density in the European Union, an additional characteristic of the market should be included in the 'supply' term of the model. For some economic sectors, such as the production of consumer electronics or cars, there is a single European or even world market. In other sectors, in contrast, such as health care or postal services, the market is geographically fragmented along national borders. Historically, European-level collective action by business occurs especially in economic sectors with strong economic interests in cross-border trade such as those with large proportions of export-oriented producers, cross-border supply chains and high fixed costs (e.g. Cowles, 2002). In other words, whether economic actors in a given sector collaborate at a certain geographical level depends on the level at which relevant economic transactions take place. As early neo-functionalists (Haas 1958, Lindberg 1963) noted, these joint activities in such markets at some point orients itself towards the European policy process. Economic sectors differ in the geographical level of integration of the market. We should find higher numbers of interest organizations in sectors for which there is a European or world playing field than in nationally bounded markets.

Market integration hypothesis: The density of interest organizations is positively related to the degree of European market integration of economic sectors[3]

In sum, the 'supply' of interest organizations in a given sector depends on the number of potential constituents, their resources, and the level of European market integration.

The interaction between interest organizations potentially affects the density of organizations. This may be seen as a special category of supply-side factors. Previous research indicates that economic sectors differ in the extent to which organizations represent their own interests (as institutions) or whether they (also) have associations represent their interests (e.g. Hansen et al, 2005; Lowery, Gray and Fellowes 2005, 72).

Institutions hypothesis: the density of interest organizations is positively related to the proportion of institutions in an economic sector.[4]

Furthermore, one of the proposed mechanisms that produce the skewed distribution of interest organizations across economic sectors is that 'information cascades' produce bandwagons of interest group activity (Halpin 2011, Baumgartner & and Leech 2001). Such information cascades probably work through so-called 'cue givers' such as the media, keystone groups, civil service or campaign groups (Halpin 2011, 221-2). That is, as Baumgartner et al (2009, 253) note 'initial actions may have powerful effects on subsequent actions, and the actions of key players in the process may send cues to scores of others, all of whom may change their behavior'. In the EU case, umbrella groups are probably very important first movers early in the policy process and therewith act as cue givers for their members. This implies that the density of interest organizations is positively related to the presence of umbrella groups in an economic sector.

Cue givers hypothesis: The density of interest organizations is positively related to the presence of umbrella groups in an economic sector

Demand-side factors

As regards the demand-side, the number of organizations in a given economic sector also depends on the 'demand' from government for interest representation. Some economic sectors are more intensely affected by government policies and, consequently, will support a greater number of interest organizations. This argument originates from population ecology (in which it is called 'energy') but also has broader resonance in theoretically eclectic models on density. Further, as said, as policy and institutional factors are very common in explanatory models on group strategies. We are mainly concerned about difference in degree government activity rather than a difference in the kind of political institutional action such as the specific institution involved, the regulatory/distributive nature of the policy and so on. Such differences are included in the general framework of this special issue as explanation for strategies and influence regarding EU institutions. The relatively aggregate level of analysis of our research design makes it difficult to include them in our analysis. Specific policy-related factors are also theoretically relatively proximate in explanations of group strategies or policy influence, but more distant in their potential effects on population density. We therefore formulate relatively crude and more general expectations than the other contributions to this Special Issue.

In general terms, government activity has been shown to be a very strong predictor of political activities on the part of interest organizations (Baumgartner & and Leech 2001, Baumgartner, Gray and Lowery 2009, Gray et al. 2005, Leech et al. 2005, Lowery et al. 2004).

EU policy activity hypothesis: the density of interest organizations is positively related to the total level of EU regulation and EU spending on policies relevant to an economic sector.

Some authors, especially in the EU case, point out that institutional demand, in terms of information needs on the part of administrators, draws interest groups into the policy process (e.g. Bouwen, 2002). Such needs vary depending on internal departmental capacity (staff) to generate policy information. As argued by Coen and Katsaitis (2013a) this implies that large numbers of staff, which also indicates government activity, *reduce* information needs and *reduce* institutional demand for interest organizations.

Information needs hypothesis: the density of interest organizations is positively related the information needs of administrators relevant to an economic sector.

In sum, the demand for interest organizations on the part of EU institutions should be reflected in the stock of legislative output, the amount of government spending, and the information needs of policy makers.

Modelling Issues, Data and Variable Operationalization

The dependent variable of this analysis is the number of interest organizations active in the European Parliament (EP) per economic sector. We rely on a list of registered interest representatives with a door pass card to the buildings of the European Parliament. We use a snapshot of this list and focus on organizations registered at any moment in 2009. A benefit of the Parliament register is that we know that actors in the list have demonstrated at least a minimal level of political activity oriented towards a key European institution. Remember that 'political interest' is commonly part of any definition of 'interest groups' (e.g. Beyers et al 2008), as noted on the US case 'the most valid indicator of broadscale political activity now available is provided by lobby registration rolls' (Gray and Lowery, 1996, 7). This is not necessarily the case for organizations listed in Dod's Public Affairs Directory or those

which have registered themselves in the general Transparency Register (Greenwood and Dreger, 2013) (for a more elaborate discussion of the differences between these sources, see Berkhout and Lowery, 2008; Wonka et al. 2010; Rasmussen and Carroll 2014). Based on website information, we classify these organizations into economic sectors for the density measure and by organizational type to measure the presence of European-level umbrella groups and of individual institutions. Note that the indicators for our independent variables do not change much on a year-to-year basis whereas they show much cross-sectional variation. While we do have EP doorpass data for a longer time period (2005-2010), we therefore prefer the simpler cross-sectional design of a, single, 'average' year.[5] A substantively useful time series model requires valid and reliable data over decades rather than years. Such data are not available (but see: Berkhout and Lowery, 2010; Sorurbakhsh, 2013; Toshkov et al, 2012).

A number of sectors are excluded from the analysis. To start, we only include organizations that can be classified in one of the categories of the ISIC classification of economic activities (i.e. this excludes 'social' or 'public' sectors).[6] We also leave out the ISIC sectors for which we cannot differentiate between 'in-house' and 'client' lobbying. These are, most importantly, the legal activities, consultancy, and information services sectors. We do not know whether firms in these sectors, such as Allen and Overy or PriceWaterhouseCoopers, act as 'lobby firms' on behalf of others (inflating the density measure of the consultancy sector) or plead for a certain cause of their own, such as accountancy regulation. Furthermore, several sectors are dropped because of lack of data on the main explanatory factors. That is, Eurostat only provides market structure information on the so-called 'business economy', including industry, construction, and services, but no such data on other sectors like agriculture, forestry, and fishing as well as public administration and 'largely non-market services such as education and health' (Eurostat, 2009: 5). Data on financial services are also missing, however this is due to a general 'lack of standard business statistics' for this sector (Eurostat,

2009: 5).[7] The exclusion of several strongly regulated and semi-public sectors increases the reliability and the internal validity of our data. However, because we cannot measure the full scale of the demand-side factors (i.e. from light to heavily regulated sectors), it may bias our results in favor of supply-side factors. It also reduces the external validity of the study in terms of the generalizability beyond non-business sectors. Our data pertain to business sectors only (about half of the interest group population) although, theoretically, our expectations apply to non-business sectors as well. This is a limitation of the underlying study and a challenge for future research. Our appendix provides a full list of the 57 sectors included and further information on the coding procedure.

The size of the constituency is measured by the the number of enterprises in a given sector. Wealth is operationalized by turn-over per enterprise. The data are collected from Eurostat (Structural Business Statistics, 2009). This is also the case for the market integration hypothesis that we measure by net flows of direct investment per sector within the EU27.

In order to assess the 'demand' effects in economic sectors, we link policy domains to economic sectors. The policy process and the economy can only be linked in an imperfect manner. Policies are sometimes aimed at specific sectors (e.g. the Common Agricultural Policy), have a multi-sector character (e.g. economic innovation programs), and/or indirectly affect a whole range of sectors (e.g. labor market policy). We link economic sectors to European Parliamentary legislative fields and to policy areas of the Directorate-Generals (DG) of the European Commission (EC).

First, the legislative fields are linked to economic sectors using a Boolean search in Eur-lex's search engine (which contains all EU legislation). The Boolean search logic uses the full descriptions of each economic sector as outlined by the ISIC classification scheme. These descriptions provided a string of key terms for all activities covered by a specific economic

sector as well as, in some instances, several that were explicitly not covered. These key terms are then used to search in both (1) the titles of legislation as well as (2) the titles and full text of legislation. The total number of EU legislative acts pertaining to a sector indicates the level of EU regulation. This is one of our 'demand' hypotheses. As noted in the theoretical section, this hypothesis is not bound to the particular period of study. Table 3 in the Appendix provides a full overview of the search terms used in this analysis disaggregated by economic sector.

Second, the DG policy areas are linked to economic sector by a conversion table (see Table 4 of the Appendix). Data on spending per DG were gathered from the DG Budget website from the "Annual Accounts of the European Union Financial Year 2009".[8] This pertains to the 'policy activity' hypothesis. Data on staff were collected from DG Human Resources and Security based on the "Statistical Bulletin: Personnel of the Commission Bulletin for Personal, October 2009".[9] These numbers are used to operationalize the informational needs of administrators.

Results and analysis

We first present descriptive statistics and then present several multivariate regression models (negative binomial) on the density per economic sector. Table A1 in the appendix provides descriptive statistics for the variables used in the analysis with the dependent variable in the first row. These statistics were calculated for the 57 sectors included in the analyses that follow. Additionally, Figure A1 in the appendix shows the distribution of the number of actors per sector (the dependent variable). This variable has a typical lopsided distribution with a large number of sectors having only a few lobbyists in the European Parliament and a smaller number of sectors having a high number. This is in line with previous findings of the distribution of actors across economic sectors in the EU (e.g. Messer et al. 2010). Table A2 in the appendix gives an overview of the correlations between the variables. The strongest

correlation (-0.54) is that between the logarithm of the number of enterprises and the turnover or gross premiums written per enterprise. The correlation between these two conforms to our expectations regarding the interrelatedness of the constituents and sector wealth hypotheses, not to mention the use of the first variable in the construction of the second.

The dependent variable, the density of actors present in a sector, is a count variable, and consequently we estimate the models that follow using appropriate count modeling techniques. As can be seen in Table A1, the dependent variable is over-dispersed. Therefore we estimated the models using negative binomial regression that provide efficient estimates even in the presence of over-dispersion. The model diagnostics of these negative binomial models further indicate the presence of over-dispersion, confirming the appropriateness of the technique.

[Table 1 around here]

Table 1 shows the estimated coefficients for three negative binomial models along with their incidence rate ratios (IRRs).[10] Model 1 tests the supply-side hypotheses in the absence of the demand-side variables: the logarithm of the number of enterprises to test the constituents hypothesis, the turnover or gross premiums written (in hundred millions of euro) per enterprise to test the wealth hypothesis, and within-EU direct investment flows (in billions of euro) to test the market integration hypothesis. In the absence of controls, the results show no support for the supply-side hypotheses.

To the variables pertaining to interaction among interest organizations, model 2 adds the proportions of institutions and the presence of umbrella groups within a sector. These variables represent the organizational interaction component of the supply-side and both are highly significant ($p < 0.01$). A one percent increase in the share of institutions within a sector increases the expected number of organizations by approximately two percent. The

presence of an umbrella group increases the expected number of organizations by more than thirteen. The model shows some support for the constituents hypothesis, with the logarithm of the number of enterprises now significant at $p < 0.1$. An increase of one in this logarithm increases the number of organizations by 11%. In sectors with a large share of institutions, the logarithm of the number of enterprises is lower, so the positive effect that this has on the dependent variable is significant only after controlling for the percent of institutions in a sector.

In model 3, we add the demand-side factors: the number of legislative acts (in thousands), the average budget of relevant European Commission DGs, and the average staff size of those DGs. Of these, only the average budget is significant (at $p < 0.05$) and has a negative effect on the number of organizations within a sector. Increasing the average budget for DGs of importance to a sector by one billion euro leads to a 59% decrease in the number of organizations. In other words, a one standard deviation increase in this variable centered on its mean is associated with a decrease of fifteen in the number of organizations. We are not sure about the interpretation of this counterintuitive finding. It may be that budgets are used to fulfill the informational needs of administrators and that, consequently, DG's with substantial budget do not 'demand' input from interest organizations. However, we use staff numbers to account for this phenomenon and these are not significant. Our impression is that the particular distribution of governmental resources (budget, staff, regulatory power) across the DG's in the EC does not precisely reflect substantial information needs or governmental demand for lobbying. At the same time, we find some support for all three supply-side hypotheses in the presence of these demand-side variables. The constituents hypothesis is again confirmed by the significance of the logarithm of the number of enterprises ($p < 0.05$). An increase of one in the logarithm of the number of enterprises results in an 11% increase in the number of interest organizations present in a sector. Sector wealth is also significant ($p <$

0.10), providing support for the wealth hypothesis. An increase of one hundred million euro in turnover or gross premiums written increases the number of interest organizations present in a sector by 34%. We also see some support for the market integration hypothesis, as EU direct investment flows is modestly significant ($p < 0.10$). A one billion euro increase in EU direct investment flows is associated with a 4% increase in the number of organizations. Both the share of institutions and the presence of umbrella groups remain significant at $p < 0.01$. This final model, which allows us to assess the effects of all three types of explanations while controlling for the others, is also the best fit, with a pseudo-R^2 of eleven percent.

Concluding remarks

We started this paper with the question of why there are larger numbers of interest organizations in some economic sectors than in others. The strongly skewed distribution of variation in group density is one of the most consistent findings in interest group population research (e.g. Baumgartner and Leech, 2001; Halpin, 2011). Consistent with the state of the literature, we also found such a pattern in our data on the door pass register of the European Parliament. The contribution of our paper lies in the combination of factors we explore that are used to explain this variation. Much of the recent literature highlights either demand- or supply-side factors as the major source of this variation. And, in the EU case especially, demand-side factors seem to be especially popular (e.g. Coen and Katsaitis, 2013). This is not surprising. The EU, especially the European Commission, is known for its institutional structuring of the interest group environment through subsidies, access provision and the opportunities for venue shopping associated with multi-level policy processes. This might well lead one to focus almost exclusively on demand-side factors in explaining cross-sector variations in density. Further, scholars might simply prefer to focus on a single source of explanations because it eases both the design and execution of the research. This is especially the case given the several ways interest populations might be divided into subpopulations

around policy fields, economic sectors, or interest guilds. Quite simply, for each of these divisions, certain explanatory factors are more accurately measured and have a more direct causal link to density values. Nevertheless, we think that an exclusive focus on supply- or demand-factors (or population-related factors in between) always misses important explanatory factors. In theoretical terms, this largely means that interest group scholars, including those studying the EU, should (also) be attentive to the social and economic forces that drive politics, rather than narrowly focusing on the policy process. Such a policy focus, more specifically does not do justice to the specific market dynamics that may underlie the mobilization of interests in the European Union – in addition to any institutional demand factors. We therefore integrated demand- and supply-side potential explanations into our model and linked observations across legislative areas, administrative units, and economic sectors in a novel way.

Our results reflect our integrative effort. We find support for supply-oriented explanations of group density. First, we find that the structure of the economic sectors from which interest organizations are drawn matters. The structure of the market, indicated by the number of enterprises and the turnover per enterprise, affects the number of interest organizations in a given economic sector. This is consistent with, among others, the findings by Lowery et al's (2005, 68). The number of potential constituents of a certain interest, if at a declining marginal rate, and the amount of 'slack' resources available per constituent produce larger numbers of interest organizations. Also, higher levels of market integration at the European level lead to higher group densities.

Second, in terms of more direct supply-factors, economic sectors also differ in the extent to which individual companies or semi-public organizations choose to lobby collectively or individually. We indeed find a positive relationship between the proportion of individual institutions within an economic sector and the density of organizations representing it

politically. It seems that the proverbial bandwagons are often loaded individual companies. Indeed, our results for the presence of umbrella groups suggest that these companies jump on the bandwagons because they take cues from umbrella groups, as suggested by Halpin (2011, 221-2) rather than the umbrella groups acting as substitutes for lobbying by individual companies and other institutions. However, this observation requires further research. In contrast to previous policy issue-level theories and findings, the phenomenon observed here pertains to economic sectors and seems to be of a more structural nature. That is, umbrella groups may signal more general political interest to member-firms rather than short-term issue-oriented lobbying that is the focus of, among other researchers, Baumgartner et al (2009, 252-3). In sum, the structure of economic sectors – both in more distal terms such as number of potential constituents or its relative wealth and more proximate terms such as the presence of umbrella groups – seems to have a great deal to do with the density of interest organizations in an economic sector.

In contrast, we find inconsistent evidence for the effect of demand factors commonly addressed in the literature. This is somewhat surprising for the case of the EU where such demand forces might be expected to be especially powerful. None of the estimates for number of legislative acts, DG budgets, and DG staff size were discernible different from zero. This suggests that models of group density that are inattentive to supply forces are likely to be somewhat underspecified. We know that interest group density affects other aspects of interest representation, such as the nature of dominant strategies and, perhaps, influence. This implies that incomplete explanations of density potentially affect studies on strategies and influence. The specification of models of group strategies and influence may be improved by including measures of the several aspects of the organizational environment that we have identified as supply factors, such as the density of organizations in the economic sector in which it is active or the proportions in institutions in its immediate environment.

More generally, this might well mean that as political scientists – folks who are likely to be especially receptive to 'political' explanations rather than 'economic' ones – we may be biased toward accounts that represent only a small portion of the real story accounting for variations in the densities of interest representation across economic sectors.

Finally, a couple of cautionary remarks on the reliability and validity of our observations are in order. First, policy sectors, economic sectors, and interest guilds can only be linked in an imperfect manner. Their empirical relationship is fluid, overlapping, and sometimes very indirect. This means that our results rely on a selection of sectors only. Second, the market structure variables only pertain to the 'business economy'. For many sectors, these variables are missing due to the reporting practices of Eurostat and the OECD (and the national agencies on which they rely). Third, we only assess economic sectors, not social or public sectors. This means that our findings apply to only about half of the EU interest group population. It may be that similar supply- and demand-factors affect the mobilisation of non-economic interests, but we cannot tell from the research presented here. This means that any influence of density patterns in 'social' or 'public' sectors on various economic sectors remains unobserved. Considering well-known counter-mobilization processes, such influences are plausible. Fourth, we need to acknowledge that the data available to us to examine demand-side effects was of a somewhat cruder nature than our supply-side data. Hence, whereas the five supply-side factors are measured directly at economic sector level, key demand-side variables rely on measures at the relevant DG policy area level, which is subsequently linked to economic sectors. For all of these reasons, we are not yet ready to fully argue in favour of the full inclusion of supply-side explanations on various aspects of lobbying, including interest system density. But demand-side factors clearly need to be examined in the context of models that are more fully attentive the powerful forces of supply that condition responses to political events.

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Biographical note

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[1] The authors are ranked in non-alphabetical order to reflect the larger contribution of the first two authors.

[2] See: http://www.intereuro.eu/. The logic and structure of this project is described by Beyers et al (2014).

[3] Please note that we are talking about market integration rather than policy integration.

[4] Please note that we use the term 'institutions' in the same manner as Salisbury (1984), including among others 'individual corporations, state and local governments, universities, think tanks' and various other non-membership organizations.

[5] As a robustness check, we also assessed our regression models using 2008-2010 density data. This does not substantially change the results presented.

[6] ISIC stands for International Standard Industrial Classification of All Economic Activities and is the statistical standard proposed by the United Nations. For precise descriptions of each sector, please see: http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27. The use of the ISIC scheme makes it possible to use data collected by Eurostat. Please note that ISIC (rev 4) is consistent with the EU-standard NACE (rev. 2). NACE stands for Nomenclature statistique des activités économiques dans la Communauté européenne.

[7] The Organisation for Economic Co-operation and Development (OECD) reports on a broader range of sectors in their Structural Analysis (STAN) and Structural and Demographic Business Statistics (SDBS) datasets. However, these datasets still do not provide sufficient information on the number of enterprises per sector in all EU countries.

[8] http://ec.europa.eu/budget/library/biblio/documents/2009/EU_final_accounts_2009_en.pdf

[9] http://www.ecb.europa.eu/pub/mb/html/index.en.html

[10] While there are good reasons for preferring the precision of a polynomial test (Lowery Otjes, Gherghina, Van Witteloosstuijn, Peli, and Brasher 2010), it is also true that such tests always raise issues of collinearity. This proved especially severe in our case. Thus, we opted for a simpler test of the density dependence hypothesis by including logged values of both number of enterprises and economic value added in the model (see: MacArthur and Wilson 1967).

Table 1: Interest group density across sectors (unstandardized coefficients from negative binomial regression)

	(1)	IRR	(2)	IRR	(3)	IRR
Supply-side factors						
Logarithm of the number of enterprises	0.09 (0.07)	1.09 (0.07)	0.11* (0.06)	1.11* (0.06)	0.10** (0.05)	1.11** (0.06)
Turnover or gross premiums written per enterprise	0.20 (0.22)	1.24 (0.27)	0.22 (0.17)	1.25 (0.21)	0.30* (0.16)	1.34* (0.21)
EU direct investment flows	0.04 (0.03)	1.04 (0.03)	0.03 (0.02)	1.03 (0.02)	0.04* (0.02)	1.04* (0.02)
Percent of institutions in sector			0.02*** (0.00)	1.02*** (0.00)	0.02*** (0.00)	1.02*** (0.00)
Presence of an umbrella group			1.32*** (0.25)	3.73*** (0.94)	1.28*** (0.24)	3.60*** (0.88)
Demand-side factors						
Number of legislative acts					0.00 (0.01)	1.00 (0.01)
Average DG budget					-0.88*** (0.41)	0.41*** (0.17)
Average DG staff size					-0.74 (0.54)	0.48 (0.26)
Constant	1.40* (0.77)	4.05* (3.13)	-0.66 (0.73)	0.52 (0.38)	4.22 (3.15)	68.25 (214.8)
Alpha	-0.32 (0.21)	0.73 (0.15)	-0.85*** (0.23)	0.43*** (0.10)	-1.08*** (0.24)	0.35*** (0.08)
Observations	57		57		57	
Deviance	65.72		60.48		58.62	
Pseudo R^2	0.01		0.09		0.11	

Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

References

Baumgartner, F.R. & Leech, B.L. (2001) Interest Niches and Policy Bandwagons: Patterns of Interest Group Involvement in National Politics. *Journal of Politics,* 63(4): 1191-1213.

Baumgartner, F.R., Gray, V. & Lowery, D. (2009) Federal Policy Activity and the Mobilization of State Lobbying Organizations. *Political Research Quarterly*, 62(3): 552-567.

Bernhagen, P., Dür, A. and Marschall, D., Information or Context: What Explains Positional Proximity between the European Commission and Lobbyists? <THIS ISSUE: PUBLISHER TO ADD /UPDATE DETAILS AT PROOF>

Berkhout, J. & Lowery, D. (2008) Counting Organized Interests in the European Union: A Comparison of Data Sources. *Journal of European Public Policy,* 15(4): 489-513.

Beyers, J. & Kerremans, B. (2007) Critical Resource Dependencies and the Europeanization of Domestic Interest Groups. *Journal of European Public Policy*, 14(3): 460-481.

Beyers, J., Dür, Bonafont, L C., A., Eising, R., Fink-Hafner, D., Lowery, D., Mahoney, C., Maloney, W. and D. Naurin, (2014) The INTEREURO Project: Logic and Structure. *Interest Groups & Advocacy,* 3(2): 126–140

Broscheid, A. & Coen, D. (2007) Lobbying Activity and Fora Creation in the European Union: Empirically Exploring the Nature of the Policy Good. *Journal of European Public Policy,* 14(3): 346-365.

Coen, D. & Katsaitis, A. (2013) Chameleon Pluralism in the EU: An Empirical Study of the European Commission Interest Group Density and Diversity Across Policy Domains. *Journal of European Public Policy,* 20(8): 1-16.

Cowles, M.G. (2002) Large Firms and the Transformation of EU Business Associations: A Historical Perspective. In: Greenwood, J. *The Effectiveness of EU Business Associations*, Palgrave Macmillan : pp 64-78.

Eurostat. (2009). *European business: Facts and figures - 2009 edition* No. KS-BW-09-001.

Gray, V. & Lowery, D. (1996a) A Niche Theory of Interest Representation. *The Journal of Politics,* 58(1): 91-111.

Gray, V. & Lowery, D. (1996b) *The Population Ecology of Interest Representation Lobbying Communities in the American States*, University of Michigan Press, Ann Arbor.

Gray, V., Lowery, D., Fellowes, M. & Anderson, J. (2005) Understanding the Demand-Side of Lobbying: Interest System Energy in the American States. *American Politics Research,* 33(1): 404-434.

Greenwood, J. (2007) Organized Civil Society and Democratic Legitimacy in the European Union. *British Journal of Political Science*, 37(2): 333-357.

Greenwood, J. & Dreger, J. (2013) The Transparency Register: A European Vanguard of Strong Lobby Regulation? *Interest Groups & Advocacy*, 2(2): 139-162.

Haas, E.B. (1958) *The Uniting of Europe: Political, Social, and Economical Forces 1950-1957*, Stevens.

Halpin, D. & Jordan, G. (2009) Interpreting Environments: Interest Group Response to Population Ecology Pressures. *British Journal of Political Science,* 39(02): 243-265

Halpin, D. (2011) Explaining Policy Bandwagons: Organized Interest Mobilization and Cascades of Attention. *Governance,* 24(2): 205-230.

Halpin, D., & Jordan, A. G. (2012). *The scale of interest organization in democratic politics: Data and research methods*. Palgrave Macmillan, Basingstoke.

Hansen, W.L., Mitchell, N.J. & Drope, J.M. (2005) The Logic of Private and Collective Action. *American Journal of Political Science,* 49(1): 150-167.

Klüver, H., Beyers, J. and Braun, C., Introduction, <THIS ISSUE: PUBLISHER TO ADD /UPDATE DETAILS AT PROOF>

Klüver, H., Mahoney, C., and Opper, M. Framing in context: How interest groups frame policy debates in the European Union <THIS ISSUE: PUBLISHER TO ADD /UPDATE DETAILS AT PROOF>).

LaPira, T.M., Thomas, H.F. & Baumgartner, F.R. (2014) The Two Worlds of Lobbying: Washington Lobbyists in the Core and on the Periphery. *Interest Groups & Advocacy*, 3(3) : 219-245

Leech, B., Baumgartner, F., Pira, T.L. & Semanko, N. (2005) Drawing Lobbyists to Washington Government Activity and Interest Group Mobilization. *Political Research Quarterly*, 58(1): 19-30.

Lindberg, L.N. (1963) *The Political Dynamics of European Economic Integration*, Stanford University Press, Stanford.

Lowery, D. & Gray, V. (1995) The Population Ecology of Gucci Gulch, Or the Natural Regulation of Interest Group Numbers in the American States. *American Journal of Political Science,* 39(1): 1-29.

Lowery, D. (2011) Interest Organization Populations: The Demands of Scale of Analysis and the Theoratical Purposes of Counting. Halpin, D. and G. Jordan (eds) *The Scale of Interest Organization in Democratic Politics: Data and Research Methods.* , Palgrave Macmillan, Basingstoke. : pp. 44-67

Lowery, D. & Gray, V. (2015) An Introduction to the Population Ecology Approach. Lowery, D., D. Halpin and V. Gray (eds) *The Organizational Ecology of Interest Communities Reconsidered.* , Palgrave Macmillan: pp 1-22.

Lowery, D., Gray, V. & Fellowes, M. (2005) Sisyphus Meets the Borg: Economic Scale and Inequalities in Interest Representation. *Journal of Theoretical Politics,* 17(1): 41-74.

Lowery, D., Gray, V. & Monogan, J. (2008) The Construction of Interest Communities: Distinguishing Bottom-Up and Top-Down Models. *Journal of Politics,* 70(4): 1160-1176.

Lowery, D., Gray, V., Fellowes, M. & Anderson, J. (2004) Living in the Moment: Lags, Leads, and the Link between Legislative Agendas and Interest Advocacy. *Social Science Quarterly*, 85(2): 463-477

Lowery, D., Otjes, S.P., Gherghina, S., Van Witteloostuijn, A., Peli, G. and Brasher, H. (2010) Unpacking LogM: Towards a More General Theory of Party System Density. *American Journal of Political Science* 54(4).921-935

MacArthur, R. H. & W. O. Wilson (1967) *The Theory of Island Biogeography*, Princeton University Press, Princeton.

Maloney and Saurugger, Interest group adaptation and representation at the EU level <THIS ISSUE: PUBLISHER TO ADD/UPDATE DETAILS AT PROOF>

Mahoney, C. & Beckstrand, M.J. (2011) Following the Money: European Union Funding of Civil Society Organizations. *JCMS: Journal of Common Market Studies*, 49(6): 1339-1361.

Mahoney, C. (2004). The power of institutions. State and interest group activity in the European Union. *European Union Politics*, *5*(4), 441-466.

Messer, A., Berkhout, J. & Lowery, D. (2010) The Density of the EU Interest System: A Test of the ESA Model. *British Journal of Political Science*, 40(5), 161-190

Nownes, A.J. & Lipinski, D. (2005) The Population Ecology of Interest Group Death: Gay and Lesbian Rights Interest Groups in the United States, 1945-98. *British Journal of Political Science*, 35(02): 303-319.

OECD. (2003). *OECD economic surveys: Euro area* No. 2003/12 October.

Olson, M. (1965) *The Logic of Collective Action: Public Goods and the Theory of Groups*, Harvard University Press, Cambridge.

Olson, M. (1982) *The Rise and Decline of Nations*, Yale University Press, New Haven.

Rasmussen, A. & B. Carroll (2013). Determinants of Upper-class Dominance in the Heavenly Chorus: Lessons from European Commission Online Consultations, *British Journal of Political Science*. 44(2), 445-459

Rasmussen, A., Carroll, B., & Lowery, D. (2014). Representatives of the public? Public opinion and interest group activity. *European Journal of Political Research*, 53(2), 250-268

Richardson, J. & Coen, D. (2009) Institutionalisation and Managing Intermediation in the EU. Coen,D. and J. Richardson (eds) *Lobbying the European Union, Institutions, Actors and Policy*. Oxford university press, Oxford.

Salisbury, R.H. (1984) Interest Representation: The Dominance of Institutions. *American Political Science Review,* 78(1): 64-76.

Sanchez Salgado, R. (2014) Rebalancing EU Interest Representation? Associative Democracy and EU Funding of Civil Society Organizations. *JCMS: Journal of Common Market Studies,* 52(2): 337-353.

Schattschneider, E.E. (1960) *The Semisovereign People: A Realist's View of Democracy in America*, Holt, Rinehart, and Winston, New York.

Schlozman, K.L. & Tierney, J.T. (1986) *Organized Interests and American Democracy*, Harper & Row, New York.

Sorurbakhsh, L. (2014) Population Ecology and European Interest Groups Over Time. *European Political Science,* 13(1): 61-77.

Toshkov, D., Lowery, D., Carroll, B. & Berkhout, J. (2012) Timing is Everything? Organized Interests and the Timing of Legislative Activity. *Interest Groups & Advocacy*, 2(1): 48-70.

Wessels, B. (2004) Contestation Potential of Interest Groups in the EU: Emergence, Structure, and Political Alliances. Marks, G. and M.R. Steenbergen (eds) *European Integration and Political Conflict*. , Cambridge University Press, Cambridge: 195-215.

Wonka, A., Baumgartner, F.R., Mahoney, C. & Berkhout, J. (2010) Measuring the Size and Scope of the European Union Interest Group Population. *European Union Politics,* 11(3).