

**Relational Counterbalances to Economic Endogamy:
A Theory and a Historical Example**

Denis Trapido

The Paul Merage School of Business
University of California, Irvine
Irvine, CA 92697-3125
T: (+1) 949-824-0875
dtrapido@uci.edu

Henning Hillmann

Department of Sociology
Stanford University
Stanford, CA 93405-2047
T: (+1) 650-736-7391
hhillman@stanford.edu

and

Department of Sociology
Faculty of Social Sciences
University of Mannheim
D-68131 Mannheim
Germany
hillmann@uni-mannheim.de

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ABSTRACT

We theorize *integration* and *estrangement maintenance* as two relational mechanisms that counterbalance economic endogamy, i.e. economic actors' tendency to transact and cooperate within rather than across socially meaningful groups. We test empirical implications of these mechanisms using longitudinal data on merchant cooperation networks in the 18th century English city of Bristol, where a severe political cleavage between Tory and Whig merchants consistently failed to damage cross-party business cooperation. Our results are inconsistent with the integration mechanism, which implies that cross-party business relations are forged in joint activities that obviate group identity, such as joint participation in civil associations. Instead, we find that such relations resulted from political rivals' maintenance of pointedly arm's length, unequal-status contacts while avoiding same-status business partnerships common within their own parties. These findings expand the perspective of the research on economic endogamy, which has hitherto emphasized non-relational forces, external to contexts at hand, as antidotes to endogamy.

Relational Counterbalances to Economic Endogamy: A Theory and a Historical Example

Economic endogamy, i.e. preferring members and avoiding non-members of one's own social group as economic partners, is persistent in organizational life. Research has detected economic endogamy in transactions as diverse as hiring (Gorman 2005), stock trade (Carruthers 1996), admission to a profession (Moser 2008), and informal exchange within organizations (Ibarra 1992). The enduring scholarly interest in endogamy has been fueled by the conviction that its various forms are unfair, economically inefficient, or both.

There is a variety of scholarly explanations of economic endogamy. When membership in groups is based on ascriptive traits, researchers often explain it by reference to entrenched culturally reproduced biases (e.g. Reskin 2002; Ridgeway 2006). Another widely mentioned and empirically supported origin of endogamy is homophily, i.e. emotional preference for communication with others who are similar on group-defining attributes (e.g. Lazarsfeld and Merton 1954; Brewer and Brown 1998). Endogamy may also result from the tendency of group co-members to be proximate in physical (Blau 1977) or social (Ibarra 1993) space. Landa (1981; Cooter and Landa 1984) suggested a model where endogamy reduces transaction costs and is therefore a result of individual actors' rational choice. Carruthers (1994) advocated an alternative model where endogamy exists because it serves the actors' political rather than economic interests.

Such multitude of suggested endogamy-producing mechanisms, and of empirical examples that their proponents use for illustration, has underscored the importance of understanding how economic endogamy can be absent. Yet it has offered little guidance in specifying the conditions when it is absent, beyond the implication that this must be the case

when no group distinctions are salient enough to trigger endogamy-producing mechanisms. Research on the minimal group has demonstrated, however, that even transient and artificial group distinctions acquire social meaning and generate in-group preferences (Tajfel 1970; Tajfel and Turner 1986), more so in real life than in the laboratory (Bielby 2000:122). What can contain endogamy in typical social conditions, rather than in the rare ones where no distinctions cross this remarkably low salience threshold, is a question that theories of why endogamy exists have been curiously unhelpful in answering.

This question has not entirely escaped academic attention. Economists often follow Becker (1957) and Friedman (1962, Ch. VII) in considering free markets an effective remedy to endogamy. They point out that economic endogamy cuts its initiators off potentially beneficial cross-group transactions and disadvantages them in competition with non-endogamous actors. Free markets, in which competition is unhindered by regulation, necessarily undermine economic endogamy by rewarding those who ignore group distinctions in transactions and driving those who do not out of business. This logic has failed to gain conclusive support, and some studies have shown that endogamy endures in near-ideal free markets (Davis 1973; see Hampsher-Monk 1991 for a review). The other prominent endogamy-preventing factor is external threat: when groups or organizations face a common danger or crisis, positive transactions across group or organizational boundaries intensify. This regularity can be traced to Evans-Pritchard's (1940) classic work on segmentary opposition and has received support in various economic settings (Browning, Beyer, and Shetler 1995; Ingram and McEvily 2007). Economic endogamy has also been argued to erode as a result of public and organizational policies, enacted under pressure from nationwide anti-discrimination movements (Reskin 2001; Jackson 2006).

These explanations exemplify the emphasis on endogamy-preventing factors that are external to the social setting at hand: it is the government that acts upon potential discriminators, by enforcing laws or refraining from market regulation; or it is organizational management that acts upon employees; or it is an external threatening force that affects the relations between groups. Such emphasis on external factors, sometimes coupled with assumptions of individual gain-seeking, reflects the implicit understanding that, in settings where actors belong to meaningfully distinct groups, endogamy is a natural outcome of interaction; for endogamy to erode, non-relational factors must interfere in everyday interaction and counteract this outcome.

In this study, we expand the boundaries of endogamy research by theorizing and testing the endogamy-preventing potential of relational mechanisms. The promise of such mechanisms is in demonstrating how diverse collectivities can contain economic endogamy autonomously, without outside intervention or depending on the assumption that rational gain-seeking by their individual members completely overrides all the factors that generate in-group preference.

The task calls for a longitudinal analysis of settings where endogamy is consistently nonexistent, despite salient group distinctions and absence of external endogamy-preventing factors. Such settings contain actual, not just theoretically construed relational mechanisms that prevent endogamy without eroding group distinctions. We analyze economic activity of the merchant elites in the 18th century English city of Bristol. The data from this historical setting offer several advantages. They cover a period of over a century, during which a severe cleavage between two political groups, the Tories and the Whigs, consistently failed to produce economic endogamy in commercial partnerships. Such continuous absence of endogamy minimizes the opportunity that it is a product of unmeasured external political or economic factors: such factors varied over the period yet did not cause notable variation in endogamy patterns. The intensity of

political confrontation between the Tories and the Whigs rules out that the lack of endogamy was due to the insignificance of the group cleavage. The remoteness of the setting in time helps us avoid political ladenness of the analysis.

We theorize two relational mechanisms counteracting economic endogamy. First, we propose that endogamy exists to the extent that positive social relations are more intense within than between groups; therefore, joint activities that facilitate intergroup social relations counteract economic endogamy. Second, we point out that intergroup dynamics involve relations where actors maintain estrangement, i.e. low but nonzero intensity of intergroup social relations. We propose, contrary to the usual logic in endogamy theories, that these relations simultaneously reinforce group distinctions and intergroup economic partnering. We find that social relations facilitate economic partnering only within – but not across – political groups. Estrangement maintenance, by contrast, facilitates intergroup partnering; without it, partnering among Bristol would have been predominantly endogamous. We discuss the implications of these findings in the concluding section.

Our analysis directly speaks to unranked social groups, not to those based on inequality-implying ascriptive distinctions such as race. We acknowledge and at times emphasize similarities between the two but prefer the term ‘endogamy’ over ‘discrimination’ to avoid artificial parallels with ascriptive inequality.

Relational Counterbalances to Economic Endogamy

We define positive social relations as consensual ties that involve personal interaction and are ends in themselves. We will henceforth sometimes omit, but will always imply, that the

social relations being discussed are positive, i.e. not antagonistic. Typical positive social relations are friendship and acquaintance. Economic relations, in contrast, are means to procurement or exchange (or both) of resources.

We define estrangement as lower intensity of social relations between two actors or groups relative to some baseline level. It is for us a technical term, devoid of its ideological, particularly Marxist, connotations. If the intensity of social relations within groups is taken as the baseline, groups tend to be estranged. More formally, the average intensity of intergroup social relations (taking the intensity of non-existing relations as zero) tends to be lower than the average intensity of intragroup social relations. This can be viewed as an outcome of group identity – or as its antecedent, as described in Deutsch's (1966) communication theory of the emergence of political communities. In either case, estrangement between (and cohesion within) social groups is empirically well established, to the extent that some theories of intergroup processes take it as a premise (e.g. Fearon and Laitin 1996) and others use it to define social groups (e.g. Freeman 1992; Moody and White 2003).

Integration through Joint Civil Affiliations

The postulate that economic relations are accompanied and determined by social relations is fundamental to contemporary economic sociology. We adopt it as a premise. This postulate constitutes the essence of Granovetter's idea of embeddedness, shared by multiple, otherwise often diverging interpretations of the idea (Krippner et al. 2004). Clearly, it does not equally apply to all economic relations. Standardized, short-time economic transactions may involve

little or no social elements, whereas complex and long-term relations, such as joint ventures, can hardly exist unless the partners are at least superficially acquainted.

This immediately points to intergroup estrangement as a precursor of economic endogamy: economic transactions tend to be within groups because so do interpersonal social relations. Insofar as this holds, processes that reduce intergroup estrangement must also reduce economic endogamy. We refer to reduction of estrangement – or, synonymously, intensification of intergroup social relations – as *integration*. Integration is the first of the two relational mechanisms counterbalancing endogamy that we examine.

Integration of groups can only occur as a sum of multiple instances of dyadic integration. Capturing the effect of integration on intergroup economic transactions requires examining if social relations in intergroup dyads facilitate economic transactions in the same dyads. We will specify one way how such dyadic social relations develop and derive from it a testable implication of the notion that integration counteracts economic endogamy.

We proceed from Feld's (1981, 1982) idea that social relations are established in interaction settings that bring multiple people together. Feld called such settings 'social foci'. The concept of social foci has proved especially useful in explaining relations established despite estranging circumstances. Sorenson and Stuart (2008) found that faddish and low-risk settings counteract the negative effect of geographic distance on relations among venture investors. Friedkin and Thomas (1997) show that tracks in schools often serve as settings that link students to teachers and to each other across socioeconomic and ability gaps. The same logic is applicable to social and economic estrangement among social groups. In Feld's terms, group membership is a social focus, therefore group members are in closer social relations with one another than with outsiders. If additional social foci, where group membership is irrelevant to the intensity of

established relations, counteract the relation-generating effect of group co-membership, groups integrate.

We propose that civil society constitutes such an integrating social focus.¹ The evidence presented by Varshney (2001, 2002) and Putnam (2007) suggests that civil activities establish positive relations across boundaries of social groups. Thereby, they make the average intensity of social ties between and within groups more equal, i.e. integrate these groups. To the extent that economic transactions are causally anteceded by social relations, this also reduces economic endogamy.

The ground is now set for formulating the integration mechanism as a hypothesis, along with a testable implication. The structure of the argument presented so far is as follows:

Integration Hypothesis: Interaction in settings where group membership does not constrain the intensity of relations facilitates intergroup economic transactions.

Postulate: In joint civil activities, the intensity of intergroup social relations is not constrained.

Testable Implication: Economic transactions are more likely between two individual members of different groups when they co-participate in civil activities than when they do not co-participate in such activities.

¹ For the purposes of this paper, we define non-state, non-commercial, non-family social organizations and activities as 'civil'. See Varshney (2001:366-370) for a discussion of controversies in defining civil society.

Estrangement Maintenance through Status Distance

The value of the integration mechanism is not as much in its originality – it follows straightforwardly from the logic of embeddedness – as in helping introduce estrangement maintenance, the second relational counterbalance to economic endogamy that we theorize. Integration is by definition a unidirectional process: it can only develop toward intensification of outside relations. Integration of groups is complete when the average intensity of intergroup social relations equals that of intragroup relations. For integration in individual dyads, there is no clear cap on intensity. The opposite of integration is decline of intergroup relations, complete when no such relations are left. It may be called isolation. Yet intergroup relation intensity is not affected only by such unidirectional processes. There are also relational processes that *maintain* a level of interaction intensity in particular intergroup dyads – and, as a result, also in groups. These processes can affect the intensity of social relations in both directions: increase the intensity when it falls short of a certain level and decrease it when it exceeds this level.

Such equilibrium processes are common in economic life. Their various manifestations, such as language usage (Ambady et al. 1996) and cultural norms (Sanchez-Burks 2005), continually attract researchers' interest. The earliest explicit formulation of such processes, given by Simmel in his classic essay *The Stranger* ([1950] 1964), is generic and helpful. According to Simmel, one's relation to "strangers" is defined by two opposing factors. On the one hand, the strangers are socially distant; they are outside one's group and confronting it. On the other hand, and contrary to the intuitive connotations of the word, maintaining the stranger relationship requires socially engaging with the stranger; positive social relations with the stranger are regular and often important. As Simmel put it, "to be a stranger is naturally a very positive relation; it is

a specific form of interaction. The inhabitants of Sirius are not really strangers to us ... : they do not exist for us at all; they are beyond far and near” ([1950] 1964:402). Thus, social relations with strangers can be neither too close nor absent. The formula “strangers are estranged but not isolated”, albeit awkward-sounding, accurately captures the concept in the terms that we suggested above.

The estrangement of groups can persist only if actors routinely reproduce it by maintaining intergroup stranger relations. This means balancing two opposing impulses: socially engaging across groups and ensuring a sufficient social distance. Estrangement will no longer exist if the actors disregard the group distinctions and equalize the intensity of intergroup and intragroup relations, nor will it exist if they sever all intergroup relations. Notably, in both situations the group identity will be compromised. A group can hardly sustain a strong identity if nothing makes its members interact more intensely within than outside the group. The identity will also weaken given complete lack of relations with outgroups relative to whom the identity can be defined: our identity as Earth dwellers is weaker than it would be if we were in relation with inhabitants of Sirius.

We posit that the balancing act of estrangement maintenance is part of intergroup economic transactions, just as it is part of other types of intergroup interaction. On the one hand, intergroup social relations expand the actors’ economic opportunities and bring them in contact with the groups that they define their own groups against. On the other hand, keeping these relations as intense as intragroup relations would undermine the group estrangement and thus de-emphasize the group identity. The actor’s efforts to maintain the group identity lead to an equilibrium where they deliberately develop intergroup economic transactions in ways that facilitate maintaining intergroup estrangement.

Figure 1 visualizes the two relational counterbalances to endogamy that we presented. The dashed arrows show the directions in which the intensity of social relations changes, with the names of the respective counterbalancing mechanisms placed at the equilibria where group-level change stops.

Figure 1 about here

Empirically capturing constraints on the intensity of intergroup social relations, i.e. the tendency denoted by the downward-pointing arrow in Figure 1, is a challenge. We postulate that actors limit the intensity of intergroup social relations by preferentially transacting with social status unequals outside their groups. While this is not the only way of capping relation intensity, we use it to develop a testable implication of the estrangement maintenance mechanism as it is measurable and solidly supported: research in psycholinguistics (Brown and Levinson 1987) as well as sociology (McPherson and Smith-Lovin 1987; Rytina et al. 1988) has consistently demonstrated that social relations across a social status gap remain, other things being equal, more formal and less intimate.

This is a summary of the estrangement maintenance hypothesis, its supporting logic, and its link to the testable implication:

Estrangement Maintenance Hypothesis: Social relations that involve factors constraining their intensity facilitate intergroup economic transactions.

Postulate: Ceteris paribus, inequality of social status constrains the intensity of social relations. Therefore:

Testable Implication: Economic transactions are more likely between two individual members of different groups when these individuals' social status is unequal than when it is equal.

The Empirical Context: The Bristol Merchant Community, 1689-1797

Europe's historic urban communities have provided rich material for the study of the joint functioning of social and economic relations (e.g. Bearman 1993; Padgett and McLean 2006). We will tap into detailed data on economic cooperation in the politically bifurcated merchant community in the 18th century English city of Bristol. For nearly four centuries of British history, Bristol was second only to London in terms of population and economic significance. Through most of the 18th century, it was also the second largest trading port. Bristol fell behind Liverpool in all these characteristics in the last quarter of the 18th century.

Economic Activity: Privateering and Slave Trade

The dominant economic activities of Bristol's merchant community in the 18th century were slave, sugar, and tobacco trade (Morgan 1993). In periods of war (which add up to 67 years between 1689 and 1815), the merchants were also active in privateering, i.e. government-endorsed plundering of enemy vessels. Bristol was the second largest British privateering hub behind London for most of the 18th century (Brown 1978). Behind Liverpool and London, Bristol was the world's third largest organizing center of slave trade: over ten percent of all slave voyages ever made, for which the port of departure is known, originated from Bristol (Eltis et al.

1999). Detailed and reliable records on Bristol merchants' participation in slave trade and privateering voyages were kept and subsequently published.

It was easy for merchants to switch between privateering and slave trade. The expertise, equipment, and labor in the two businesses were interchangeable. There was a 230-person overlap between the 653 known privateers and the 523 known slave trade sponsors in Bristol.² The overlap covered 35 percent of privateers and 44 percent of slave traders. Among the merchants who sponsored more than one voyage in their careers, the respective percentages reached 56 and 67.

Privateering and slave trade were organized as limited-term partnerships – voyages. Most privateering and slave trade voyages were funded by syndicates consisting of multiple (on average, three) individual partners. The merchants typically participated simultaneously in multiple voyages, which was an outcome as well as a source of dense local social networks.

Seniority-based status inequalities are routine in economic partnerships (Erlanger 1980; Hansmann 1986), and the voyage syndicates in Bristol were no exception. The status gradation of voyage partners was continuous and did not translate into formal positions (such as partners and associates in modern law or venture capital firms). Some merchants had accumulated decades of voyage experience and organized tens of voyages. Notable examples are James Laroche and Thomas Deane in mid-century: both achieved high esteem in the community and become aldermen and mayors toward the end of their merchant careers. Others (in fact, every merchant early in the career) had less experience in maritime commerce or no experience whatsoever as they entered voyage syndicates.

² In general, the term 'privateer' applies to owners of ventures as well as ship crewmembers. In this text it refers only to owners.

The Political Split

The political division between Tories and Whigs in Britain in the 18th century was sharp and intertwined with commercial competition. In his description of the late 17th and early 18th century British politics, Carruthers noted that

[o]rganized political competition ... [reinforced] commercial rivalries with political ones. Political affiliation was such an important component of an individual's self-identity that it affected how people behaved, even in ostensibly "apolitical" social settings (1996: 27).

The politics in Bristol replicated this situation on the local level. The opposition between the Tory 'Steadfast Society' and the Whig 'Union Club' shaped the politics in the Corporation, the town's governing body, throughout the 18th century. No other parties were represented in the Corporation. The Tory-Whig rivalry also shaped the elections of the city's representatives to the House of Commons, where Bristol filled two seats. Even though the two parties sometimes sought political agreement, they usually remained uncompromising rivals. A contemporary report from the early 1780s, quoted by Latimer, states that "many men regarded their political opponents [from the other party] as personal enemies" ([1883] 1970: 447). In periods when political cleavages were not so deep, the party solidarity still remained salient: the vote to fill vacancies in the Corporation reflected the party division and so did the election of the mayor and aldermen.³

³ Typically for English city governments of the time, the Bristol Corporation was a self-perpetuating oligarchy. Its members were selected by co-optation and kept their seats for life, except in rare cases of voluntary resignation.

Bristol's political life was shaped by the city's merchant elites, i.e. by the same social circles that managed its privateering and slave trade. Of the 292 Corporation members between 1690 and 1813, we were able to identify 94, or 32 percent, as privateers, and 49 percent of the privateering ventures in the period involved at least one of these 94 people. Given the spells of peace when privateering was nearly nonexistent (notably between 1713 and 1739) and possible omissions due to the age and incompleteness of the records, the membership overlap between the two groups is remarkable. So is the overlap between Corporation membership and the group of slave traders: one in four Corporation members is known to have sponsored slave trade voyages.

Civil Associations

The Bristol merchant elite of the 18th century had a vibrant associational life: we found records of civil involvement for 24 percent of the merchants and 77 percent of the party-affiliated merchants. Beaven (1898) lists eight civil associations that existed through the entire period or some part of it: the Anchor Society, the Colston Society, the Dolphin Society, the Gloucestershire Society, the Grateful Society, the Incorporation of the Poor, the Society of Merchant Venturers, and the Society of St. Stephen's Ringers. With temporary exceptions, such as the Anchor Society at the turn of the 19th century (Beaven 1898:148), these associations had no political coloring and were open to members of both parties.

Data Sources

We compiled the dataset of Bristol privateering from a single published source – the book *Bristol Privateers and Ships of War* by J. W. D. Powell (1930). Scattered in the book is information on 844 privateering voyages between 1690 and 1813. The voyages were sponsored by 653 different individuals. 560 voyages were sponsored by syndicates, i.e. groups of stakeholders. The dataset includes dates of voyages; names of sponsors, captains and ships; prizes taken; and the fate of voyages (if known).

The database of transatlantic slave trade compiled by Eltis et al. (1999) contains the same information (and much more) for slave trade voyages. The database purports to include all slave trade voyages ever made. It includes 27,233 voyages, of which 2064 are known to have originated from Bristol. Bristol slave trade voyages were sponsored by 523 different individuals, most of them co-sponsored by several individuals.

We collected party affiliation data using two kinds of sources. The first source is Alfred Beaven's book *Bristol Lists: Municipal and Miscellaneous* (1898). The book lists the succession chains for various public offices in Bristol. The offices include but are not limited to Member of the Corporation, Mayor, Sheriff, and Member of Parliament. The full list of Corporation members spans 300 years between 1599 and 1898. The book reports party affiliation of many but not all members.

As Beaven's book misses the party affiliation of some Corporation members and entirely ignores that of non-members, we supplemented this information using Bristol poll books. Before the secret ballot was introduced in England in 1872, the way voters voted in parliamentary elections was registered and published in poll books. We obtained electronic or microfiche

copies of all surviving 18th century Bristol poll books (1722, 1734, 1739, 1754, 1774, and 1781) and recorded the party affiliation of the voters who appeared in the list of privateers, slave traders or Corporation members. People's party affiliations rarely changed over time. Therefore, in order to fill gaps in the longitudinal data, we assumed their party affiliation to be constant unless indicated otherwise.

Beaven's book is also one of our two sources of civic association membership data. The book includes the complete chronology of officer succession in Bristol's eight voluntary societies. Wardley (2000) complements this with a chronology of membership in the Society of Merchant Venturers. The Society of Merchant Venturers contributes more to the data than any other association because names of its ordinary members, not just officers, are available. We matched Beaven's and Wardley's association membership data to the rest of the database using merchant names and periods of activity for identification.

Analysis

Lack of Party Endogamy

The plot in Figure 2 helps visually assess the prevalence of economic exogamy and endogamy over the entire period when voyage co-sponsorship ties between party-affiliated Bristol merchants occurred. The figure plots the actual counts of cross-party ties and the counts expected under independence of partner choice from party affiliation. Under independence, the party composition of ties is determined solely by the frequency of Tory, Whig, and non-affiliated

investors' participation in ties. Using the multinomial distribution algebra, we computed the counts of cross-party ties expected under independence in the three-year moving window as

$$\frac{(2tt + tw + nt)(2ww + tw + nw)}{2(tt + tw + nt + ww + nw + nn)},$$

where ww denotes the count of actual ties between two Whigs, tw denotes the count of actual ties where one member is Tory and the other Whig, nw denotes the same for ties between non-affiliated sponsors and Whigs, etc.

 Figure 2 about here

In most years between 1690 and 1800, the actual count of cross-party ties seemingly remained close to the expected count under independence. There were also periods when the actual count visibly exceeded the expected count (notably in the early 1710s and mid-1780s) and vice versa (the late 1710s, late 1720s, mid-1740s). To examine the significance of these visual impressions statistically, we performed a one-sample z-test for proportion in each three-year window. The difference between the expected and the actual counts proved statistically significant at $\alpha=.05$ in only four three-year frames (centered at 1719, 1720, 1727, and 1728) out of 111, which does not exceed the occurrence expected under randomness. For the rest of the period between 1690 and 1800, the Bristol merchants displayed no significant tendency to avoid cross-party partnerships. The preference to partner within parties was *ipso facto* also consistently absent: the entire period was one continuous case of lack of party endogamy.

Model

The data on Bristol voyage co-sponsorship ties presented difficult methodological challenges. First, these are data on networks of social relations. This implies that individuals and groups of individuals may influence each other's behavior and outcomes. To the extent that they do so, the data are autocorrelated, which violates the assumption of the independence of observations in standard regression models (Krackhardt 1988). The statistical tools specially designed for autocorrelated network data, such as SIENA (Snijders et al. 2007) and Statnet (Handcock et al. 2003), proved unhelpful, the former due to the unrealistic computation time and the latter due to the lack of longitudinal functionality. The selection of a suitable non-network method required dealing with a second problematic data feature. The indicator of a cross-party tie, the main variable of interest, is defined only for party-affiliated merchants. The variable is meaningless for the non-affiliated as they can have no cross-party ties. This introduces an inevitable selection bias as the analysis can be performed only for a subset of cases.

It is not clear a priori, however, if this bias will produce biased estimates. To determine this, we estimated the Heckman probit model with sample selection bias (Heckman 1976, 1979; Van de Ven and Van Praag 1981) implemented in the *heckprob* routine in Stata. The procedure assumes an underlying relationship

$$y_j^* = x_j\beta + u_{1j},$$

where x is a vector of predictor values for case j , β is a vector of regression coefficients, and u_1 is the disturbance term. Only the outcome $y_j^{\text{probit}} = (y_j^* > 0)$ can be observed. The following selection equation predicts whether the binary outcome variable is observed:

$$y_j^{\text{select}} = z_j\gamma + u_{2j}.$$

The model assumes that u_{1j} and u_{2j} are normally distributed, with the mean of 0 and variance of 1. ρ (rho) is the correlation between the two disturbances. When $\rho \neq 0$, estimating the first equation with standard regression techniques yields biased estimates. The Heckman probit procedure corrects this bias if variables can be found that strongly affect the outcome of the selection equation but not the outcome of the probit equation.

In our case, the selection equation models whether both tie members have party affiliation. We reasoned that having party affiliation is a function of the merchants' involvement in the city government and prominence in its economic life. Accordingly, we included Corporation membership and the number of privateering or slave trade voyages ever sponsored (separate variables for the arbitrarily ordered first and the second dyad member) as predictors in the selection equation. We also included the indicator of both tie members having the same last name, reasoning that merchants with the same last name are likely to belong to politically active family clans. Then we ran the Heckman probit procedure, pairing this selection model with every probit model we were going to estimate. As expected, all predictors affected the selection variable strongly and positively. Also, ρ was significantly different from zero in all models, signaling that the estimates would be biased without the Heckman correction. This provided the ultimate rationale for choosing Heckman probit as the analysis method.

The other (non-unique) advantage of Heckman probit is that it allows specifying groups within which the assumption of independence of cases is relaxed. We chose year as the grouping variable to make sure that the mutual influence of partner choices within time periods does not bias the results. As noted in the measures section, dyads leave the analysis as soon as they are realized. This contains the remaining, between-periods autocorrelation.

Measures

Dependent Variable and Dataset Structure. – Our unit of analysis is the dyad-year. A dyad-year is termed ‘realized’ if the members of that dyad co-sponsored a voyage in the given year. All non-realized dyad-years are also included in the dataset, and the distinction between the realized and the non-realized tie-years is the dependent variable. The dyads that never broke up for longer than three consecutive full calendar years enter the analysis as one case, with the year in which they were originally formed assigned to them. We consider a merchant to be under risk of having ties between his first and last voyage sponsorship. This criterion underestimates the length of the period under risk if the merchant unsuccessfully searched for partners before his first or after his last voyage and overestimates it if there were gaps in his activity. Given the available information, we found this criterion the most reliable.

Cross-Party Tie. – The binary indicator of a cross-party tie is coded as 1 if one tie member is Tory and the other Whig and as 0 otherwise.

Same Club. – The binary indicator of the same club is coded as 1 if the tie members are known to have joined the same civic association prior to the given year and as 0 otherwise.

Difference in Experience. – Difference in experience measures the status gap in a dyad. It captures the status implications of professional seniority, i.e. cumulative professional experience, and is computed as the absolute value of the difference in the number of voyages that the tie members ever sponsored before the current year.

Difference in Activity. – Difference in activity is an alternative measure of the status gap. It regards professional seniority and the corresponding status as active involvement in professional activities *in the given period*. The emphasis on the given period mirrors that of Carruthers (1996), who used each trader's activity at the London stock exchange in 1712 to determine his degree of professionalism in that year. We computed the measure as the absolute value of the difference between the dyad members' individual activity scores. The individual activity scores were in turn computed as the proportion of all Bristol voyages in the given year in which this particular merchant was involved. For example, if a merchant was involved in three out of ten total voyages that Bristolians organized in 1706, his activity score is 0.3. The analysis preceding the test of the hypotheses below demonstrate that the professional seniority gap, measured either as difference in experience or activity, was concomitant to the gap in social status.

Interaction Terms. – The analysis includes the interaction terms between the cross-party dummy and three variables just described: same club, difference in activity, and difference in experience. The effects of these terms are important: they will show whether the predictions tested in the analysis are supported. For the predictions to receive support, the effects must be strong and positive.

Control Variables. – A kinship tie between two merchants makes them more likely to co-sponsor a voyage and more likely to belong to the same party. It is thus correlated with the

dependent variable *and* its crucial predictor. To prevent the distorting effects of such correlation on the estimate of the relationship between the predictor and the outcome, we control for the binary indicator of the same last name. It is coded as 1 if the tie members share the same last name and as 0 otherwise.

Whig merchants were, on average, more active and experienced than their Tory colleagues. Therefore, if the merchants chose partners at random, we would observe, as the estrangement maintenance hypothesis predicts, that the seniority gap is wider in cross-party ties than in within-party ties. In other words, the support of the hypothesis may be an artifact of the Whigs' higher experience and activity, not of the preference for cross-party partners with a different degree of experience and activity. To rule this out, we include binary variables coded as 1 if, respectively, the more active and the more experienced dyad member is a Whig and as 0 otherwise.

Table 1 about here

Test of Hypotheses

A test of the estrangement maintenance hypothesis requires prior establishing that voyage experience and activity entailed higher social status in the Bristol merchant community. The analysis in Table 2 strongly suggests that this was the case. It shows that the ordering of merchants on the original lists of voyage sponsors (letters of marque or records in voyage registers) was non-random. The order in which merchants' names appeared on the lists closely matched their experience and activity: the more experienced and active merchants were listed

first, the less experienced and active later. Interpreting it as a reflection of their status rank is consistent with the pattern that Eccles and Crane (1988) and Podolny (1994) detected in “tombstone advertisements”, the announcements of security offerings that appear in trade publications. The banks in such ads were listed in the order of declining status in the market.⁴

Table 2 about here

The analysis testing the effects of club co-membership and seniority gap on cross-party cooperation is presented in Table 3. We begin with examining the effect of belonging to different parties on the emergence of voyage co-sponsorship in Model 1. The coefficient of the cross-party tie indicator is close to zero, showing that affiliation with different parties neither facilitated nor hindered co-sponsorship ties. In other words, party endogamy (as well as exogamy) was absent, as Figure 2 has visually demonstrated.

Table 3 about here

The interaction effects of the cross-party indicator with club co-membership and seniority gap in models 2, 3, and 4 directly test our hypotheses. No model includes more than one interaction term – this keeps the interpretation of the main effects straightforward.

Model 2 does not support the conjecture that belonging to the same non-political civil association, or club, facilitated cross-party economic ties. The effect of the interaction between

⁴ Name ordering cannot be used in this analysis as an (alternative) indicator of status because it is defined only for the merchants who have co-sponsored. Experience and activity are defined for all merchants at all times.

the cross-party tie indicator and club co-membership is close to zero. Thus, club co-membership did not make a Tory and a Whig more likely to co-sponsor a voyage. Yet it did facilitate co-sponsorship among members of the same party, as evidenced by its positive main effect.

Model 3 confirms that cross-party co-sponsorship ties were more likely to the extent that the professional experience of the potential partners was unequal. Model 4 shows the same for the inequality of professional activity. This is indicated by the positive and significant respective interaction effects. Within their own parties, by contrast, merchants tended to choose partners of equal seniority, as evidenced by the negative main effects of the difference in experience and activity. Models 5 and 6 show that controlling for the Whigs' higher seniority does not weaken these effects. The magnitude of the regression coefficients in models 3 and 5 is much larger than in models 4 and 6 because the difference in experience variable varies on a much wider range than the difference in activity variable (see Table 1). There is no substantive result behind this difference in magnitude.

The main effect of the cross-party tie indicator is negative and significant in all models where its interaction terms with the seniority gap variables are included. We highlight this result: it shows that cross-party ties were unlikely, i.e. there was significant endogamy, among merchants of equal experience and activity. It was due to partnering across experience and activity gaps that endogamy was absent in the Bristol merchant community as a whole.

Models 7-10 offer an alternative check of the findings. Of the three possible pairing outcomes in the previous models – no tie, cross-party tie, within-party tie – Models 7-10 exclude the first, leaving only 504 valid cases. The contrast between the remaining two outcomes is the dependent variable in the main equations. This analysis confirms the earlier conclusions. The absence of significant effects of joint club membership indicates that it does not generate

endogamous or exogamous preferences. The differences in experience and activity facilitate party exogamy: the effects of the respective variables on cross-party ties in Models 8 and 9 are positive and significant. Model 10 shows similar effects when both variables are included; this confirms that the variables' effects are not mutually substitutable.⁵

Figure 3 visually represents the magnitude of these effects. Compared to ties with no difference in experience, ties where the difference was just above the median were 50 percent more likely to be cross-party; the predicted probability doubled by the 75th percentile of the experience difference variable, tripled by the 86th and quadrupled by the 90th. The same comparison for the difference in activity shows that the predicted probability of cross-party ties increased by 50 percent at the 60th percentile, doubled at the 80th, tripled at the 92nd, and quadrupled at the 96th.

Figure 3 about here

Table 4 restates the Heckman probit results in a more intuitive way and clarifies how the effect of the seniority gap is produced. It shows that the gap in experience and activity was larger in cross-party ties than in same-party ties. It also demonstrates that this was the case due to *both* the higher seniority of the more senior partners and the lower seniority of the less senior partners in cross-party ties.

Table 4 about here

⁵ The same last name variable is not in Models 7-10 as the estimation failed when we attempted to include it: there were too few cross-party ties between kin.

We conducted two additional analyses to further probe our claim that cross-party voyage partners maintained estrangement, i.e. kept the intensity of their relations lower than that of within-party relations. These analyses use alternative indicators of estrangement maintenance, unrelated to seniority. First, we found that senior merchants relegated rival-party partners to lower status positions in syndicates relative to their fellow party members. We saved the difference between the dyad members' positions in the voyage sponsor list (as in Table 2) in a variable. For example, if one dyad member was listed first and the other fourth, the variable value was 3. Insofar as the ordering in the lists reflected status, larger variable values mark a larger social distance. We compared the means of the variable in the same-party and the cross-party dyads using a t-test. The test confirmed that the gap in the ordering was larger between cross-party partners than between same-party partners: the mean was 1.92 for the same-party ties and 2.25 for the cross-party ties. The difference between the means is significant at $p = .003$.

Second, we examined the variation in the recurrence of ties, reasoning that the more often two merchants partner again after their first partnership, the closer their social relationship. We found that same-party partnerships recurred, on average, 1.25 times and cross-party partnerships 0.96 times. The difference is significant at $p = .10$.

Discussion

Decades of research have generated a variety of arguments explaining why economic transactions tend to be endogamous, i.e. occur within rather than between socially meaningful groups. These arguments specify various mechanisms that lead to economic endogamy while,

explicitly or implicitly, assuming endogamy itself as a natural aggregate outcome of ongoing interpersonal relations. By showing that even transient and artificial group distinctions suffice to generate in-group transaction preference, research on the minimal group has reinforced this assumption. Theories of endogamy have therefore had difficulty explaining lack of endogamy, except when external forces – such as government or managerial measures, or threats common to all groups in question – override actors’ natural regard for group distinctions.

Our study questioned the assumption that, when unchecked by external forces, interpersonal relations result in economic endogamy. We suggested two mechanisms of how interpersonal relations can counterbalance economic endogamy and tested hypotheses that these mechanisms imply in a historical setting where endogamy in business transactions was consistently absent given a salient political divide and no external counteracting factors. The integration mechanism suggested that joint activities in settings where group identity is irrelevant, such as apolitical civil associations, facilitate cross-group relations and thereby undermine endogamy. It did not get support. Instead, we found that absence of endogamy resulted from political rivals’ maintenance of pointedly arm’s-length – yet economically functional – relations and avoidance of closer business partnerships that were common within their parties.

These results are theoretically consequential. First, they enrich the theory of economic endogamy by demonstrating that endogamy can be contained by micro-level relational mechanisms, without any external interference. At the same time, the results do not support the hopes that Varshney (2001) and, with reservations, Putnam (2007) placed on the potential of civil involvement to knit divided communities together with networks of relations and erase the economic consequences of divisions.

Second, our theory and analysis showed how absence of economic endogamy can coexist with, and even be reinforced by, salient group distinctions. Barely considered in existing theory and research on economic endogamy, this adds new possibilities to interpretation of the results. On the one hand, apparently socially and economically integrated communities may nevertheless maintain segregation by sustaining closer social and economic relations within and arm's-length relations across the dividing lines. This distinction may easily evade cruder measurement tools but be highly consequential if it implies in-group favoritism and "glass ceilings" for out-group members. On the other hand, and optimistically, persistent absence of economic endogamy given distinct, rivaling groups suggests that social segregation does not preclude functional intergroup economic relations. Even when groups are estranged socially, they can be integrated economically.

While we emphasize the relational, micro-level origin of such social-but-not-economic estrangement, we do not pretend that it exists independently of larger, macro-level social conditions. The social norms and institutions that enable it were not our subject here but deserve closer attention. We propose that a distinction between what may be called the estrangement and the isolation normative regimes is helpful. Estrangement regimes of the kind that we suspect to have existed among Tory and Whig merchants in the 18th century Bristol prescribe maintenance of arm's-length social relations between members of different groups. Isolation regimes, in contrast, discourage all cross-group social relations. As individuals occasionally violate isolation regimes, the same average intensity of intergroup social relations as in estrangement regimes may ensue. Yet intergroup economic relations in isolation regimes are likely to remain suppressed because even the weaker social relations that accompany, and often are necessary, for economic transactions will violate these regimes if they cross the group boundary. The

Nuremberg laws of 1935 are an example of a radical, government-orchestrated effort to shift from an estrangement to an isolation regime, and their immediate suppressive effect on economic relations between the Aryans and the Jews was similar to what we just described (Bajohr 2002). In most cases, of course, the regime changes are less drastic and more difficult to detect empirically.

Finally, a comment is due on the role of rational calculation in counteracting economic endogamy. As we noted in the opening section, the vision that rational actors in free markets disregard group distinctions and thus eliminate endogamy has not received conclusive empirical support. This by no means warrants adopting the extreme position that rational gain calculation has no role in facilitating intergroup economic relations. In any setting, it is reasonable to expect that some intergroup transactions happen despite group divisions yet due to expected economic benefits. Yet we insist, along with others (e.g. Hampsher-Monk 1991; Ridgeway 2006), that economic rationality is insufficient to completely eliminate endogamy because it can hardly exist in the pure forms envisaged by its theorists. Our analysis only adds confidence to this claim. The finding that Bristol merchants commercially connected to club co-members from their own but not the rival party is inconsistent with rationality. Nor is consistent with it the merchants' reluctance to cooperate with same-status members of the rival party. Rationality of the highest purity grade, which would alone be sufficient to eliminate economic endogamy, must make actors completely indifferent to their partners' social group membership. Wherever such rationality exists, it is still awaiting its discoverer.

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Table 1. Descriptive Statistics of Bristol Voyage Co-Sponsorship Dyad-Years, 1689-1797

Variable	Minimum	Median	Mean	Maximum	Standard Deviation
Realized tie	0	0	.02	1	.14
Cross-party tie	0	0	.34	1	.47
Same club	0	0	.20	1	.40
Difference in experience	0	5	7.13	58	8.07
Difference in activity	0	.02	.03	.86	.05
Cross-party × Same club	0	0	.06	1	.24
Cross-party × Difference in experience	0	0	2.39	58	5.57
Cross-party × Difference in activity	0	0	.01	.86	.03
Same last name	0	0	.01	1	.10
Whig more active	0	0	.43	1	.50
Whig more experienced	0	1	.67	1	.47

Note: Statistics are computed for the cases in the main Heckman probit equation, i.e. only for ties among party-affiliated merchants.

Table 2. Merchant Experience and Activity by Position in Voyage Sponsor List

Position in voyage sponsor list	Experience (prior voyages sponsored)		Activity (voyages sponsored in given year)		N
	Mean	Median	Mean	Median	
1 st	8.8	5	2.6	2	963
2 nd	7.3	4	2.2	2	955
3 rd	4.8	2	2.0	2	608
4 th	4.3	2	1.9	1	396
5 th	3.1	1	1.7	1	178
6 th	3.4	1.5	1.5	1	72
7 th	3.5	2	1.6	1	38
8 th	2.8	2	1.5	1	21
9 th	2.2	0	1	1	5
10 th	0	0	1	1	2

Note: Statistics were computed for the complete list of co-sponsored Bristol privateering and slave trade voyages. The discrepancy between the number of first- and second-listed sponsors (963 ≠ 955) is due to ignoring the merchants whose identity is ambiguous.

Table 3. Heckman Probit Models of Voyage Co-Sponsorship among Bristol Merchants, 1689-1797

	Dependent Variable: tie = 1, no tie = 0						Dependent Variable: cross-party tie = 1, within-party tie = 0			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Intercept	-1.84** (.07)	-1.92** (.08)	-1.83** (.15)	-1.71** (.08)	-1.84** (.08)	-1.63** (.16)	-2.31** (.24)	-2.32** (.27)	-2.29** (.26)	-2.31** (.28)
<i>Control Variables</i>										
Same last name	1.02** (.10)	1.02** (.10)	1.03** (.10)	.99** (.10)	1.04** (.10)	.97** (.10)				
Whig more active					.07 (.04)				-.31** (.12)	-.22 (.13)
Whig more experienced						-.10* (.04)		-.32** (.11)		-.25* (.12)
<i>Variables of Interest</i>										
Cross-party tie	.004 (.04)	.01 (.04)	-.09 [†] (.05)	-.11* (.05)	-.08 [†] (.046)	-.13* (.05)				
Same club		.12* (.05)					-.01 (.11)	-.03 (.12)	-.02 (.12)	-.04 (.12)
Cross-party × Same club		-.03 (.09)								
Difference in activity			-.93 [†] (.52)		-1.33* (.59)				4.67** (1.25)	3.12* (1.29)
Cross-party × Difference in activity			2.68** (.71)		2.94** (.75)					
Difference in experience				-.01** (.003)		-.01** (.003)		.03** (.006)		.02** (.006)
Cross-party × Difference in experience				.02** (.004)		.02** (.005)				
ρ (rho)	-.19** (.04)	-.16** (.04)	-.20** (.04)	-.23** (.04)	-.18** (.04)	-.25** (.04)	.66** (.09)	.67** (.09)	.64** (.09)	.66** (.09)
N (selected)	28,360	28,360	28,360	28,360	28,360	28,360	504	504	504	504

Note: Standard errors (in parentheses) allow for interdependence of observation within years. The unit of analysis is tie-year. The selection equations (omitted) include the same predictors for all models. $\rho \neq 0$ signals that results would be biased without the Heckman correction. 172,166 tie-years not selected in Models 1-6 because one or both members are not affiliated with either party; additionally, all nonexistent ties deselected in Models 7-10.

[†] $p \leq .10$, * $p \leq .05$, ** $p \leq .01$ (two-tailed tests).

Table 4. The Experience Gap and the Activity Gap by Party Composition of Voyage Co-Sponsorship Ties

		Experience Gap	Activity Gap	Experience of Less Experienced Partner	Experience of More Experienced Partner	Activity of Less Active Partner	Activity of More Active Partner
Same-party ties (N=345)	Mean	6.4	1.1	3.3	9.7	1.38	2.47
	Median	4	1	2	7	1	2
Cross-party ties (N=159)	Mean	8.8	1.5	2.7	11.5	1.37	2.84
	Median	5	1	1	7	1	2

Note: Experience is defined as number of voyages ever sponsored and activity as number of voyages sponsored in the given year. The gap is the absolute value of the difference between the experience or the activity scores of the two dyad members.

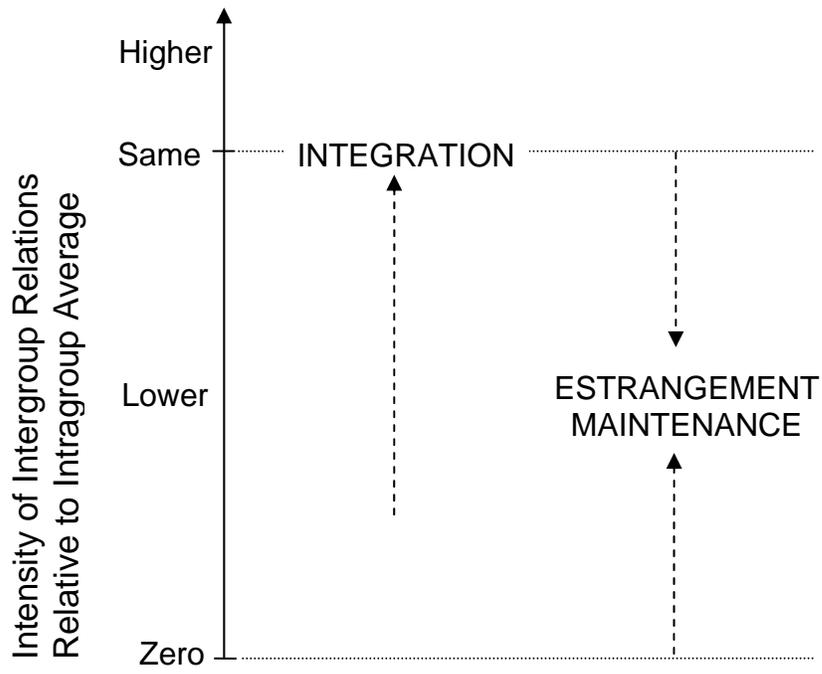


Figure 1. Hypothesized Relational Counterbalances to Economic Endogamy

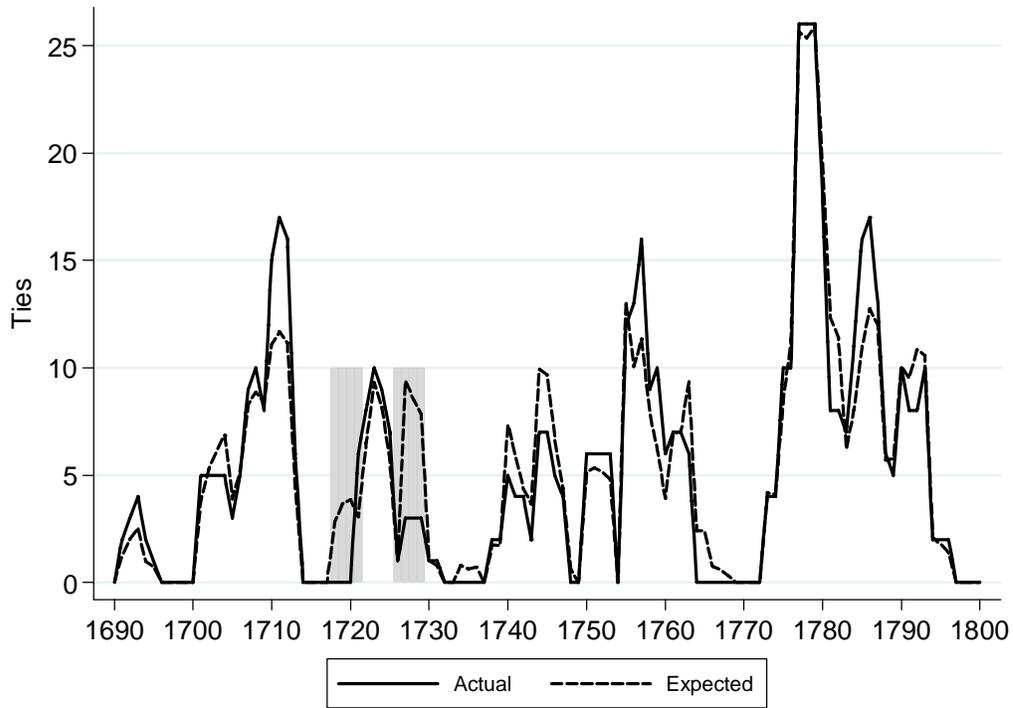


Figure 2. Counts of Cross-Party Co-Sponsorship Ties in Bristol Privateering and Slave Trade

Note: Expected counts were computed assuming independence between party affiliation and partner choice. A three-year moving window was used. Shading marks windows with statistically significant difference between actual and expected tie counts.

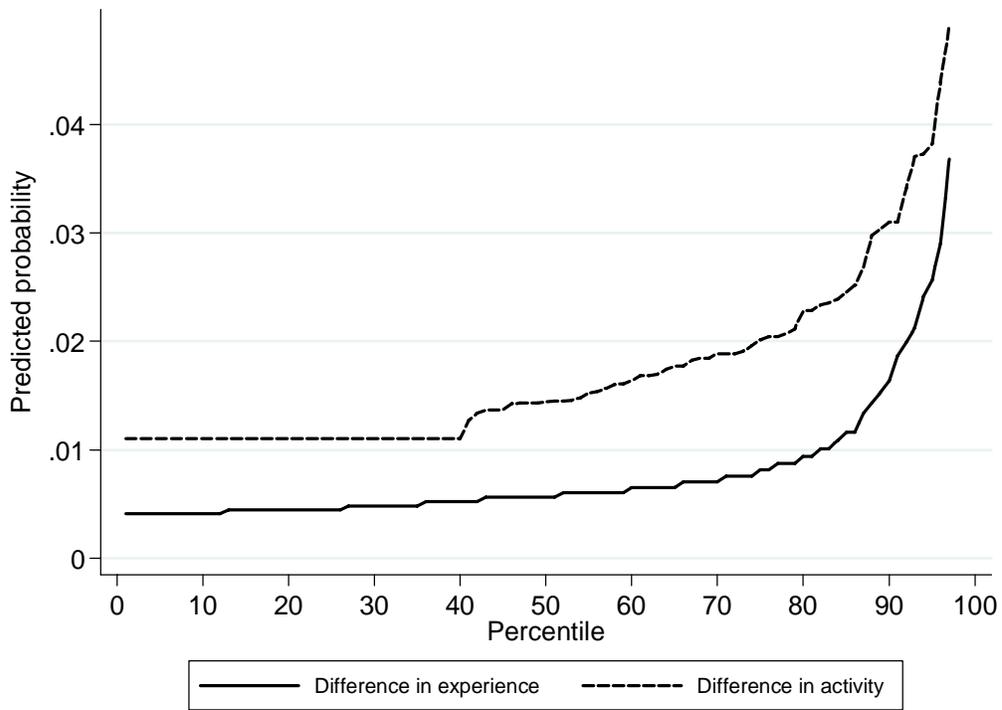


Figure 3. Predicted Probability of Cross-Party Voyage Co-Sponsorship among Bristol Merchants by Percentile of Professional Seniority Gap Variables

Note: The probabilities are computed using Model 8 for the difference in experience variable and Model 9 for the difference in activity variable. Other variables are held at the median.