THE DETERMINANTS OF MEMBERSHIP IN COOPERATIVE BANKS: COMMON BOND VERSUS PRIVATE GAIN

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ABSTRACT: *Membership in organizations has been rarely studied by economists. We study the determinants of membership in financial cooperatives, organizations that have significant economic and social presence in many countries. By identifying economic and non-economic incentives to be members of cooperatives, our conceptual framework is novel. Our empirical work analyzes panel data from 2001–2009 for Finnish cooperative banks and compares two empirical concepts of the membership ratio. We find evidence that monetary incentives are important reasons to join, but also the size of the community from which members are recruited plays a role. Over time, monetary incentives have increased and this may have contributed to faster growth in membership in cooperatives based in larger municipalities after these changes. Cooperatives attracting new members primarily on the basis of monetary rewards is also consistent, over time, with a reduction in the role of the common bond.*

Keywords: ownership, membership, cooperative, bank, common bond, social enterprise, incentives

JEL classification: G21, P13

1   Introduction

Economists have traditionally paid little attention to the question of what motivates people to join economic organizations. A notable exception is work on the determinants of union membership that started from the seminal contribution of Ashenfelter and Pencavel (1969). Their key insight was that the determinants of union membership could be analyzed within a rational choice framework, where potential union members compare benefits of unionization to its costs and join if the former exceed the latter (see Blanchflower (2006) for a survey on the empirical literature). One contribution of this paper is to extend this heuristic framework and build a general framework for studying membership in another type of economic organization, namely cooperatives. In so doing we contribute to the relatively limited literature on this topic for social economy enterprises, amongst them cooperatives. Analysis of membership has remained unexplored except for Emmons and Schmid (1999) who looked at membership rates in US credit unions and Gottlieb (2007) who used data for Michigan workers in the furniture industry to investigate the probability of joining insurance cooperatives in the USA in the late nineteenth century. While worker cooperatives have been studied more extensively (e.g. Bonin et al. 1993, Dow and Putterman 2000), even there the determinants of membership have seldom been addressed with only a single study by Estrin and Jones (1995), who investigated the determinants of membership rates in French worker cooperatives.

The second contribution derives from the potential implications of our findings for a larger set of issues concerning financial cooperatives in particular and social economy enterprises more generally. Cooperatives are social organizations where monetary incentives may play different roles in the overall incentive structure than in other enterprises. For example, some evidence exists that managerial (agent) compensation in cooperatives and non-profits is characterized by incentive systems that are low powered relative to those found in profit maximizing enterprises (e.g. Hallock 2002, Hueth and Marcoul 2009). It is thereby important to investigate the comparable importance of economic and non-economic rewards for members (principals) in cooperatives. That is, while many argue that monetary incentives may be one reason for individuals to join, others include issues related to social identity and community building amongst the reasons to join. Jussila et al. (2012a) for example take a social exchange perspective on cooperation and argue that both individual and collective socio-emotional outcomes (satisfying social and esteem needs) may be expected by members participating in cooperation. While we do not have individual-level data to address these questions, many of the issues are related to the question of the optimal size of the cooperative. By including member-community size as a control, we are able to capture both its importance and the ongoing tension between economies of scale and regulation (putting pressure for increasing size) and maintaining member participation (constraining growth; see Jones and Kalmi (2012) for further analysis).

Third, economically, financial cooperatives are a particularly important and vibrant type of cooperative. For instance, they are very prevalent in the USA (e.g. McKillop and Wilson 2011, Klinedinst 2012).[1] Around 101 million inhabitants of the

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1   We are not aware of statistics that would give an estimate to the overall membership figure for financial co-operatives. For the subset of credit unions, the World Council of Credit

USA (about 48% of the economically active population) were members of credit unions in 2014 (WOCCU 2015). This represents a substantial growth from 1996 when membership totaled around 70 million (Emmons and Schmid, 1999). Another example is France, where cooperative financial institutions have around 60% market share of both deposits and loans, and they have around 24 million members, or more than one-third of the total population (EACB 2015). For comparison, the number of trade union members in France in 2003 was 1.8 million and in the USA around 16 million (Blanchflower 2006). In 2013 the specific case we examine, Finnish financial cooperatives in the OP Group, had a market share of retail deposits and retail loans around 35% (FFFS 2014) and, as elsewhere, those shares have been mostly growing (Groeneveld 2014). What makes investigation of financial cooperatives especially timely and relevant is that they have been found to incorporate lower risk and possess lower lending cyclicality (Hesse and Cihak 2007, Ferri et al. 2014), both features that are seen as desirable after the financial crisis. Also, despite their economic importance, financial cooperatives have remained relatively understudied. The literature on financial cooperatives usually focuses on performance comparisons with commercial banks (e.g. Altunbas et al. 2001, Iannotta et al. 2007, Ory and Lemzeri 2012, Ferri et al. 2015, Mäkinen and Jones 2015).

Fourth, we note that in recent times cooperative organizations have actively sought to increase their membership rates, to achieve competitive advantage and ensure that cooperatives function according to customer preferences (e.g. Fonteyne 2007, Wyman 2008). Jones and Kalmi (2015) have recently provided evidence that higher membership rates are associated with better performance. For this reason also, it is important to understand the determinants of membership rates in financial cooperatives.

Finally, we make some empirical contributions. This is the first study that investigates two empirical concepts of the membership ratio, namely the *relative attractiveness of the cooperative* and the *recruiting success of the cooperative*. The former is measured as the proportion of members of potentially eligible persons (broadly understood as people living in the area), while the latter is measured as the proportion of members of a narrower class of potential members (individuals who are customers of the cooperatives).

Second, our empirical analysis is based on data from the largest Finnish cooperative banking group, the OP Group and whereas much previous work on cooperatives has used cross sectional data, we are able to use panel data. The data are for 186 independent cooperative banks for the years 2001–2009 and are assembled by a single provider, are unusually detailed, very homogeneous and highly reliable; similar data have been used successfully to address other issues (e.g. Jones et al. 2012.) The data on membership and financial statements come from the OP Group directly and it has been matched with data on competitor presence and various socio-demographic factors obtained from Statistics Finland.

We continue by presenting our conceptual framework. This is followed by a brief overview of the structural features of Finnish cooperative banks. Next we draw on the two preceding sections to develop a series of hypotheses. After describing our data we

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Unions estimates the membership of credit unions worldwide to be around 217 million, of which 111 million is from North America (WOCCU, 2015). This figure does not include at least 50 million members of European co-operative banks that are structured differently from credit unions, as well as financial co-operatives other than credit unions elsewhere.

report the results from the empirical analysis. Finally, we conclude with a discussion of some implications of the findings including more general implications for social economy enterprises.

2   Conceptual framework

In considering theoretical arguments that bear on the questions of why individuals choose to become cooperative members and why cooperative organizations want to secure additional members, we focus on *customers' demand for membership*. Cooperative banks practice open membership, which means that anyone who is willing to pay the membership fee will be accepted as a member, and the membership fee is usually small relative to the amount of transactions. According to Hansmann (1996), financial cooperatives often benefit from economies of scale, giving a powerful incentive not to restrict membership by setting high membership fees.[2] This issue is slightly more complicated in European cooperative banks where individuals can be customers even without becoming members. However, given that membership provides incentives to use bank services more intensively, we would expect that banks would find it important to aim for widespread membership. Also there are important structural features that ensure that existing members do not have an incentive to close membership. In several cases the monetary rewards for membership in financial cooperatives do not depend on profitability, so that incumbent members do not get any greater share of revenue for themselves by restricting membership.

In examining the kinds of economic incentives potential members have for joining a cooperative, the traditional answer given by economists as to why human beings select a course of (economic) action is based on the assumption of individual and material self-interest as being the primary motivation. However, in research by economists on topics such as organizations and identity (e.g. Akerlof and Kranton 2005) as well as on cooperatives (e.g., Jussila et al. 2012b), counterarguments have been put forward that also acknowledge the role of non-monetary motivations, expectations and rewards.

Among economic motivations, the division between individual and collective economic motivations can be made on the basis of whether the decision to join is based solely on self-interested calculation or whether membership has elements of an indivisible or a public good (see Jussila et al. (2012a) for indivisible collective value). Examples of individual motivators to join are competitive interest rates for loans and deposits and earning rebates based on transactions. An example of a collective motivator is the collective value created on the market through the competitive pressure created by interdependent member action supported by their democratically controlled collective resource (i.e. the cooperative bank). Considering this role of cooperatives as a response to poorly functioning markets or opportunities to create more consumer value, they can also provide public economic goods. An example is the supply of banking services in

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2   This is in stark contrast to the case in some other cooperatives. Thus in worker co-operatives, existing members (who are mainly workers), may have incentives to close the co-operative to new members, to prevent incoming employees from free-riding on the investment of incumbent employees (Ben-Ner 1988; Dow and Putterman 2000). Also Gottlieb (2007) shows how US cooperative insurance societies adopted pricing policies to discourage older workers from joining.

sparsely populated areas, where cooperatives are often the sole providers of goods and services (Fulton and Hammond-Ketilson 1992).[3] In such conditions, also non-members can benefit by the introduction and maintenance of services. Some individuals may therefore join cooperatives for the sake of the common good, even if based on purely individualistic calculations they would not join. In other words, a collectivistic motivation to join a cooperative reflects the fact that the optimal strategy for an individual may depend on what others are doing.[4]

As self-governing economic organizations, cooperatives also have a strong associational element (Jussila et al. 2012a). Therefore there may be non-economic, social motivations for joining cooperatives. These may be especially realized by becoming involved in the governance of the cooperative.[5] Furthermore, membership in cooperatives may be a good application of Benabou and Tirole's (2006) argument concerning the roles that social image and reputation often may play in determining behavior or Akerlof and Kranton´s idea (2005) that identity can exercise a powerful role in influencing an individual´s attitude towards an organization. Some of the socio-emotional rewards of membership are individualistic (Jussila et al. 2012b). Such rewards include the strategic use of cooperative to promote positive self-evaluations, enhanced social status from being a cooperative member, and being able to contribute to decisions that are aligned with one's preferences.

In sum we argue that an individual will decide to join a cooperative when the utility gained through membership exceeds the cost of membership. In turn utility comprises the net utility from participation as well as the monetary gains from bonuses, while the key cost is the membership fee. Cooperatives may influence the monetary gains from membership by changing the way or rate at which members are rewarded. This in turn changes the balance between monetary and non-monetary rewards, and may affect cooperatives in a heterogeneous manner.

3   Structure and membership of Finnish cooperative banks

The background of the OP Group[6] is in the agrarian reforms of the early 20th century in Finland. The initial purpose of the cooperative bank was to intermediate

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3   For developing countries, there is evidence that membership in financial co-operatives is especially strong in areas where commercial banking is weak (Perilleux et al. 2016).

4   And, especially in small localities in Finland, we expect that individuals probably know where their neighbors bank. By contrast, there is a potential for free-riding (enjoying the benefits of the co-operative but not contributing to the co-operative capital) that might lead into an under-investment in the co-operative and ultimately undermine its existence. On the other hand, from a collectivistic point of view, members would adapt to the norms of the member community and avoid such deviance.

5   Birchall and Simmons (2004) have studied the motivations of members to become involved in the governance processes of co-operatives. They have also divided the motivations into individualistic and collectivistic motivations in a fashion similar to what is done here.

6   During the years 2008-2014 the OP Group was called OP-Pohjola Group. This was following the acquisition of the insurance company Pohjola in 2005. In 2014, Pohjola was dropped from the group name. Because during most of the period described in the paper as well as currently the shorter name was in use, we use it here also throughout.

agricultural loans made by the Finnish government to small farmers. From these humble beginnings the group has transformed itself into the leading retail bank in Finland. In the early 1970s the cooperative financial institutions were legally transformed into cooperative banks that could offer a full range of banking services. This change in strategy was largely successful, as the OP Group was able to increase its market share in consumer deposits and loans from below 20% in the early 1970s to over 30% by the late 1980s, at which level it has remained ever since. Since 2009 the OP Group has been the largest retail bank in Finland in terms of lending and deposit market shares. The group has experienced a rapid growth in membership from 290,000 in 1970 to around 1.4 million in 2014, implying that more than one in four inhabitants of Finland was a member in one of the cooperative banks in the group.

The OP Group is characterized by a complex governance structure. Certain centralized functions in the group are divided between two units at the group-level. Pohjola Bank (before 2008, OKO Bank) operates as the central bank for cooperative banks, guaranteeing liquidity for them. It also takes care of more specialized operations (e.g. investment and corporate banking) and is the group's counterparty in the interbank market and in central bank operations, whereas individual banks are responsible for retail operations. Another unit, the OP Group Central Cooperative is responsible for joint marketing activities, development of online banking and IT services, product and service development, and provision of training services for the group.[7] Within the group, the banks are also cross-insuring themselves. For cooperative banks, there are significant benefits from group membership—for example, small banks are helped to overcome size limitations and to attain economies of scale (Desrochers and Fischer 2005). These group-level units are in turn owned by individual member banks, proportionally to their size.

Despite the presence of strong co-ordination of activities within the group, cooperative banks are essentially autonomous and make a variety of decisions independently. This includes setting loan and deposit rates, making lending decisions, and hiring staff. Each cooperative is governed by the board of directors that consists of member representatives. The board exercises oversight over the professional management that is responsible for daily management issues.

Individual cooperative boards are elected by supervisory boards – separate boards specialized in electing and supervising the board of directors – on behalf of the annual general meeting of members or a representative body.[8] A particularly important feature of the allocation of decision-making rights within cooperatives is that, consistent with the general principles, voting rights in member meetings are evenly divided among the members (i.e. 'one-member, one-vote'). Thus voting rights are independent of both equity investment beyond the required membership fee and the total sum of member's transactions with the cooperative.

To become a member, the customer must pay a nominal membership fee (averaging about 100 euros) that is returned when the individual ceases to be a member.[9]

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7   Jones et al. (2012) examine the economic effects of training in OP banks.
8   A general meeting of the members may be replaced by a meeting of a representative body – a body elected by members to represent them.
9   Although there are no explicit adjustments made for inflation, the par values of basic equity may be increased.

Importantly, since a customer can lend or borrow from the bank without being a member, the customer thus has to make an active decision to become a member.[10] The large majority of the cooperative bank members are individuals and membership by organizations remains rare, although corporations and foundations may become members with limited rights (no right for bonuses and no voice in elections). Also employees are allowed to be, and typically are, members. There are no territorial requirements: one can be a member of a cooperative in an area other than where one lives. However, most commonly customers choose the bank nearest to them and thus they live and bank in the same locality.

Usually no interest is paid on the basic equity and all members must purchase one share of basic equity. The second class of equity is additional equity. It is entirely voluntary for members to purchase additional equity shares. Interest is paid on this additional equity according to rates determined by the board. Although the interest paid is not directly tied to profitability, the bank board can adjust the interest rate according to it. This method of compensation thus comes closest to the ways of sharing residual revenue in investor-owned firms.

One of the key principles of co-operation is that the economic surplus is distributed in relation to the use of the cooperative service, rather than on the basis of invested capital. In the OP Group, this happens through a method of patronage refunds that are called 'bonuses.' Members receive as bonuses a certain percentage of the amount of their deposits, loans, investments in mutual funds and insurance products (we call this combination 'financial involvement'). These bonuses (or rebates), in effect, lower the price of services for members.[11] The member bonuses are paid when the combined amount of these deposits, loans and mutual fund holdings with the bank is at least 5,000 euro. The rate of the bonus was 0.12% of the value of transactions in 2001–2006. In 2007, it was increased to 0.18% and in 2008 further to 0.25%, at which level it was also in 2009. The set of products for which the customers could earn bonuses was also increased in 2007, as a wider range of insurance products provided by Pohjola was included into the bonus program. These changes in remuneration rates and eligible products was also visible in the average bonuses annually paid to members: they went up from 37.38 euro per member in 2006 to 62.27 euro in 2007, 94.40 euro in 2008 and 98.38 euro in 2009.

4   Hypotheses

In this section we translate key ideas developed earlier in the conceptual framework into specific hypotheses that can be tested for the case of Finnish cooperative banks and by using bank-level panel data. For the purpose of testing our theoretical framework it would have been ideal to have individual-level data, but we can use only

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10   The arrangement whereby customers choose whether or not to become members is found in most European co-operative banks, and not just in Finnish banks. However, this is different from credit unions where, in order to have some financial involvement with the institution, an individual must first become a member. For example, only credit union members can get loans. Typically the membership requirement is to make a modest initial deposit in a savings account.
11   For tax reasons, bonuses are first deducted from service fees the banks charge their customers. When all bonuses have been used, the rest is paid in cash to the member.

bank-level data.[12] For this reason, we explain in this section how our framework can be interpreted by using bank-level data. While we will defer discussion of the precise measurement of all dependent and independent variables until the next section, note that in the empirical analysis we find it instructive to employ two different dependent variables. One reflects the relative attractiveness of the cooperative (the member per population ratio) and the other focuses on the recruiting success of the cooperative (the members per customer ratio).

We identify two different types of *individualistic* economic incentives to join co-operative banks: (i) to get competitive rates for loans and deposits; and (ii) to receive bonuses based on the volume of financial involvement. The importance of these variables may differ depending on the particular membership ratio that we want to explain. Because both members and non-members are offered the same rates for loans and deposits, interest rates should not determine the recruiting success of the cooperative (i.e. the members per customer ratio). However, interest rates play a major role when choosing between different banking groups, so competitive interest rates should be a major determinant of the relative attractiveness of cooperative banks within an area (i.e. the member per population ratio).

As noted earlier, the amount of bonuses depends linearly on the financial involvement of the member (above a certain threshold), whereas the cost of becoming a member (and thus getting access to bonuses) is fixed at the level of the membership fee. Therefore, when an individual is already a customer, we expect that the likelihood of that individual becoming a member depends on her financial involvement. In sum, based on individualist economic motivations, we hypothesize that i) Loan interest rates are negatively related to the relative attractiveness of the cooperative; ii) Deposit interest rates are positively related to the relative attractiveness of the cooperative; iii) The average level of financial involvement of individuals is positively related to the recruiting success of the cooperative.

Individuals also have to bear certain costs by joining a cooperative. The most obvious one is paying the membership fee. There is also an opportunity cost of joining the cooperative. Becoming a cooperative member usually means that the person commits to use the cooperative bank for financial services, and thus foregoes the option to purchase these services from elsewhere.[13] This opportunity cost depends on availability of alternative providers, and is low in the case of low local competition.

There is also a collectivistic economic motivation related to competition. Under conditions of imperfect competition, consumer cooperatives set prices at a lower level than do comparable profit-maximizing entities, because cooperatives aim to maximize consumer surplus rather than profits (Hart and Moore 1996). This implies that cooperatives have a competitive advantage relative to profit-maximizing firms especially

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12   Other studies make similar and sometimes bigger compromises. Thus in their seminal paper to test the determinants of *individual* membership in trade unions, Ashenfelter and Pencavel (1969) use data at a highly aggregative level as their empirical work investigates changes in *overall* union membership.

13   There are no formal regulations restricting the ability of members of co-operative banks to use other financial institutions. However the reasons to concentrate the use of services in one bank are convenience, financial incentives (higher bonuses), and psychological commitment to loyalty towards jointly-owned bank.

in areas that are difficult to serve profitably due to some institutional features of the market (e.g. low population density and low purchasing power). If cooperatives were closed in such areas, profit-maximizing banks would either be unwilling to enter that market or they would use pricing strategies to exploit their monopoly power. Thus, the people who are served by cooperatives have a strong mutual interest to ensure that their cooperative will continue to operate in and serve that area. Ensuring continuance may include collectivistic actions such as approval of retaining profits as collective capital (e.g. Tuominen et al. 2013) and ensuring that prospective members perceive that a higher number of members in a cooperative enhances the legitimacy and resilience of the organizational form.

This brings us to two hypotheses on how privately born costs (both direct and opportunity costs) influence membership rates, namely: i) The amount of membership fee is negatively related to both the relative attractiveness and the recruiting success of the cooperative; ii): The intensity of competition is negatively related to the relative attractiveness of the cooperative and the recruiting success of the cooperative.

In considering the purely non-economic (associational) motives for cooperative membership, we note that in the analysis of what makes people want to participate in mass movements, it has been argued that participation rates vary inversely with the size of the population that can be potentially mobilized (e.g. Gavious and Mizrahi, 1999).[14] In small groups the contribution of each individual member is socially more visible and traceable than in large groups, and hence contributors are more likely to get individualistic social rewards from their actions. Further, the likelihood that the member is pivotal in decision-making situations (such as majority voting) increases when the collective is smaller. In other words, when the cooperative society is smaller, a rational potential member is more likely to join the society since the expectation of social rewards such as an enhanced social status is stronger. The flip side of this argument is that shirkers are also more likely to be detected when the group is smaller. If there is a perceived social obligation to participate in certain types of organizations, this pressure is felt more acutely when the size of the social entity is smaller.

Byrne et al. (2015) have also stressed the role of proximity (both spatial and non-spatial) as influencing the value preferences of members in financial cooperatives. Increased distance from the cooperative, either spatial, relational or cognitive, makes it less likely that the voice of the member is being heard. While membership size is not a perfect measure of proximity, we would at least expect it to be strongly (and negatively) correlated. Also Jussila et al. (2012b) suggest that spatial proximity is related to member affective commitment in cooperatives and member retention.

For all these reasons, we predict that membership rates vary negatively with group size, which can be argued to be a proxy for influence opportunities, feeling of proximity and potential rewards for participation or non-participation.[15] We present

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14   Credit cooperatives at their inception in the late 19th and early 20th century could certainly have been regarded as a mass movement, but it is unclear whether at the current stage of their life-cycle they can be regarded as such (see Fonteyne 2007). However, because they retain a democratic decision-making structure, the framework of Gavious and Mizrahi (1999) remains valid.
15   Emmons and Schmid (1999) employ similar arguments when they posit a negative relationship between the size of a credit union and its participation rates (defined as the number of

separate hypotheses for the two dependent variables: i) The size of population residing in the operative area of the bank is negatively related to the relative attractiveness of the cooperative; ii) The number of customers is negatively related to the recruiting success of the cooperative.

Although there may be good reasons to believe that customer participation is negatively related to the size of cooperative, small size can also be a liability. The main challenges come from technological change and regulation. Advances in information technology and the widespread adoption of automatized credit ratings have reduced the importance of soft information in the lending process (Peterson and Rajan 2002). Since cooperative banks have emphasized soft information in their lending strategies, the reduced importance of distance would be expected to erode their competitive advantages and perhaps force them to reconsider their operational logic. Similarly, the rise of internet banking has drastically reduced the face-to-face exchange between bank employees and clients, posing challenges to banks that rely on physical proximity between the bank and its clients, as in cooperatives or community banks (DeYoung et al. 2004). Regarding regulatory developments, in the wake of the financial crisis of 2008, regulatory compliance costs have increased significantly. Because compliance costs include a large fixed component, the overall increase in these costs is disproportionately falling on smaller banks (Ferri and Kalmi 2014).

While these issues have obvious implications for the optimal size of cooperative banks and mergers, they may also influence how cooperatives try to attract members. Over time members visit branches less frequently and take care of more banking transactions through the internet. Consequently, information exchanges become more anonymous and traditional close relationships between the client and the bank are severed, and it becomes increasingly difficult for the bank to maintain high levels of participation through social incentives.[16] The banks may try to remedy this situation by enhancing monetary incentives for individuals. The above-mentioned increase of customer remuneration rates in cooperative banks may be seen as a consequence of this logic.

Unfortunately it is not possible to observe the impact of differential rates in customer remuneration, because there is no cross-sectional variation in these rates (all banks within the group apply the same rates). However, we can evaluate whether there is a relationship between bank characteristics and the response to changed incentives. In particular, we hypothesize that the effect of the increase in extrinsic incentives is most pronounced for larger banks, which are less able than smaller banks to rely on social incentives to increase the membership ratio.

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members relative to the potential members). They use a Hotelling spatial model and argue that in larger credit unions the divergence of preferences is larger, and therefore the expected distance between individual members' preferences and average preferences are increased. In more informal discussion, they note other arguments that also predict a negative relationship between the membership rate and the size of the potential membership pool, such as the greater affinity members may feel towards each other in smaller organizations, and greater decision-making possibilities.

16   This effect may be balanced out if managers are skillful in using new tools made available by technological development to interact with clients and members.

5   Empirical strategy, data, measures of key variables and descriptive statistics

To provide evidence on our hypotheses concerning the determinants of cooperative membership, our empirical strategy proceeds in two stages. First we provide simple descriptive statistics on what has happened to cooperative membership in banks in Finland as the attractiveness of monetary gains has increased. Second, for both dependent variables, we use our panel data to estimate two sets of regression models—a pooled OLS model and then a model based on differences in the membership rate. While we will elaborate on our approach throughout this section, we continue by first describing the data, then turn to consider several issues surrounding measurement of key variables and implementation of the empirical strategy before finally reporting descriptive statistics.

In our empirical analysis, we combine data from two sources. All bank-level data (membership, financial involvement, number of customers, etc.) come directly from the OP Group. Data concerning demographic information are from Statistics Finland and are matched by using information on the geographic area where cooperative banks are active.

The information we have received from the OP Group constitutes a balanced panel and contains a rich set of variables. However, one problem with that data is that, in the case of mergers, there are no data on merged banks from the time before the merger. Instead, the data for the two banks involved in the merger are combined to create a pro forma–statement for the entity that emerged after the merger.[17] Since financial data before mergers do not really refer to actually existing banks at that time we do not use data for these 'pre-merger' banks in the estimations. However, because banks emerging after the mergers may also be special in many respects, we also exclude data for these banks after the mergers. This means we lose 16 observations from the original 218 for the population of OP banks.

As the above discussion indicates, we use two different *dependent variables* in our analysis. The *relative attractiveness of the cooperative* is operationalized as membership relative to the general population in the area and is similar to the measure of credit union members relative to the eligible individuals, defined by common bond, as used by Emmons and Schmid (1999). In our case, we have to stretch the definition of eligible members somewhat. Since most members in Finnish cooperative banks reside in the area where the bank is located, we use the number of people living in the municipalities where the bank has branches as the pool of eligible individuals. However, there is no formal requirement that customers *must* reside in the area, and therefore our denominator may not be accurate, but it is not possible to determine the direction of the bias.[18] Moreover, organizations can be members as well, which means that the numerator may contain some observations that logically cannot be in the denominator. This creates an upward bias in the measure of the relative attractiveness of the cooperative.

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17   Banks in the OP Group cannot merge outside the group; thus, all mergers happen inside the group.
18   In practice, it is not uncommon that people who live in one area in their youth remain members and customers of that co-operative bank even after they move away from that area. This is made possible by the network structure of co-operative banks, where customers make their transactions in branches of other co-operative banks in the same network.

Table 1 – Membership rates and membership dynamics

Year	Relative attractiveness (Member / Population, %)	Recruitment success (Members / Customers, %)	Annual growth in membership, %
2001	35.95	34.42	
2002	38.21	36.30	5.64
2003	39.28	37.02	2.60
2004	40.58	37.81	2.98
2005	41.83	38.64	2.67
2006	43.16	39.41	2.75
2007	44.68	40.23	3.13
2008	46.42	41.10	3.54
2009	47.97	41.83	2.87

Source: OP Group, authors' calculations.

Another problem is that there are a few cooperatives that operate only in some parts of a municipality and, if this is a large municipality, then the calculated membership ratio may substantially underestimate the 'true' membership ratio. Such situations occur mainly after mergers between a small municipality and a larger city. Since the municipality is the smallest area for which we have population data, the only way to get around this type of measurement error is to discard data for observations for which we know that this is a pronounced problem. This leads to our dropping an additional 14 banks from further analysis. In addition, there are two banks where the member-to-population rate is extraordinarily high (well in excess of 100%); we drop these two observations as well. After discarding these 16 observations, the final sample used in the analysis is a balanced panel of 186 observations per year (1,674 bank-year observations).

The other dependent variable, the *recruiting success of the cooperative*, is calculated by the ratio of members to customers. In their work on French worker cooperatives Estrin and Jones (1995) use a similar measure, the number of members relative to the total number of workers. In those cooperatives the pool of eligible members is easy to observe. But for financial cooperatives there may be more measurement error since there may be customers who have an account at the co-op bank but their main account elsewhere.[19]

In Table 1 we provide summary statistics on the evolution of these two membership rates. Atat the starting point in 2001, the relative attractiveness (member to population – rate) is higher than recruitment success (member to customer – rate) by around 1.5 percentage points (35.95% vs. 34.42%). At first glance this is rather counter-intuitive, because normally one would expect the number of inhabitants to be greater than the number of customers in the OP-Group, and therefore one would expect the former ratio to be smaller than the latter. However, in many smaller municipalities the number of customers is higher than the number of persons living in the municipality: this is true for approximately 50% of the banks in the sample. Moreover, there is a strong negative correlation between the customer / population – ratio and population size (-0.46). These two factors together explain the puzzling finding.

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19   However, this kind of measurement error may not be that serious in Finland where people typically have accounts in only one or two banks. This differs from the USA where the norm is to have multiple banking relationships.

Moreover, the member per population - rate is increasing much faster than the member per customer -rate. In 2009, the former is already 47.97%, while the latter is 41.83%. This can be explained by the fact the number of customers in the OP Group increases much faster than population in Finland, where, especially in smaller rural communities, population change is often negative.

One set of *independent variables* are measures of economic incentives. These include loan interest rates and deposit interest rates that are measured as bank-level averages of all loans (or deposits) given to the public, and they are our main variables in regressions where we explain the relative attractiveness of the cooperative.[20] In regressions where the regressand is members per customer, our main variables are the stock of loans relative to the number of customers and the stock of deposits relative to the number of customers, both reported in thousands of euros. Some sources of customer remuneration do not appear in bank balance sheets, namely holdings in mutual funds or insurance. However, since these generate cash flow to the banks in the form of fees, we can use fee income per customer as a proxy for these types of investments. The last three variables are entered in a linear form, because bonuses also depend on them linearly (above the threshold of 5000 euros).[21,22]

To control for the costs of membership, we include the main cost of membership, the membership fee. This is paid when entering the cooperative and returned upon departure at the original nominal value. However, a practical problem with this variable is the low degree of variation. Initially 76% of the observations in the sample set the fee around 100 euro and, over time, the variation became more condensed and by 2009 89% of banks have the fee around 100 euro.

We measure competition intensity as the ratio of the number of branches of competing banks per 10,000 inhabitants within the area in which the bank operates.[23] Branches of other cooperative banks are included as competitor banks, as these banks are also essentially competing for the same customers.

Turning to measures designed to capture *associational benefits* of co-op membership, the size of potential membership is calculated in two different ways. One is the log of population in the area in which the bank is operating. The other measure is the log of customers. These measures correspond to the denominators in the two dependent

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20   While we would have preferred to use measures of differentials in interest rates compared to competitors, such data unfortunately are not available.

21   However the results remain essentially unchanged if a log transformed variable is used instead.

22   As mentioned before, equity investments in excess of basic equity is another source from which customers may receive monetary compensation. Unfortunately, this information is available only starting from 2006. Because this variable is never significant (perhaps because of endogeneity problems) and it does not affect coefficients of other variables to any great degree, we prefer to exclude this variable and thus retain significantly more observations in the empirical analysis than otherwise.

23   The increase in internet banking has made it possible for consumers to enjoy banking services even when there is no branch presence. However, as DeYoung et al. (2004) argue, many customers view the services provided in branches complementary to those provided through the web, and they argue that community banks are especially able to benefit from this complementarity. Because branches and internet banking are arguably not perfect substitutes, it seems reasonable to view the presence of competitors' branches as a measure of bank competition.

variables. Logarithmic transformations are used because they result in a much better fit with the data than do linear measures.

Additionally, we include two sets of control variables, one to control for certain bank characteristics and another for the environment in which the bank operates. Among the former group one measure is the density of branch network in the area per 1,000 inhabitants. Closer proximity of branches might attract higher membership rates. Because the distribution of this variable is very skewed, we enter it in logarithmic form. The second measure is profitability. We use a measure of the return on assets (ROA).[24] As discussed earlier, while the returns to members do not directly depend on profitability, nevertheless the supply of membership or demand for membership may be different in profitable cooperatives. We expect this relationship to be positive.

The other set of augmenting variables comprises four additional variables that relate to the demographic background of the population. The proportion of Swedish-speakers in the bank area is one control variable–it captures the impact of cultural differences between the two main ethnic groups in Finland. The expectation is that cooperative traditions are stronger among the Finnish speaking population, so the expected sign of this variable is negative. As economic control variables we include the unemployment rate in the area where a bank operates and controls for home ownership. These are generic control variables to control for area characteristics, and no specific prediction is made about their sign. We also include the percentage of under-aged population in the area. Even though in Finland minors can be members of cooperative banks, the expectation is that this would be less common, because minors (until the age of 15) cannot independently manage their personal finances. Finally, we include a measure for population churning, which is the sum of immigration and emigration rates from the bank area. It is expected that the effect of this on membership rates is negative, because cooperatives as community-based organization may thrive when population is more stable.

Our *empirical strategy* is twofold. First, we estimate membership equations using pooled data for the years 2001–2009. Even though fixed effects estimations are an option to handle unobserved heterogeneity, we chose a pooled OLS estimation strategy in large part because fixed effects techniques require that the independent variables that are of interest vary meaningfully over time. However, many of our explanatory variables are such that they change only slowly over time (e.g. customer base, population, competition) and, therefore, the estimation of coefficients for these variables is problematic. In addition, because our theory is based on the behavior of individuals but the data we observe are bank-level, we are bound to use proxy variables for our theoretical concepts that we cannot observe directly at the individual-level. The measurement problems associated with the use of proxy variables are aggravated in fixed effects estimations. While we view the pooled OLS specification as appropriate, at the same time we recognize that causal interpretation of our findings suffer from potential omitted variables biases.

In the membership equations for the years 2001–2009, we first use the member per population ratio as the dependent variable, and in the second regression the member

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24   In calculating ROA, we make some adjustments that reflect the cooperative nature of these organizations. Bonuses paid to members are included in profits, because these are payments to the owners and should be treated equivalently to dividends in shareholder corporations.

Table 2 – Summary statistics of dependent and independent variables (2001-2009)

Variable	Mean	Standard deviation	25%	75%
Members / population, %	42.01	17.23	28.51	53.83
Members / customers, %	38.53	6.57	34.72	42.97
Membership growth, %	3.27	2.70	1.72	4.35
# inhabitants living in the bank area (in logs)	8.87	1.21	8.02	9.51
Competing branches / 10.000 inhabitants	3.80	3.14	1.89	5.13
Competing branches / 10.000 inhabitants, difference	0.12	1.86	−0.03	0.26
Membership fee (in euros)	96.11	39.04	99.25	99.97
Interest rate of loans, %	4.46	0.92	3.70	5.20
Interest rate of deposits, %	1.44	0.58	0.98	1.80
Loan / customers, 1000 euro	8.11	2.53	6.18	9.85
Deposit / customers, 1000 euro	8.25	1.73	6.95	9.43
Fee income / customers, euro	67.24	17.22	55.23	78.81
Loan / customers, 1000 euro, difference	0.65	0.42	0.41	0.90
Deposit / customers, 1000 euro, difference	0.47	0.41	0.26	0.67
Fee income / customers, difference	−0.60	10.23	−5.80	6.19
% Swedish speaking	4.51	16.35	0.08	0.38
% unemployed	11.90	4.44	8.76	14.43
% homeowners	65.56	5.63	62.10	68.96
% underaged	21.17	3.31	18.99	22.91
Own branches / 10.000 inhabitants (in logs)	0.97	0.84	0.45	1.54
Own branches / 10.000 inhabitants (in logs), difference	−0.01	0.13	−0.00	0.01
ROA	1.64	0.53	1.29	1.98
Population churning, %	10.06	4.48	8.10	11.12

Note: Number of observations is either 1674 (for levels) or 1488 (for differences).

per customer ratio. As explained earlier, the measures of economic incentives and group size are somewhat different in the two equations.

Second, we estimate an equation where the dependent variable is membership growth, measured by the first difference of log of membership. As explanatory variables, we use a mixture of lagged variables and differences. The choice between the two depends on our judgement of whether we expect the change in membership to be driven by the level of the explanatory variable or its change. Additionally, we include a dummy variable that receives the value 1 when the bank is operating in an area with a large population (in the first quartile by population size) *and* the observation is from the years 2007–2009 when high extrinsic incentives applied, and 0 otherwise.

In Table 2 we report *descriptive statistics* – means, standard deviations, and the first and the third quartile of dependent and independent variables – where measures have been calculated for the 186 banks used in the regression analysis.

6   Empirical findings

Regression results are presented in Table 3. In the first specification, we present the results where members per population-ratio (relative attractiveness) is the dependent variable. All models include year dummies. Standard errors are cluster and heteroscedasticity-robust.

Table 3 – Determinants of membership incidence (2001-2009)

	Membership / population	Membership / customers
Group size		
# inhabitants in bank area (in logs)	−6.70***	
	(0.94)	
# bank customers (in logs)		−0.81
		(0.64)
Extrinsic motives		
Interest rate of loans, %	−6.50***	
	(1.88)	
Interest rate of deposits, %	12.06**	
	(3.81)	
Loans / # customers		0.42
		(0.30)
Deposit / # customers		0.98**
		(0.37)
Customer fees / # customers		0.10***
		(0.02)
Costs		
Competition: Competing branches / 10.000 inhabitants	−0.70***	0.01
	(0.25)	(0.10)
Membership fee	−0.01	−0.01
	(0.01)	(0.001)
Control variables		
% Swedish speaking	−0.17***	−0.14***
	(0.06)	(0.03)
% unemployed	0.73***	0.32***
	(0.20)	(0.10)
% home ownership	−0.27	−0.15*
	(0.17)	(0.08)
% underaged	−0.18	0.03
	(0.27)	(0.13)
Own branches / population (in logs)	7.14***	−0.54
	(1.34)	(0.68)
ROA	3.34**	0.26
	(1.33)	(0.65)
Churning, %	0.10	0.08
	(0.11)	(0.08)
Year Dummies	YES	YES
R-square	0.66	0.40
F	57.20***	59.53***

Notes: i) Significance level: *** 1%; ** 5%; * 10%.
ii) Number of observations is always 1674.
iii) Standard errors (in parentheses) are heteroscedasticity- and cluster-robust.

First we see that the model explains the variance in member to population rate quite well: the R-square is 66%. The main variables are consistent with our expectations: population size has a significant negative relationship with the relative attractiveness of the cooperative bank, meaning that cooperative banks are more successful in attracting members in smaller localities. An interquartile range increase (a change from the first to the third quartile) in population size would decrease members to population rate by around 10 percentage points, other things equal. However, alongside this there is a mechanism working through economic incentives: cooperative banks are more attractive

when they have lower loan interest rates and higher deposit interest rates (compared to other cooperative banks). An interquartile range decrease in the loan interest rates would also increase members to population rate by around 10 percentage point, as would an interquartile range increase in deposit interest rates. The economic size of these estimated effects is quite large. Further, lower competition in the area (in the form of fewer branches of competitors) also promotes higher membership rates. All of these results are statistically significant at the 1% level. However, the coefficient of the membership fee is not significant although, as expected, it is negative. This may reflect the limited variation of this variable.

A number of control variables are also significant. These include a strong negative relationship between the Swedish-speaking population and membership, a positive relationship between unemployment and cooperative membership, and a strong positive relationship between own branch density and membership, suggesting branching is an effective way to promote membership. There is also a positive relationship between profitability and cooperative membership, suggesting more profitable banks are more attractive to potential members.

Turning to findings for the specification for recruitment success, or who joins as a member when already a customer, we first note that only 40% of the variance is explained by the variables included in the model. Also, there is no support for some key predictions. Thus there is no evidence that the members to customers ratio is higher in smaller banks. Competition and membership fee are not influential predictors of this ratio either. However, again we find evidence that monetary incentives are important for the membership decision: there is a positive relationship between the deposit / customer ratio and the fee / customer ratio, although the loan / customer ratio is found to be statistically insignificant. An interquartile range increase in deposit to customer –ratio would increase member to customers ratio by around 2.5 percentage points, and interquartile range increase in fees to customer ratio leads to a similar increase. Among the control variables again there is a significant negative relationship with the Swedish-speaking population, a positive relationship with unemployment and a negative relationship with home ownership.

We now turn to the results presented in Table 4 on changes in membership. During the years 2001 – 2006 (i.e. when the increased member incentives were not yet in place and the interaction dummy variable is 0) we find that there is no relationship between membership change and the population size of the area in which the bank operates. However, those banks that operate in an area with a larger population do experience higher rates of membership growth during the period of increased economic incentives (2007-2009), and this result is statistically significant at the 5% level. Membership increases in such banks around 0.6 percentage points faster than in other banks. This is evidence for the proposition that when extrinsic incentives are made more prominent, banks that cover a larger population (and hence can rely less on social incentives) do benefit more in terms of membership growth. Again we find evidence that membership responds to economic incentives: it increases in banks with lower loan interest rates, where loans per customers increase, and where fee income per customer increases. However, there are no statistically significant relationships with deposit interest rates or changes in deposits per customers. Membership also increases when competition in the area decreases, but it does not have a statistically significant relationship to the changes in own branches. Finally, there are positive relationships with some of the

Table 4 – Determinants of membership growth (2001-2009)

	Log difference of # members
Population size, in logs (lagged)	0.01
	(0.10)
Large population ∗ high extrinsic incentives	0.58**
	(0.29)
Change in competition (first difference)	−0.06***
	(0.02)
Loan interest rate (lagged)	−1.52***
	(0.38)
Deposit interest rate (lagged)	−0.36
	(0.45)
Loans / # customers (first difference)	1.09***
	(0.20)
Deposits / # customers (first difference)	0.21
	(0.17)
Fee income / # customers (first difference)	0.02*
	(0.01)
% Swedish speakers (lagged)	2.34**
	(0.91)
% unemployed (lagged)	0.01
	(0.03)
% home ownership (lagged)	0.04*
	(0.02)
% underaged	0.08*
	(0.04)
Branches / population, in logs (first difference)	0.28
	(0.36)
ROA (lagged)	0.00
	(0.28)
Membership fee (lagged)	−0.00
	(0.00)
Year dummies	YES
R-square	0.194
F	14.19***

Notes: i) Significance level: *** 1%; ** 5%; * 10%.
ii) Number of observations is always 1488.
iii) Standard errors (in parentheses) are heteroscedasticity- and cluster-robust.

control variables (percent of Swedish speakers, percent of home owners, and percent of underaged).

7   Conclusions and implications

In this paper, we develop a conceptual framework to consider the determinants of membership in financial cooperatives. We propose that this decision can be analyzed within a rational choice framework that acknowledges both economic and associational motivations for joining the cooperative. In other words, an individual choosing to join a cooperative may expect membership to deliver both economic and non-economic rewards and rewards that will accrue to him or her personally as well as to the larger collective that may be the community as a whole or all customers of the cooperative.

In our empirical work for Finnish cooperative banks, we find evidence that supports the view that monetary incentives attract members to cooperatives. As such this conclusion concerning the role of economic incentives is consistent with findings for other organizations such as labor unions (e.g. Ashenfelter and Pencavel (1969) and economic theory, e.g. Akerlof and Kranton (2005)). We find that cooperatives that offer interest rates that are more attractive to members have higher member to population rates, and that cooperatives where customer use the services more intensively have higher member to customers rates. These findings are consistent with the bonus systems of Finnish cooperatives that reward on the basis of financial involvement. Furthermore, when we look at the determinants of *membership growth*, we find that the introduction of increased monetary remuneration rates increased membership growth especially in cooperatives that are located in areas with larger population size. This finding suggests that in fact increased monetary incentives can change the way cooperatives interact with their customers, increasing the economic incentives at the expense of associational ones.

However, there is also empirical support for predictions concerning the importance of non-economic factors such as associational motivations for joining cooperatives. While others have speculated on the potential role of non-economic motivations in driving the membership decision for other organizations such as trade unions (e.g. Flavin and Shufeldt 2016), we believe that ours is one of the first papers to pin down the importance of this channel for any organization. Associational motivations are found to be most apparent for group size: cooperatives operating in smaller localities have considerably higher member per population ratios, even though member per customer rates are not (significantly) higher in smaller banks. We also find that member per population ratios are negatively related to competition, as expected, but this finding does not apply to member per customer ratio.

Our findings have several implications. Most noticeable are findings concerning the optimal group size for cooperatives. While the existence of an alleged trade-off between democracy and scale has a long history in cooperative literature, Jones and Kalmi (2012) provide evidence that the problem is real but not inexorable. Additional evidence on this point is provided by our finding that higher proximity to customers promotes membership in cooperatives. It also suggests that the argument that there may be a trade-off in terms of monetary rewards and participation in cooperatives does not always apply. Indeed these findings relate to the context where membership rates in Finnish cooperatives have been significantly increasing in a ten year period. The 2000s were also a successful decade for Finnish financial cooperatives in economic terms. At the same time, our results suggest that the tension between organizational size and monetary benefits may not be entirely solved, but cooperatives have learned to adapt to the new environment.

Another implication of our findings concerns how financial cooperatives should structure their extrinsic rewards; a more general implication concerns the role of incentives in social economy enterprises. The Finnish example shows that the reward structures influence membership levels, and that changes in extrinsic rewards can have a heterogeneous effect on organizations. An interesting implication for future studies, not only of cooperatives but social economy enterprises more generally, is to investigate whether these changes in *customer* rewards have implications for how employees, or top managers, are compensated.

One limitation of our analysis reflects the nature of the data and our inability to analyze cooperatives that had merged. After the period we study here the pace of mergers has considerably increased among Finnish financial cooperatives. This should mean that increased distance to the members may be an even greater concern for Finnish cooperative banks than it was during our period of study. At the same time, the external pressures for cooperatives to merge have been increased considerably, and this has changed the way cooperatives interact with their members. Although increased monetary incentives have clearly been a success in terms of bank market share, cooperatives should perhaps be mindful not to lose the collective spirit based on the small size and a strong common bond. Maybe this can be realized in the digital era through the introduction of new social structures and systems *within* enlarged member collectives.

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