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The optimum size of rotating *qarḍ ḥasan* savings and credit associations

Seyed Kazem Sadr
Shahid Beheshti University, Tehran, Iran

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Abstract

Purpose – Several indigenous credit and savings schemes have been accredited recently in developing countries for the benefit of households and entrepreneurs alike. Famous among them are the Rotating Savings and Credit Associations (ROSCAs) that exist in almost all continents currently. The rapid development of ROSCAs and their varied structures in many countries have been the subject of numerous studies. What has not been thoroughly analysed is the optimum size of these associations and the fact that lending and borrowing is without interest. The aim of this paper is to present a model that would determine the optimum size of ROSCAs and deal with the following issues: how the group size varies with changes in the income level of the members, the demand for the loan, the size of the collected loan and its duration. Further, the question of whether or not lending to the association in return for obtaining larger sums is a violation of the *qarḍ* (loan) contract is dealt with, and several Sharīʿah compatible formulations are provided.

Design/methodology/approach – Economic analysis has been applied to show the optimum size of *Qarḍ Ḥasan* Associations (QHAs), which are the Sharīʿah-compliant equivalent of ROSCAs, and the Sharīʿah rules of the *qarḍ* contract to illustrate the legitimacy of group lending.

Findings – The major findings of this study are determination of the optimum size of QHAs, the factors that affect the size and suggestion of alternative legal forms for group financing.

Research limitations/implications – Inaccessibility to sources of data to test the hypothesis that has been put forth is the main difficulty encountered when conducting research on the subject.

Practical implications – The paper concludes that the development of informal interest-free ROSCAs in both Muslim and non-Muslim countries is an efficient informal microfinance scheme and that it is compatible with Sharīʿah rules.

Originality/value – The optimum size of ROSCAs and QHAs has been presented in this paper.

Keywords Microfinance, ROSCA, QHA, Optimum size, *Qarḍ* contract

Paper type Research paper

Introduction

The relative success of the microfinance industry in providing financial services and saving opportunities to the poor and its proliferation throughout the developing world have promoted the creation and development of Islamic microfinance institutions in many Muslim countries. A number of microfinance schemes that are compatible with Islamic rules

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have been innovated (Obaidullah and Abdul Latif, 2008). They are largely based on institutions such as *zakāh* (almsgiving), *khums* (alternative Sharīʿah financial obligations), *waqf* (endowment) and *qarḍ ḥasan* (QH) (bona fide loan). In light of this revived interest and these efforts, the global Islamic microfinance industry is estimated to have grown at a five-year cumulative average growth rate of 19.7 per cent from 2013 to 2018 (Kustin, 2015). In addition, the Islamic Social Finance Report (2014) indicates that *zakāh* collections have grown steadily over time. They have increased by 32 times over the past 10 years in Indonesia and by 27 times over the past 20 years in Malaysia. Hassan (2014) highlights the role of Islamic microfinance in alleviating poverty in his study of the Andaman Islands in India. He reports that cash *waqf* and *zakāh* funds were distributed to the poor, and microfinance loans were offered to low-income farmers provided that they observe the Islamic rules of environmental preservation and waste avoidance.

Despite recognition of Islamic microfinance as a valuable and novel tool for poverty alleviation, great challenges remain in Muslim communities, where a high portion of global poverty is concentrated. Over half a billion individuals live on under US$2 per day in Indonesia, India, Pakistan, Bangladesh, Egypt and Nigeria, many of whom struggle to access sufficient liquidity and manage their small savings. Moreover, the total financing gap for micro, small and medium enterprises in developing countries is almost US$2.4tn, according to a World Bank-Islamic Development Bank Policy Report (World Bank, 2015). Further, 55-68 per cent of small- and medium-sized enterprises (SMEs) in these countries are either financially underserved or not served at all.

Several indigenous credit and savings schemes have been accredited recently in developing countries for the benefit of households and entrepreneurs alike. Famous among them are the Rotating Savings and Credit Associations (ROSCAs) that exist in almost all continents currently and their Sharīʿah-compliant equivalent, called *Qarḍ Ḥasan* Associations (QHAs), that have been established in many Muslim countries. The rapid development of ROSCAs and their varied structures in many countries have been the subject of numerous studies (Adams, 1978; Besley *et al.*, 1992, 1994; Bouman, 1995; Levenson and Besley, 1996; Calomiris and Rajaraman, 1998; Handa and Kirton, 1999; Kovsted and Lyk-Jensen, 1999; Kimuyu, 1999; Anderson and Baland, 2002; Anderson *et al.*, 2009; Gugerty, 2007; Stefan and Nicolas, 2007; Armendariz de Aghion and Morduch, 2010). What has not been thoroughly analysed, however, is the optimum size of these associations and the factors that affect their efficiency. An optimum economic scale of operation will arguably ensure the efficiency of the association's financial intermediation services and also its stability and resilience.

This paper is composed of three parts. The first part shows that QHAs are universal structures for informal saving and financing services. It also reviews different types of ROSCAs and the motivation for joining them. The second part discusses the optimum size of QHAs and factors that affect it. The final part discusses the compatibility of QHA financial contracts with Sharīʿah standards. The study concludes with recommendations for the development of informal interest-free Savings and Credit Associations in both Muslim and non-Muslim countries.

Qarḍ ḥasan as a universal mode of saving and finance

QH lending and borrowing is not foreign to people's conventions. In fact, it is common in most parts of the world as a group type of financial services that reduces the cost of lending, mobilises savings, facilitates monitoring and deploys community-based enforcement mechanisms.

QHA is formed by a number of volunteers who are closely associated with each other. They are either members of a family or workers in a public or private organisation or are residents of small communities. They decide collectively that each member contributes a fixed amount of cash to the association periodically, so that the collected sum will be distributed among them, one at a time, for a predetermined period. The order of distribution is usually determined by drawing lots. The member who receives the money will be excluded from the lot in future periods until all participants have received the loan. Alternatively, the order may be determined by the priority of some members' demand for the loan. Sometimes, the order of loan distribution is kept the same in the following rotations, particularly in associations that continue over time. It may also be determined anew at each subsequent round. The latter is the practice when some members leave or new ones are added. The length of the period may vary from one week to a few months. Members continue to contribute periodically, but the instalments for loan repayment may or may not be on the same periods (Armendariz de Aghion and Morduch, 2010).

This type of mutual group lending and borrowing is known as ROSCAs in the conventional microfinance literature. It has almost identical structure, management scheme and membership as QHAs. ROSCAs are institutions that mediate funds between participants, where financial resources are transferred to meet lifestyle needs such as consumption, school fees, weddings, durable consumer goods and ensuring survival and improving the quality of life (Bouman, 1995). The interesting practice in ROSCAs is not only contribution to a pot and its random distribution but also the fact that the lending and borrowing operation is free of any interest charge. This feature makes it identical to QHAs and may imply that the QH contract is an intrinsic universal mode of loan exchange. As such, QHAs and ROSCAs furnish platforms for households to save and to finance their durable consumption goods (Besley *et al.*, 1993) and for entrepreneurs to finance SMEs (Bouman, 1995; Khan and Lightfoot, 2013). Because QHAs and ROSCAs are essentially similar structures, they will be mentioned interchangeably from now on, unless otherwise indicated.

As mentioned previously, ROSCAs exist in at least three continents (Africa, Asia and Latin America) and within very different communities (Bouman, 1977). They involve between 50 and 95 per cent of the adult population in several African countries and mobilise about one-half of national savings in Cameroon (Bouman, 1995). The particular characteristics of ROSCAs probably depend on the needs of the population living in these countries. In a survey of households with steady access to microfinance through Bank Rakyat Indonesia, it was found that 40 per cent of them also participate in ROSCAs (Armendariz de Aghion and Morduch, 2010, p. 59). In Ethiopia, 8-10 per cent of GDP in the early 1970s and 20 per cent of all bank deposits in Kerala State of India were ROSCAs participants' deposits (Bouman, 1977). At least half the rural residents in Cameroon, Cote d'Ivoire, Congo, Liberia, Togo and Nigeria participate in ROSCAs (Bouman, 1995). Between 1977 and 1991, researchers found that roughly one-fifth of the Taiwanese population participated in ROSCAs (Levenson and Besley, 1996). Among the 95 ROSCAs called "lotri samilies" in Bangladesh, it was found that 70 per cent of members were residents in the same neighbourhood and the others shared a workplace (Rutherford, 1997).

Being an indigenous informal financial intermediary, ROSCAs have different names in various parts of the world. They are named "hui" in Taipei, "tanda" and "polla" in Mexico and Chile, respectively. They are known as "chit funds" in India, "committee" in Pakistan, "lotri samilies" in Bangladesh, "arisans" in Indonesia, "kuttu" in Malaysia and "kye" in Korea. In African countries, they are called "susu" in Ghana, "ensusu" in Nigeria, "upatu" or "mchezo" in Tanzania, "totines" in rural Cameroon and "chilemba" or "chiperegani" in

Malawi and "iqqub" in Ethiopia (Armendariz de Aghion and Morduch, 2010, pp. 68-69). The form is called "jamʿiyyah" in Persian Gulf countries and "Qarzul Hasaneh" in Iran (Sadr and Torabi, 2015).

ROSCAs have very flexible structures. The size of the group, the amount of the contribution and the rotation period vary in accord with local economic conditions (Bouman, 1995). The number of members in ROSCAs ranges from 5 to 100 and the pots from US$25 to 400 in Bangladesh. About two-thirds of the ROSCAs have daily collections as small as 5 to 25 cents and about one-fourth collect payments daily (Armendariz de Aghion and Morduch, 2010, p. 70). According to Gugerty (2007), in western rural Kenya where people are dependent on small-scale farming, most ROSCAs comprise groups of friends and neighbours. The average pot is about US$25 and is usually disbursed monthly, whereas the average wage is less than $1 a day. The typical ROSCA lasts for one year. The pot is about one-quarter of the average monthly expenditure of a household.

ROSCAs are not only found in areas where formal financial systems are less developed. In fact, their prevalence is also documented in well-developed financial systems with financially literate populations. They have been found among bank employees in Bolivia (Adams and Canavesi de Sahonero, 1978) and Ghana (Bortei-Doku and Aryeetey, 1995). Another study carried out in urban Zimbabwe found 76 per cent of urban market traders participate in ROSCAs and about 77 per cent of these traders also have bank accounts (Chamlee-Wright, 2002). A study in Indonesia shows that 40 per cent of households with steady access to microfinance services provided by Bank Rakyat Indonesia also participate in ROSCAs (Armendariz de Aghion and Morduch, 2010, p. 59). ROSCAs are moreover found in countries such as Taiwan, Malaysia and GCC countries that have well-functioning credit markets and among South Asian communities in Oxford in the UK (Srinivasan, 1995). The prevalence of ROSCAs as an interest-free scheme of finance reinforces the conjecture that QH might be the global efficient and equitable contractual form of lending and borrowing.

ROSCA's structure has not remained fixed and limited to contributing members. In more modified structures, some members may mainly save, whereas some others only borrow. In this new form, the association is called an Accumulating Savings and Credit Association (ASCA) as described by many authors (Bouman, 1995; Rutherford, 2000; Collins *et al.*, 2009; Armendariz de Aghion and Morduch, 2010). The chief advantage of ASCAs is that borrowers are not required to deposit their savings in advance and members who have surplus income can save there, that is, members who save may be different from those who borrow and the fund distribution is based on demand not on drawing lots. "There are ROSCAs and ASCAs with a history of over 20 years, adapting the society's financial technology to such changes as an economic boom, a depression, an inflation [. . .]" (Bouman, 1995).

In this new direction of transformation of ROSCAs into ASCAs, I notice conformity with QHAs and also QH funds (Sadr and Torabi, 2015) where the initiation has been financing consumption and production demands. The characteristics of the QH funds in Iran, Pakistan and Malaysia have been described by some researchers (Sadr and Torabi, 2015; Zada and Saba, 2013; Saad, 2011). The modification of the structure of QHAs from ROSCAs into ASCAs is also observable in the structural change of consumption-type QH (i.e. where the funds are used for consumption purposes) into a business type, which will be described below. This structural development implies that this type of informal group associations is the most efficient organisational form for voluntary interest-free saving and financing activities. Therefore, Islamic microfinance institutions can both learn from the worldwide experience of ROSCAs and ASCAs and share their achievements with them. As such, dealing with the performance of QHAs is beneficial not only to the Islamic but also to the global microfinance industry.

An interesting form of QHA, called Committee, which resembles a kind of ASCA, is formed among businessmen in Pakistan (Khan and Lightfoot, 2013). These committees usually have a small number of members and shorter cycles as compared to those organised by salaried people and housewives. There are, however, varieties of committees in the market with larger and smaller number of members, size of pot and rotation period. If an entrepreneur wants to raise an amount but cannot contribute the agreed instalment, he can join two committees of half that instalment. For example, if an entrepreneur wants to raise Rs 2m but cannot contribute the agreed instalment, he can join two committees of one million each or enter twice in the same committee. He may also put in half of the instalment, whereas the other half can be paid by another member (Khan and Lightfoot, 2013). Thus, businessmen join the committee that suits their business profile.

In these investment QHAs, lots are drawn every 15 days. Members make frequent payments, often daily, weekly or fortnightly. Investment ROSCAs or QHAs have a short cycle length – typically six months because investment into the business can be made two or three times in a year (Khan and Lightfoot, 2013).

Khan and Lightfoot (2013) report that investment committees are markedly different from those organised by salaried employees or housewives, which typically run over one or two years. The longer committee is not favourable for the businessmen because of inflation and the opportunity cost of capital. Interestingly, contribution of gold (coins) is the norm in committees operated by wholesalers and gold sellers to avoid inflation cost.

These committees are organised by well-known businessmen who take the first pot but also manage the association and perform all bookkeeping and accounting jobs. They also cover any shortfall to the pot because of a member's delayed payment. Consequently, organizers exert effort to select creditworthy members and, reciprocally, members seek a committee whose director has management talents and is trustworthy. Committees are observed to last for five years although they are often renewed every six months (Khan and Lightfoot, 2013). Handa and Kirton (1999) note the same role for a director in Jamaican ROSCAs, who initiates the scheme, selects the members, collects contributions and pays into the pot if any member fails to pay.

It is remarkable that these ASCA-type of associations operate the business without any interest charge. In contrast, in some African ASCAs, interest is charged and the first pot is allotted to the member who bids the highest interest rate and the rest of the members who pay lower interest receive the pot later on a random basis (Bouman, 1977). Although the formation of ASCAs shows the flexibility of ROSCAs to adapt to new market conditions and satisfy the business financial demands, the allocation of the pot on the interest bidding method is a drift from the principle of balanced reciprocity and genuine universal ROSCA model.

Alternative motives for joining Rotating Savings and Credit Associations

Besley *et al.* (1993) considered ROSCA as representing an institution for mediating funds between individuals who do not have access to the credit market. These associations transfer funds to meet life cycle needs and to purchase indivisible goods. Like all other microfinance groups, ROSCAs circumvent default problems by social sanctions on defaulting members as well as preventing them from further participation. Ambec and Treich (2007) report that the economic literature has been mostly driven by the durable good hypothesis that is put forth by the former authors. This literature asserts that the main benefit of ROSCAs is to allow an early purchase of a durable good. They further comment that the economic literature has recently complemented the durable good motive by a self-control commitment to save. A number of researchers have argued that at certain economic conditions individuals suffer from lack of self-control and time-inconsistency problems.

Economic environment and social obligations impose impediments for households to adhere to a consumption budget which was originally planned. Ambec and Treich (2007) developed a new analytical model based on this hypothesis and derived verifiable propositions. They showed that ROSCAs mostly attract average-income individuals, as opposed to the very poor or very rich. Members are homogeneous within ROSCAs and the contribution increases with the income of members. Furthermore, they emphasize that these predictions are consistent with findings of many empirical studies.

Aliber (2001) found that the type of occupation has an impact on the frequency of ROSCAs' meetings in his South African sample. There are daily, weekly and monthly meetings. However, those working in the formal sector prefer monthly meetings to coincide with the end-of-the-month pay schedule. Others who are in the private sector and receive their wages on a daily or weekly basis prefer meetings that coincide with their payment date. The above observation indicates that consumers at all income levels have strong motives to save. They may further have the same average propensity to save. The individual's income, profession, duration and size of ROSCAs are all interrelated.

The optimum size of *qarḍ ḥasan* associations

The focus of studies so far has been on the income and saving motivation in ROSCAs. The effect of group size on the efficiency of saving behaviour in these informal financial intermediaries has not been carefully analysed by researchers. One important factor that facilitates access to ROSCAs is the openness of these institutions to new members. A new participant is welcome to the ROSCA if he can add more benefit than burden to the group and enhance the saving formation process; otherwise, he is denied acceptance. Therefore, it is crucial to find out how the members of ROSCAs determine their group size. It is most likely that homogeneous members form the group, but what is not clear is the number of them who do so. Furthermore, how the group size varies with changes in the income level of the members, the size of the pot and its duration remains to be analysed. These are the issues that will be dealt with in the following membership model, and a number of testable hypotheses will be put forth.

Members in QHAs will encounter two opposing benefit and cost streams. Each member will have the privilege of receiving an interest-free loan at some future period, on the one hand, and bear the opportunity cost of waiting for this transfer, on the other hand. As membership in QHA increases, the size of loanable capital increases because of the contribution of new members. On the other hand, the expected waiting time for getting the loan is further prolonged. The marginal benefit (MB) of adding a new member to the QHA remains constant for incumbent members because the new member contributes an a priori fixed membership share. But the marginal cost (MC) increases because the expected opportunity cost of obtaining the loan increases. The addition of new members will increase the number of rotations if the rotation period is fixed or it may necessitate an extension of the rotation period. For example, in a seven-member association the loan may be delivered every week, so that every member will receive the collected loan at most in seven weeks; but, if a member is added, the maximum time that each has to wait is eight weeks or the rotation period may be extended to eight days for each member to receive the loan at least once in eight days. Either way, the maximum waiting time will be extended from 49 to 56 days.

If the aggregate loan is distributed by the intensity of the demand expressed by members, rather than casting lots, a monitoring cost will be added. This new cost will, in turn, increase the MC of obtaining the loan as the size of the group increases. The optimum size is that number of participants at which the MC of joining or leaving the Association for each member is equal to its MB. At this size of membership the net benefit to the association is

maximised if there are no associated external costs or benefits. Thus, there will be no incentive for new members to enter or be allowed entry or an old member to leave the association. This explains the fact that the size of associations remains unchanged over time.

Factors that have impact on the optimum size of *qarḍ ḥasan* associations

Many factors affect the benefit and cost of membership in QHAs. Suppose a member's income increases and he decides to start a new venture. If the initial capital needed for investment is greater than the aggregate loan that is distributed in the association, he would leave the group and seek alternative sources of fund. It is reported in fact that as the income of ROSCA members increases they leave the group (Armendariz de Aghion and Morduch, 2010, p. 71).

If all members demand larger loans, they increase the membership due. The MB curve would shift upward, and the optimum size of the group would increase. New members would be added to the group if they are homogeneous with the incumbents. Thus, the size of the group and that of the individual contribution and the lump-sum distributed are directly related. Alternatively, the rotation period may be prolonged.

In those associations that are formed for a short period but are constantly reconstituted, risky members may join the group because of adverse selection problems. The MC of membership would then increase, and the optimum size of the association would diminish. Consequently, when the adverse selection problem is present, membership will be confined to incumbent safe members and the size of association would diminish. Besley *et al.* (1993) state that individuals insensitive to social sanctions have stronger incentives to bid to obtain the pot early, which may create an adverse selection problem for the group. This explains the formation of associations among family members who trust each other and also in small communities where people have either full knowledge of each other's conduct or can easily acquire it in the community. Further, family ties and social reputation are such important social assets that no member would ever risk losing them. This attribute has been considered as the essential trait of all types of microfinance schemes.

If higher income members have access to a QH fund, they would leave the association and obtain the loan from the fund. Alternatively, they may keep their association and use the smaller loan for short-term consumption and that from the QH fund for long-term business investment. If on the other hand, no source of fund is accessible, either because of distance or lack of collateral or high interest charges, the members keep their association and encourage new entries. Subsequently, the rotating period extends and some members will be required to wait up to a year to receive a loan. Thus, there is a direct relationship between the size of the aggregate loan and the expected rotation cycle.

At the dire level of poverty, individuals can hardly become eligible for membership for the poor have nothing to share. The QHAs are thus formed by individuals who have surpassed the poverty level and not only are able to satisfy their customary consumption expenditures but also, in addition, can save part of their income. Hence, QHAs are not formed at the poverty level or at low levels of family income. The *zakāh* and *waqf* funds are very effective in rescuing poor individuals and supporting them until they become eligible for membership in a QHA (Cizakca, 2000). Mosques, too, play a very important role for promotion of benevolent behaviours among participants. A multitude of motives for alternative forms of giving are offered in Islam. Mosques provide a platform for enunciating them and reminding community members about them. The propensity for donation and QH loan extension increases as the average family income in the community exceeds the level needed to finance a decent livelihood and also as social interaction enhances among members of the community, both in the mosques and in the market place.

Therefore, individuals are not likely to join QHAs at low and at high levels of income; that is, the size of the group has an inverted U-shape relationship with members' income levels. In Taiwan, the likelihood of participation in ROSCAs rises with income level up to a certain limit and then starts to fall. ROSCAs become less important as households income increases and they become rich (Armendariz de Aghion and Morduch, 2010, p. 71).

The model that is presented can also determine the optimum size of investment QHAs and show that it is less than that of the consumption type in Pakistan (Khan and Lightfoot, 2013). Here, the MB of membership is higher because the lump-sum loan received is a multiple of the consumption loan. However, the MC is much higher; first because of the fact that the first allotment goes to the director, and, therefore, the chance of early attainment of the pot is less for any member and the opportunity cost of capital is higher. Second, management, monitoring and late payments by some members comprise additional costs for the group though the particular burdens vary for the director and the other members. Consequently, the net benefit is maximised at a lower number of members, and investment committees are smaller than the consumers' associations. Khan and Lightfoot (2013) report that committees with all different pot sizes, instalment periods and cycle lengths can be found in the market. These committees usually have a small number of members and shorter cycles as compared to the committees organised by salaried people and housewives. There are large and small committees in the market; thus, people who cannot afford to put aside big amounts usually participate in smaller ROSCAs.

The conformity of *qarḍ ḥasan* associations lending with the *qarḍ* contract

The extension of QH is very much praised in the Qurʾān (Farooq, 2011; Sadr, 2014). Interest-free loans are, in fact, an example of this practice. However, QH in the Qurʾān includes any decent value-creating activity in the form of charity, *waqf*, or contribution to enhancement of the poor's income, education, health or lodging. On the other hand, the *qarḍ* contract like other stipulated contracts by the Sharīʿah prescribes a set of privileges and obligations for the contracting parties. Privileges include the guarantee of the principal loaned and the ability to recall it at any time if the borrowing period is not specified beforehand. The creditor is not entitled to any contractually stipulated pecuniary or non-pecuniary benefit other than repayment of the principal. Based on these terms and conditions of the *qarḍ* contract, the question is whether the lending to the association in return for obtaining a larger sum, sooner or later, is a violation of the *qarḍ* contract or not?

Aliero (2014) has argued extensively that the practices of QHAs are perfectly compatible with the Sharīʿah rules because all contractual agreements are permissible unless they violate a rule or precondition. In this respect, he cites cases when collateral is taken and interest is charged. He points out that a QHA requiring a pledge or collateral does not violate canonical rules but that charging interest is not allowed. Although the latter is followed in some conventional ASCAs and microfinance units, it is not practiced in Islamic ASCAs as reported by Khan and Lightfoot (2013) in Pakistan. Aliero (2014) examines thoroughly the compatibility of all QHA practices with Sharīʿah standards but leaves out the contractual basis of distributing the fund among the members in the association. Two issues need to be clarified: first, do members consider the contribution that they make to be a *qarḍ* or do they intend another contractual arrangement? Second, if it is a *qarḍ* contract, does it not violate the terms of it because it is paid by each member on the expectation of receiving a larger lump-sum later?

One interpretation is that each member's contribution to the group is out of good will and a gift. The lump-sum that the group transfers to him is also a gift or prize, without any contractual obligation. Both transfers are made out of benevolence and *taʿāwun* (cooperation). The configuration is thus that of *hibah muʿāwaḍah* (reciprocal gift). Another

formulation is to envisage that all transfers in QHA are carried out on the basis of the *wakālah* (agency) contract. Each member delivers his choice to the group or to a moderator selected by the group and binds himself freely to their or his decisions. Because there is no debt or *qarḍ* relationship, the constraints of the *qarḍ* contract do not apply. Alternatively, it can be presumed that members consider the director of the association to be their attorney and deliver to him the right of distributing the collected funds. The latter will then lend the funds to the members randomly or on any other agreed basis. Thus, the transfer of contributions to the director will be on the basis of *wakālah*, but the distribution of the collected pool to the members will be on the basis of the *qarḍ* contract. In any of the suggested formulations, the violation of *qarḍ* terms and conditions is precluded. In the first and second configurations, the transfer of funds is either on the basis of benevolence and *taʿāwun* or *wakālah*. The *qarḍ* contract is not used and its terms do not apply. In the third formulation, where a combination of both *wakālah* and *qarḍ* contracts are used, the members do not commit any violation because their contributions are made on the basis of *wakālah* and not *qarḍ*. In fact, this third alternative arguably represents the intention and practice of the members of QHAs better than the others. Members freely choose the association, and they either elect the director or know him in advance. Unless they have trust in the director and his management capabilities, they will not join the group. The latter lends the fund to the members through the *qarḍ* contract to benefit from the attributes of this contract, which ensures the security of the loan repayment on time. Thus, the operation of QHAs and the participation of the members are fully compatible with Sharīʿah rules as Aliero (2014) has concluded.

In all the presented formulations, the legitimacy of the QHA practices is secured, but the virtue of reward that is associated with any QH deed is obscured because *wakālah* contracts do not embed this trait. This virtue is captured if the whole operation is carried out on a QH basis. To embrace this end as well as to secure the authenticity of QHA practices, some scholars have argued that a *qarḍ* contract will be invalidated if the access to the lump-sum money is stipulated as a term of the contract. As long as any gain, definite or expected, is not specified and made a condition of the *qarḍ* transaction, the contract is valid and conforms to the rules of the Sharīʿah. In a comprehensive study of juristic opinions on the *qarḍ* contract, Abozaid and Saleem (2014) argue that the financial arrangement in QHAs is different from conditional reciprocal lending. A member offers a loan to another on the condition that other members, not the borrower, provide him a loan. No obligation is imposed on the borrower. Furthermore, the lenders at each rotation do not receive benefit from the borrower rather from other members in the future rotations.

An analogy is the milk distribution associations that were in place in Iranian rural villages in the past. Every household having a cow used to contribute one or two specific measures of milk to a common pot which used to be distributed among contributors in turn for making dairy products. The practice was perceived genuine by *fuqahāʾ* (scholars) at the time for not violating the requirements of valid lending and borrowing. Similarly, lending to a QHA and borrowing from it is not accompanied by any binding condition that will obligate the participating parties to fulfil it. Therefore, the operation is perfectly valid from the Sharīʿah standpoint and may also be accompanied with the spiritual reward of exchanging a QH loan. This new version that considers financial transactions in QHAs to be *qarḍ* and not *wakālah* legitimizes the bidding proposals for obtaining earlier receipt, a practice which is common in some Malaysian QHAs. One member bids to transfer part of the lump-sum loan to the group if he receives it earlier. In a *qarḍ* contract, the borrower will own the principal lent and is free to allocate it to any legitimate use. Therefore, the group that is lent by each member has the right to lend back the principal that it owns to any

individual member. If bidding is considered beforehand as a legitimate practice by the group, then it is not a violation of a promise or of fair distribution. The important requirement is that bidding would not be done on an interest payment.

Conclusion

ROSCA is a universally recognised microfinance scheme. Its indigenous equivalent in Muslim countries is QHA. The practice of interest-free financing in ROSCAs all over the Muslim and non-Muslim world manifests that the QH contract is an efficient and viable mode of finance. QHAs are financial intermediaries which promote rural and urban households' savings and channel them to the purchase of durable consumer goods and to investment projects. By pursuing this function, they constitute an essential part of the financial sector in both developing and developed economies and contribute to a steady process of economic development. Therefore, financial authorities should adopt all measures that facilitate formation of these associations and reduce the risk of their financial services. They also have the potential to become partners with formal financial institutions and provide financial services at very low cost to households in rural and urban areas. Being microfinance vehicles, they embed all the attributes of their conventional counterparts such as screening and monitoring of clients. They are thus capable of alleviating all problems of information asymmetry, both for formal and informal institutions.

One attribute of ROSCAs that ensures their efficient operation is their optimum scale of operation. The addition of a member increases the size of the pot being distributed, but it also extends the expected queuing time for each member to receive the pot. The maximum net benefit of the number of members participating in any ROSCA determines its optimum size. Factors that affect the benefit and cost of membership in the QHAs are the demand for the loan, either for consumption or investment purposes, family or kinship relationship, supply of alternative sources of finance and the period of pot distribution. Individuals are not likely to join QHAs at low and higher levels of income; that is, the size of the group has an inverted U-shape relationship with the member's income level.

Decisions by individuals to join QHAs can also be interpreted by alternative Sharīʿah compatible schemes. The contractual form that seems to preserve both the reward of a QH loan and the terms and requirement of the *qarḍ* contract was presented. As stated, the contract is valid and conforms to the rules of the Sharīʿah if no gain or benefit is specified and made a condition of the *qarḍ* transaction.

The QHAs are viable informal financial intermediaries in all economies regardless of their income levels. It is, therefore, incumbent upon financial authorities to undertake legislative and regulatory measures to support these associations and enhance their development in both rural and urban locations. The spread and persistent development of this form of interest-free financing, both in Muslim and non-Muslim countries, are indications of the robustness of Islamic finance and the role that it can play to foster social welfare and economic growth all over the world.

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About the author

Seyed Kazem Sadr, PhD, is a Retired Professor and served for 31 years at the Shaid Beshti University, Tehran, Iran. He also served at the International Centre for Education in Islamic Finance (INCEIF) in Kuala Lumpur, Malaysia from 2013 to 2016. He has been a Member of the Islamic Banking Drafting Committee at the Finance Ministry, a Member of the Economic Curriculum Programme at the Ministry of Higher Education and also consultant at the Agricultural Bank, all in Iran. He is the Author of books and refereed journal articles on Islamic economics and banking and on agricultural and natural resource economics. He is a Member of the Editorial Board of many national and international journals. He received his PhD from Ohio State University. Seyed Kazem Sadr can be contacted at: kazemsadr@gmail.com

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