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Institutions: A Review of the
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Cooperative Financial Institutions: A Review of the Literature

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Abstract

Financial cooperatives play an important role in the financial systems of many countries around the world. They act as a haven for deposits and are major sources of credit for households and small- and medium-sized firms. A not-for-profit orientation (in many cases) and a focus on maximising benefits to members has ensured the enduring popularity and sustainability of financial cooperatives. This is particularly evident since the global financial crisis when in many cases, financial cooperatives continued to extend credit to members as many profit-orientated commercial banks restricted credit to households and firms. In this paper, we undertake a theme based review of research on cooperative financial institutions. This commences with an overview of the body of work, which establishes the origin and charts the diffusion of cooperative financial institutions. Research evidence is reviewed under a selection of themes, including: network arrangements; business models; relationship banking; FinTech; balancing the interest of members; taxation; performance; mergers, acquisitions and failures; lending and the real economy; the Great Recession; and regulation. The paper concludes with suggestions for further research.

Key words: Business Models, Consolidation, Cooperative Financial Institutions, FinTech, Real Economy, Regulation, Relationship Banking,

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1. Introduction

Cooperative financial institutions comprise a variety of member-owned financial intermediaries variously referred to as credit unions / *caisse populaires*, savings and credit cooperatives, cooperative banks and Shinkin Banks. Credit unions / *caisse populaires* have a strong presence in North America, while cooperative banks are the dominant organisational form in many European countries. The institutional structure, legal and regulatory status, product offerings and business models vary across countries, and especially between advanced and emerging countries (Cuevas and Fischer, 2006; Cuevas and Buchenau, 2018). For example, credit unions / *caisse populaires* are not-for-profit entities, which provide services to members. Shinkin banks are also not-for-profit but restrict loans to members while accepting deposits from non-members. Cooperative banks are for-profit organisations that provide services to both members and non-members. However, unlike shareholder-based commercial banks, cooperative banks do not seek to maximise profits but rather generate profit in order to bolster capital and fund long-term growth.

Four cooperative principles shape the structure of cooperative financial institutions and set them apart from shareholder-based banks. *Self-help*: Cooperatives are member-owned and member-governed financial organisations that aim to achieve pre-determined economic and social objectives. *Identity*: A majority of cooperatives have a membership that is concentrated at a local or regional level, and cater to the financial needs of individual members, community groups and small firms. *Democracy*: Each member has only one vote, irrespective of how many shares held. This reduces the ability of any one member or group of members to impose a controlling influence on the direction of the institution. *Cooperation among cooperatives*: Considered individually, financial cooperatives are often small. However, as they do not typically compete with each other (due to self- or regulatory-imposed limits on geographic spread), they have formed cooperative arrangements that have enabled them avail of scale and scope economies. In Europe, cooperative banks have developed prominent central institutions and formed network alliances. These networks range from loose associations to cohesive groups, and can be simple or complex multi-levelled structures (Bülbül et al., 2013; Fonteyne, 2007).

The above principles confer a number of potential benefits on financial cooperatives. First, saving members and borrowing members as owners of the financial cooperative are inextricably bound to its fortunes. This may help mitigate the conflict (visible in shareholder-based financial institutions) between borrowers (who want as low cost credit as possible) and savers (who want as high a return on savings as possible). Second, as membership is structured around a common identity such as geographic location, information asymmetry (adverse selection) is reduced leading to better loan decisions, as borrowers are less able to under-represent risk. Furthermore, as borrowers have social and business connections through the common identity to other members there may be large informal costs of renegeing on loan repayments thus enabling social capital to be used as 'collateral' in lending and in so doing reduce moral hazard (Guinnane, 2001; Fonteyne and Hardy, 2011). Third, depositors (as owners) are likely to maintain savings in periods of economic uncertainty thus ensuring retail funding stability. Fourth, given that employee remuneration is not linked directly to profits or share option arrangements, this may encourage management to be more circumspect in their behaviours relative to management in shareholder-owned banks (van Rijn et al., 2019).

Arguably, there are also a number of disadvantages to the cooperative structure. First, transfers to reserves from profits is the main, if not only, source of capital accumulation for many cooperative financial institutions.¹ Second, as there is no externally held capital and no tradable ownership rights, cooperative institutions face no (or weak) discipline from the market in corporate ownership and control. Third, the one member, one vote system arguably means that members have insufficient incentive to engage in monitoring as their ability to exercise control is weak and potential rewards are low.² In such circumstances, agency costs may be high and adversely affect efficiency and performance. In particular, management may have greater opportunity to indulge in discretionary expenditures and the pursuit of managerial emoluments (expense preference behaviour).

¹ In certain cases financial cooperatives may have an option of raising capital from their members through issuing subordinated shares that pay interest, but do not carry voting rights, (Birchall, 2013a; 2013b).

² Gorton and Schmid (1999) and Leggett and Strand (2002) provide evidence regarding agency costs and control at financial cooperatives. Goth et al (2012) note a lack of member engagement and lack of board monitoring at financial cooperatives, while Gomez-Biscarri et al (2019) note that credit union members act as a disciplining mechanism by withdrawing deposits from credit unions engaged in risky lending activities. van Rijn et al., (2019) note that salaries and benefits paid to managers are typically lower than those paid by other financial institutions, and this leads credit union managers to pursue less risky strategies than mainstream banks.

A selection of size and market share metrics for cooperative banks are presented in Table 1. This information is for end year 2016 and concentrates upon European countries where cooperative banks originate and currently have significant market share.³ There are 3,135 independent cooperative banks operating through 57,597 branches, with 732,700 employees and aggregate assets of €712.09 billion. Customer reach extends significantly beyond core membership (members to customers across countries averages 38%). Cooperative banks in Austria, Cyprus, Finland, France, Germany, Luxembourg and the Netherlands have a sizeable share of the domestic banking market while in Finland, France, Germany and the Netherlands they are also an important source of funding for small and medium sized enterprises (SMEs).

Information on credit unions is presented in Table 2. The World Council of Credit Unions (WOCCU) estimates that for end year 2016, there were 89,026 credit unions operating in 117 countries across six continents. These credit unions had total assets of \$2,115 billion and a membership of 260.2 million (population penetration of 9.1%). Africa dominates in terms of credit unions numbers (37,607; 42%) but they have only 11.3% of worldwide members, 0.4% of worldwide assets and a population penetration rate within Africa of 9.3%. In contrast, North America has 7% of credit union numbers, but 47.2% of worldwide members and 80.7% of total assets and a population penetration in North America of 51.7%. The credit union movement in Europe has a penetration rate of only 3.1%. In Western European countries (with the exception of Ireland and Great Britain), credit unions have not emerged as a distinct group as their activities are captured by cooperative banks. While in Eastern Europe (with the exception of Poland), credit unions are in a nascent stage of development.

The remainder of this paper provides a theme-based review of research on cooperative financial institutions. This commences with an overview of the body of work, which establishes the origin and charts the diffusion of cooperative financial institutions. Research evidence is examined under a selection of themes. These include: network

³ Cooperative banks also established in a number of countries outside Europe. Japan's banking system comprises a large group of member-based banks consisting of credit associations (Shinkin banks), credit unions (Shinkumi banks), as well as various other mutual banks such as agricultural, fishery cooperatives and labour banks, (Glass et al., 2014a; Uchida and Udell, 2015, 2019). At the end of 2016, there were 264 Shinkin banks, which conduct their business through a network of 7,373 branches serviced by 112,611 employees (of whom 2,211 are directors). They held ¥138.89 trillion (\$1,181 billion @ 1 JPY = 0.0085 USD) in deposits and made ¥68.91 trillion (\$5,857 billion) in loans. The number of Shinkumi banks have fallen steadily over recent years and at the end of 2015, there were 157 such institutions.

arrangements; business models; relationship banking; FinTech; balancing the interest of members; taxation; performance; mergers, acquisitions and failures; lending and the real economy; the Great Recession; and regulation. The paper concludes with a brief summary and suggestions as to where future research may usefully concentrate.

2. Origin and Diffusion

Cooperative financial institutions originated in Germany in the mid-19th Century as philanthropic self-help institutions designed to encourage workers to join resources and accumulate savings. Hermann Schulze-Delitzsch (1808–83), a politician and judge, founded the first urban credit cooperative in 1850. Friedrich Wilhelm Raiffeisen (1818–88), a mayor in Western Rhineland, formed the first rural credit cooperative in 1864. Raiffeisen emphasised Christian principles as the motivation for the establishment while Schulze-Delitzsch was mainly concerned with promoting economic self-sufficiency, (Aschhoff, 1982; Guinnane, 2001, 2002). A principal purpose of early credit cooperatives was to draw outside funds into communities that needed them, not as charitable donations, but as loans to be repaid (Isbister, 1994). The model quickly spread to other countries in Europe. First to Austria, Italy, Switzerland and the Netherlands then west to Belgium, France and Spain and eventually north to Finland and Sweden (Birchall, 2013b; Colvin and McLaughlin, 2014).⁴ Inspiration for cooperative ideals was also found in Great Britain where the Rochdale Society of Equitable Pioneers, a group of 28 workers, came together in 1844 to open their own cooperative store selling food items (Merrett and Walzer, 2004; Walton 2015).⁵ A further example was in New Lanark, Scotland where Robert Owen (1771-1858) and other mill owners agreed to limit their returns on invested capital and to use residual profits that accrued for the benefit of the entire community (Harrison, 1969; Royle, 1998).

At the beginning of the 20th Century, the financial cooperative concept spread from Europe to North America. The first financial cooperative (*caisse populaire*) was

⁴ Credit cooperatives proved less successful in other European countries notably Belgium, Ireland, Spain and Denmark (Colvin and McLaughlin, 2014). In Denmark, for example, rural communities had already succeeded in adapting another form of financial institution, the savings bank, to serve the needs of the small borrowers who in other countries were the main clientele of credit co-operatives (Guinnane and Henriksen, 1998).

⁵ The Rochdale principles include: open, voluntary membership to all; democratic control of the society; a governance structure where each member is entitled to one vote regardless of the number of shares owned; a limited return (if any) on equity capital; and the return to members of the cooperative's surplus in proportion to their patronage.

established in 1900 in Canada (Quebec). Alphonse Desjardins (1854-1921), first a journalist and then a parliamentary reporter, moved by the victimization of the poor by loan sharks established the first *caisse populaire* (people's bank) in 1900 in his home town of Lévis in Quebec. He proceeded to set up a further 150 over the next fifteen years (MacPherson, 1979; Mook et al, 2015). Desjardins helped establish the first US credit cooperative in Manchester, New Hampshire, in 1908. This was based around a Franco-American parish administered by Monsignor Pierre Hevey and it initially served French-speaking immigrants to Manchester from the Maritime Provinces of Canada. (Moody and Fite, 1984; Walter, 2006). The mantle for credit cooperatives in the US was assumed by Pierre Jay (1870-1949), the commissioner of Banks in Massachusetts, and Edward Filene (1860-1937), a Boston entrepreneur and philanthropist. These individuals promoted and were instrumental in the passing of the Massachusetts Credit Union Enabling Act in 1909, the first credit union legislation in the US. A further person of influence in the US was Roy Bergengren (1879-1955) who along with Filene formed the Credit Union National Extension Bureau which lobbied for credit union legislation at both State and Federal level. In 1934, the Federal Credit Union Act was passed. This Act encapsulated much of Bergengren's interpretation of what credit unions are, how they should be structured and how they operate in law. (Bergengren, 1940; Moody and Fite, 1984; Kaushik and Lopez, 1994). During the remainder of the 20th Century, the model continued its spread and now extends to most of the Anglo-Saxon world and beyond (Fonteyne and Hardy, 2011).

3. Network Arrangements

Cooperatives banks in Europe developed prominent central institutions and formed network alliances. The level of integration ranges from the centralisation of common services (such as group representation, strategic advice, and basic support services) to more executive functions (such as risk and liquidity management, management of mutual support, supervision of local banks, and mergers and acquisitions (Ayadi et al, 2010; Karafolas, 2016)). Highly integrated and centralised systems are in Finland, France and the Netherlands. Austrian and German cooperative banks have delegated fewer functions to central organisations, while Italian and Spanish counterparts are almost entirely decentralised (Hackethal, 2004; Fonteyne, 2007; Stefancic, 2010; Bülbül et al., 2013). Desrochers and Fischer (2005) provides cross-country evidence which suggests that

integrated cooperative banking systems reduces both performance volatility and expense preference behaviour at financial cooperatives. The authors conclude that integrated systems are more efficient and economise on bounded rationality.⁶

Network arrangements in credit unions are most commonly characterised by the so-called atomised model. This involves relatively loose integration of member credit unions, which is generally limited to representation, lobbying and public relations (Ayadi, 2019). A notable exception is the credit union movement in Canada where Desjardins caisses populaire operate along the lines of a complex federated model. The individual caisses are independent and autonomously incorporated entities, but operate in a structured, standardised and closely inter-connected environment (McMurtry and Brouard, 2015). The Desjardins federated structure provides significant economies of scale and both industry presence and profile in the marketplace (Levasseur and Rousseau, 2002). In other jurisdictions such as the US, credit unions form Credit Union Services Organisations (CUSOs) which are limited liability companies to facilitate shared services. Some CUSOs involve cooperation among a small number of credit unions, while others involve large numbers of credit unions that enter and exit the CUSO as circumstances change. CUSOs allow credit unions to achieve economies of scale and engage in activities that individual institutions may regard as too costly or risky, or that are prohibited by regulations (Wilcox, 2005). CUSOs are an example of 'structural ambidexterity' in the credit union system (Campbell and Dopico, 2016).⁷

4. Business Models

In the context of financial institutions, the business model can be viewed as how institutions “... *manage their assets (activities) and liabilities (funding) over time to contribute to the financial system and the economy either by managing the risk (in their balance sheet and off-balance sheet) or by accumulating it and transferring it to the system.*” (Ayadi, 2019, p31).

⁶ Rationality is bounded because there are limits to our thinking capacity, available information, and time (Simon, 1982).

⁷ Structural ambidexterity refers to setting up formally separate units (divisions, departments, or teams) within the organization, with some units focusing on 'exploit' tasks and others on 'explore' tasks. Each unit has separate employees, processes, and cultures. An integrated corporate leadership strategy adjusts the allocation of financial, physical, and labour resources across units over time (Campbell and Dopico, 2016, p 11).

The business model of cooperative financial institutions is, and will continue to be shaped by technological advances (FinTech, digitalisation of products and services and online provision). At a structural level, this reduces the need for extensive bricks and mortar branch networks commonly found in the traditional banking industry, but perhaps more importantly it provides alternative opportunities for service provision to members and customers. The low interest rate environment that prevailed following the global financial crisis of 2007-2009 also influences the choice of business model pursued as profits from traditional interest generating activities have been squeezed (Claessens et al., 2017; Meyer, 2018). In the short run, the negative effects on profitability can be moderated by reducing costs and generating more non-interest income. However, in the longer term, capitalisation issues may encourage industry consolidation as institutions merge in the pursuit of scale economies (Bexley, and Houston, 2016; Altavilla et al., 2017). More generally, regulatory, monetary and structural reforms are also factors considered important in driving business model change (Köhler, 2014).

Business model diversity within cooperative financial institutions has been investigated in a selection of countries. Canadian credit unions are found to operate one of three models, two are retail oriented with different levels of diversification (focused retail and diversified retail) and one is investment oriented which includes trading and derivatives (Ayadi, 2019). US credit unions operate one of three business model types, albeit all are retail oriented (Ayadi et al., 2017). Cooperative banks in Europe operate one of five business models. Three of these are characterised as being retail oriented, a fourth wholesale focused and a fifth investment driven (Ayadi et al., 2016). In Japan, Shinkin banks adopt two forms of business model, which concentrate on the issuance of loans funded by deposits (*traditional*) and the investment and management of large investment portfolios (*new*), (Chronopoulos et al., 2020). Business model types differ in terms of risk appetite and profitability. Instability in business models impacts negatively on bank soundness (Ayadi et al., 2018).

5. Relationship Banking

Financial cooperatives are well-placed to acquire specialized local knowledge through the cultivation of relationships between bank staff and the local community. These relationships facilitate the gathering of soft information, which is used to mitigate screening and monitoring costs and more readily provide credit to informationally

opaque borrowers.⁸ Large complex banks are not considered to engage in relationship lending because they are at a competitive disadvantage when information about individual investment projects is innately soft (Boot and Thakor, 2000; Stein, 2002; Boot and Thakor, 2019). Transactional banking, commonly associated with large complex banks, places weight on ‘hard information’, and is consequently more conducive to borrowers with lower informational opacity. Hard information can be collected, quantified and communicated easily.⁹

Neuberger et al. (2008) find localism and cooperative ownership are positively associated with the relational orientation of financial institutions (see also Uzzi, 1999). Angelini et al. (1998) find that lending rates in Italy tend to increase with the duration of a relationship for banks other than cooperative banks. Cooperative bank members also enjoy easier access to credit relative to non-member counterparts. Holmes et al. (2007) find that low-income households with strong ties to a credit union are more likely to receive loans, despite poor credit histories compared to those at a community bank. Uchida et al. (2012) note that in Japan more soft information is produced by loan officers at smaller (Shinkin banks and credit cooperatives) banks. Presbitero and Zazzaro (2011) find that in cases where relationship-lending techniques are already widely used (by credit cooperatives and savings banks); an increase in out-of-market competition drives the mutual banks to cultivate their relationship ties with customers.

6. FinTech

FinTech refers to the interplay between finance and technology. Financial Stability Board (FSB) (2017) describes FinTech as *‘technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services.’* While the interaction between finance and technology has a long history, the current FinTech phase (dating from 2008) has increasingly become defined by who delivers products and services rather than the products and services being delivered (Arner et al., 2017). This latest phase is about the use of technology by new

⁸ Soft information is difficult to interpret, verify, and transfer. For instance, appraisals of certain forms of collateral, such as real estate, may require expertise of individuals with specialized knowledge of local markets. Soft information is embedded in existing relationships. For instance, a borrower’s standing in the local community may inform creditworthiness (Berger and Udell, 2002; Berger and Black, 2019).

⁹ Bartoli et al. (2013) note that relationship and transaction lending are complementary. Consequently, hard and soft information should be used together.

entrants to provide non-intermediated financial services directly to customers, (Consumers International, 2017). The largest number of these new FinTech providers are in the payments, clearing and settlement sectors (mobile wallets, peer to peer transfers and digital currencies) followed by credit, deposit and capital-raising services (crowdfunding, lending marketplaces, credit scoring, mobile banks) (Bank for International Settlements, 2018; Frame et al., 2019; Frost et al., 2019; Stulz, 2019; Thakor, 2019).¹⁰

There are a number of implications of FinTech for cooperative financial institutions. First, several FinTech companies have now succeeded in successfully scaling a relationship banking technology which going forward may erode the relationship and soft information capture advantage of small scale localized financial cooperatives (Lin et al., 2013; Jaksic and Marinc, 2018). There is evidence in the US that 'Peer 2 Peer' lending activities have penetrated areas that are underserved by traditional banks (assets greater than \$50bn) such as in highly concentrated markets and areas that have fewer bank branches per capita (Jagtiani and Lemieux, 2018). Secondly, many large commercial banks have taken a more active role in fostering technological improvements in transactional lending. Consequently, a number of FinTech lenders have collaborated with large banks to offer white label products.¹¹ In some cases, FinTech lenders have been acquired by or have sold equity stakes to these banks.¹² Although partnerships between FinTech firms and small banks are less common, there is evidence that by using FinTech solutions to process customer and application data, some community banks have been able to restore profitability to some forms of consumer and small business lending after several decades of negative operating margins (Eckblad et al, 2017; Kim and McKillop, 2019).

7. Balancing the Interest of Members

There are a number of models describing how credit unions set interest rates to compensate members (Taylor, 1971a; Flannery, 1974; Smith et. al., 1981; Smith, 1984). Taylor (1971a) argues that conflict may emerge because saving members want as high a return (dividend) on savings as possible, while borrowing members want as low a loan

¹⁰ It is estimated that there are approximately 12,000 specialized FinTech firms (Thakor, 2019).

¹¹ White label products are sold by institutions with their own branding but the products themselves are manufactured by a third party.

¹² Since 2012, at least \$4.1 billion was invested in FinTech firms by large banks.

rate as possible. Taylor (op. cit.) demonstrates that in a 'neutral credit union' (where neither the interest of savers nor borrowers dominate) total benefits to members are maximised. This 'neutrality' also creates fewer incentives for the credit union to discourage new members (of a particular orientation) joining and therefore helps to maintain the vitality of the institution. A number of papers have empirically tested whether credit unions are borrower-, saver-, or neutral-oriented. Early studies of US credit unions find a majority of credit unions are neutral in their behavior (Flannery, 1974; Smith, 1986; Kohers and Mullis, 1986; Patin and McNeil, 1991). Leggett and Stewart (1999) identify US credit unions on average as saver-oriented, while Goddard and Wilson (2005) find younger US credit unions more likely to be borrower-oriented and older credit unions are likely to be saver-oriented. Bressan et al. (2013), in an analysis of Brazilian credit unions, conclude that while borrower orientation was the dominating behavior the deviation from neutrality was marginal.

Cooperative banks, unlike credit unions, also have non-member customers, which introduces new complexities in how to balance competing stakeholder interests. Emmons and Schmid (2002) show that both the distribution of member preferences and the amount of non-member business influences cooperative banks' optimal pricing and dividend policies. Catturani and Venkatachalam (2014) demonstrate that cooperative bank interest rate settings should include a premium determined by assessing partial elasticities for each type of customer, non-member (borrowers or depositors) and member (borrowers or depositors).

A further issue in the setting of loan interest rates and saving (dividend) rates relates to the fact that cooperative financial institutions in certain countries may be subject to loan interest rate and saving rate ceilings.¹³ Loan interest rate ceilings can be justified as protecting borrowers by offering access to credit at fair and reasonable interest rates. However, interest rate ceilings may reduce product diversification, competition between institutions. The latter may result in institutions choosing not to lend to some high risk borrowers, many of whom will have limited access to alternative sources of credit (Miller, 2013; Maimbo and Gallegos, 2014; Ferrari et al., 2018; Safavian and Zia, 2018).

¹³ For example, the Irish credit union movement, the most advanced in Europe, is subject to both loan interest rate and dividend rate ceilings (Credit Union Advisory Committee, 2018)

8. Taxation

Not-for-profit financial cooperatives receive a tax exemption on earnings in some countries (Estonia, Ireland, Japan, Mexico, Romania and the US).¹⁴ Australian credit unions were granted tax-exempt status in 1974. However, this was rescinded in 1995. Canadian credit unions have been subject to federal taxation since 1972 but at a much lower rate than other financial institutions. In 2013, the discount was abolished (Ghosh, 2018).

Proponents of the tax exemption argue that credit unions provide subsidised services to members, many of whom are of modest means. The imposition of a tax on earnings would create pressure to eliminate some of these subsidised services (Feinberg and Meade, 2017). Given that credit unions rely on retained earnings to meet their capital obligations, others argue that the preferential tax treatment compensates for the capital accumulation problem (Emmons and Schmid, 1999). Theoretical models used to examine the implication of taxing credit unions suggest that, as closed cooperatives, credit unions are likely to respond to an earnings tax by raising the saving (dividend) rate and reducing the loan interest rate, thereby reducing accounting profits and contributions to reserves (Taylor, 1971b; Cook and D'Antonio, 1984).

In the US where there is a high degree of competition between credit union and banks, the tax exemption of credit unions has come under extensive scrutiny. Joint Committee on Taxation (2017) estimates that the tax exemption in the US results in a \$2.9 billion annual loss of tax revenue. However, Feinberg and Meade (2017) estimate that requiring US credit unions to pay tax on earnings would result in a \$38 billion decline in tax revenues over ten years, due to reduction in credit, lost jobs, and other indirect effects from a shrinking credit union sector. Recently, economists at separate Federal Reserve Banks have asked whether the credit union tax subsidy remains justified, given that recent changes in the structure and regulation of US credit unions has enabled them to compete more directly with commercial banks (DiSalvo and Johnston, 2017; Marshall and Pellerin, 2017).¹⁵ DeYoung et al. (2019) investigate whether the tax exemption is passed through to members in the form of preferential saving and loan rates, or consumed by

¹⁴ The tax-exempt status of US credit unions dates to the Revenue Act of 1916 for state-chartered credit unions and to the Federal Credit Union Act of 1934 for federally chartered credit unions (Tatom, 2005; DeYoung et al., 2019).

¹⁵ Much earlier, Flannery (1974, 1981) argues that for reasons of competitive equality, US credit unions should be taxed the same as other financial organizations.

management in the form of expense preference behaviour. The authors conclude that while some of the tax subsidy is diverted away from credit union members (due to inefficiencies in non-loan investments portfolios and in the form of expense preference behaviour) most of the subsidy is passed to members, with saving members benefitting most.

9. Performance (Efficiency, Profitability and Risk)

In North America, evidence for credit unions suggest the prevalence of economies of scale. Goddard et al. (2002) find that larger US credit unions grew faster than smaller counterparts during the 1990s, implying advantages accruing to size. Wheelock and Wilson (2011) present evidence to suggest that economies of scale are available to credit unions operating across the entire size distribution. Studies for Australia (Brown and O'Connor, 1985; Esho, 2000); Canada (Murray and White, 1983; Kim, 1986); Japan (Glass et al., 2014a); Ireland (Glass et al, 2014b); New Zealand (Sibbald and McAlevey, 2003) and the UK (McKillop et al., 1995) also find evidence of increasing returns to scale.

A segment of the literature has conducted comparative analyses of efficiency across cooperatives, commercial banks and savings banks. For example, Altunbas et al. (2001) find that savings and cooperative banks in Germany are more profit and cost efficient than commercial banks. Girardone et al. (2009) find that cooperative and savings banks operating in EU-15 countries are more cost efficient than their commercial banking counterparts. Mäkinen and Jones (2015) find that in Europe cooperative banks are more efficient (less inefficient) than savings and commercial banks. For the US, Frame et al. (2003) compare the financial performance of US credit unions and US mutual thrift institutions. They find that credit unions incur higher costs than mutual thrifts.

A number of empirical studies have attempted to establish a systematic relationship between ownership form and profitability. For example, Goddard et al. (2004) find little evidence that ownership type matters in explaining profitability differences commercial and cooperative banks in Denmark, France, Germany, Italy, Spain and the UK. In a cross-country study, Fernández, et al. (2004) find that public and mutual banks had higher interest margins but also higher non-interest expenses than shareholder-owned banks. Iannotta et al. (2007) examine the relationship between ownership form and the performance and risk of a sample of large commercial, savings and cooperative banks from 15 European countries. In spite of their lower cost base, cooperative and savings

banks exhibit lower profitability than shareholder-owned banks. Goddard et al. (2013) find savings banks were more profitable than commercial banks in Germany, the Netherlands, Spain and the UK. Cooperative banks were more profitable than commercial banks in Germany, Italy, the Netherlands and Spain.

Financial cooperatives have different risk-taking incentives to commercial banks, since they pursue social and economic development objectives, rather than shareholder value maximization. Given a stable deposit base and business strategies that aim to build up capital for future generations, financial cooperatives may be less fragile than their commercial banking counterparts.¹⁶ However, financial cooperatives are less diversified, and have less sources of capital. Consequently, financial cooperatives are less able to absorb demand-or supply-side shocks to their balance sheets (Fonteyne, 2007).

Results from extant empirical studies appear to suggest that savings banks and financial cooperatives are less risky than their commercial banking counterparts. For example, Iannotta et al. (2007) find that mutual banks in Europe have superior loan quality and lower asset risk than shareholder-owned banks. Using a large sample of commercial, savings and cooperative banks from 29 OECD countries, Hesse and Čihák (2007) find that while cooperative banks are less profitable and capitalized than commercial banks, they enjoy more stable returns. Chiaramonte et al. (2015) find that European cooperative banks are more stable than their commercial banking counterparts during stressed periods. The opposite appears to be true under normal economic conditions. Liu and Wilson (2013) find that when exposed to increasing competition Japanese financial cooperatives become riskier than commercial banking counterparts. In the US, Goddard et al. (2008) present evidence that revenue diversification does not reduce risk or enhance the performance of credit unions. Ely (2014) finds that credit unions with broader field-of-membership are less well capitalised and exhibit greater earnings volatility. For Australia, Esho et al. (2005) find that the increased reliance on fee-income generating activities is associated with increased risk.

¹⁶ Becchetti et al. (2016) provide a detailed comparative cross-country analysis of balance sheet characteristics of cooperative and commercial banks before and after the global financial crisis.

10. Mergers, Acquisitions and Failures

Analysis of credit union mergers have concentrated on the US (Fried et al., 1999; Goddard et al., 2009, 2014; Bauer et al., 2009; Bauer 2010; Wilcox and Dopico, 2011); Australia (Ralston et al., 2001; Worthington, 2004); New Zealand (McAlevey et al., 2010) and the UK (Goth et al., 2006). The majority of these studies conclude that members of target credit unions experience an immediate improvement in product cost, service provision and financial stability after the merger. However, there is limited evidence of enhanced benefits accruing to members of the acquiring credit union unless the credit union had prior experience of mergers. ‘Learning-by-doing’ spreads the overhead cost of successive mergers, and minimizes the loss of focus on managements’ primary objective of serving members.¹⁷ Ralston et al. (2001) suggest that mergers do not generate efficiency gains greater than those achieved by non-merging credit unions through internal growth. McAlevey et al. (2010) conclude that a major driver of mergers is not the usual reason of attempting to increase efficiency, but rather enforced government action. Goth et al. (2006) argue that mergers may have negative consequences for the healthier of the two merging entities, including: a dilution in membership focus; increasing loan arrears; and reduced dividends.

Wilcox (2005) suggests that younger, smaller, and less well-capitalized credit unions are more likely to fail. Negative macroeconomic conditions are a likely contributory factor to failure. Smith and Woodbury (2010) find that credit unions are less exposed to fluctuations in the business cycle. Goddard et al. (2014) find that smaller credit unions, those with a high proportion of assets in liquid form, those with low loans-to-assets ratios and those that are highly capitalized are at greater risk of failure. Dopico and Wilcox (2019) find that during credit union failure rates were far lower than those of banks over the period 1980-2018. Pille and Paradi (2002) develop a failure prediction model to detect weaknesses in credit unions in Canada (Ontario). They find that the equity/asset ratio is a good predictor of failure regardless of estimation approach used.

Analysis of cooperative bank mergers has focused primarily on Europe. Lang and Welzel (1999) consider mergers in German (Bavarian) cooperative banks and concludes that the primary motive is not the improvement of operational efficiency but rather

¹⁷ DeLong and DeYoung (2007) advanced the “learning by observing” hypothesis, which argues that bank mergers in the mid or late 1990s would have been more likely to create value than the mergers in the 1980s because bank managements would have benefited from observing prior mergers.

regulatory pressure. Koetter (2008) considers savings and cooperative bank mergers in Germany and concludes that only one in two mergers prove a success. Coccorese et al. (2017) find that mergers in Italian cooperative banks improve cost efficiency in only five percent of cases. Jones and Kalmi (2012) suggest that network arrangements confer on European cooperative banks many efficiency advantages that may be gained by way of merger and acquisitions. Harada and Kitamura (2016) investigate consolidation in Japanese cooperative banks (Shinkin banks). They find that much of the activity is driven by the regulatory authority's desire for banking stability. Large, but unhealthy and inefficient banks merge with small and inefficient banks in order to survive and benefit from subsidized deposit rates.

Maggiolini and Mistrulli (2005) analyse a sample of recently established cooperative banks in Italy and conclude that the probability of failure is related negatively to the market share of incumbent banks and the absence of other mutual banks. Libertucci and Piersante (2012) find that the capital adequacy of cooperative banks is related to both the time to default and the likelihood of default. Fiordelisi and Mare (2014) find that the state of the economy affects the survival of cooperative banks. Iyer and Puri (2012) analyse the impact that a failure of a cooperative bank in India has on other cooperative banks in the same state. The authors find that the failure triggered runs across other cooperative banks in the same state, and this is mitigated partly by deposit insurance. More important in the mitigation of runs were bank-depositor relationships and social networks.

11. Lending and the Real Economy

In many countries, financial cooperatives via their role in mobilising savings and extending credit play a key role in fostering social capital and local economic development especially given their overriding mission to maximise the welfare of stakeholders that are located in the local community (Lang et al., 2016).¹⁸ Hasan et al. (2014) find that local cooperative banks in Poland lend more to small businesses than large domestic and foreign-owned banks. Ferri et al. (2014, 2015) analyse differences in lending policies across stakeholder and shareholder EU banks to detect possible

¹⁸ Jones and Kalmi (2009), Ostergaard et al. (2015) and Chronopoulos et al. (2020) provide extensive discussions of the inter-relationships between social capital and financial mutual and cooperatives.

variations in bank lending supply responses to changes in monetary policy. Following a monetary policy contraction, stakeholder banks decrease loan supply to a lesser extent than shareholder banks. A detailed analysis of the effect among stakeholder banks reveals that cooperative banks continued to smooth the impact of tighter monetary policy on their lending during the crisis period (2008–2011), whereas savings banks did not.

Meriläinen (2016) finds that both the financial crisis and the sovereign debt crisis caused a negative shock in Western European lending growth. The shock was weakened by stakeholder banks whose lending growth either did not decrease during the two crises or decreased substantially less than that of commercial banks. Migliorelli (2018) notes that cooperative banks lent proportionately more than other banks in Germany and other European countries during the financial crisis. This was not the case for countries in Southern Europe. Ely and Robinson (2009) find that credit unions expand small business lending in geographic areas significantly affected by bank consolidation. Smith and Woodbury (2010) and Smith (2012) suggest that credit unions are better equipped to withstand macroeconomic shocks to balance sheets. While banks tend to contract commercial lending during periods of economic stress, the opposite is true for credit unions. Ramcharan et al. (2016) do, however, note that US credit unions most exposed to the failure of large corporate credit unions (as a consequence of declining investment values) reduced real estate and consumer lending during the global financial crisis.

Evidence suggests that financial cooperatives do play an important role in the welfare of households and the economy more generally. Sfar et al. (2016) find that cooperative banks contribute to regional economic growth in France. Usai and Vannini (2005) find that (in contrast to larger commercial banks) cooperative banks play an important role in promoting regional economic development in Italy, while Minetti et al. (2019) find that cooperative banks play an important role in reducing income inequalities in local Italian provinces.

12. The Great Recession

Evidence presented in the previous section suggests that following financial shocks, financial cooperatives decrease credit supply to a lesser extent than shareholder banks.¹⁹

¹⁹ European cooperative banks are found to be, on average, less profitable in ‘normal’ periods but also more stable due to higher solvency ratios (Hesse and Cihak, 2007; Gutierrez, 2008).

The Great Recession has highlighted further differences between financial cooperatives and commercial banks.

Chatterji et al. (2015) find that US credit unions on average gained market share from banks following the financial crisis. These gains primarily accrued to credit unions that embody traditional identities (such as philanthropic giving) distinct from traditional banks. Smith and Rothbaum (2013) note that financial cooperatives in the US, Canada, the Netherlands, the UK, and Taiwan have increased their deposits and loan portfolios in the midst of the global financial crisis. Stefancic (2016) find that Italian cooperative banks performed better than other Italian banks during the financial crisis. The quality of loans deteriorated less in these banks than in others, while no significant differences were observed in terms of return on average assets and cost efficiency. Henselmann et al. (2016) find that cooperative banks (compared to commercial banks and savings banks) were the most stable during the years surrounding the financial crisis. Walker (2016) shows that credit unions have increased their business lending as a substitute for other lending during the crisis. Rauterkus, et al. (2018) demonstrate that credit union deposits increase in times of economic uncertainty suggesting that they are perceived as a safe haven during an economic crisis. Less positively, Maskara and Neymotin (2019) find that during the financial crisis, credit unions were no more likely than other depository institutions to extend a home equity line of credit in areas experiencing housing price declines or with a high proportion of lower income households. These findings provide an empirical counterpoint to those who have lauded credit unions for providing liquidity during times of crisis.

13. Regulation

The Great Recession triggered by the financial crisis highlighted weaknesses in the regulatory environment. Regulatory reforms, captured by the Basel III Accord, have included revised capital and liquidity requirements, assets and activities restrictions, the introduction of supervisory stress testing arrangements and the identification and closer supervision of systemically important financial institutions.

In most European countries, cooperative banks are subject to Basel III, with some larger cooperative banks (in Germany, France and the Netherlands) classified as

systemically important institutions (EACB, 2016).²⁰ The Basel III Accord does not apply to credit unions, but some national and provincial credit union regulators have chosen to implement particular aspects of the Basel standards or have implemented regulatory changes inspired by Basel principles (WOCCU, 2012). More generally, as financial cooperatives in many countries are small and offer a limited product range, some form of proportionality is often embedded in their regulation either in the form of simplified rules, forms of differentiation or different capital and liquidity requirements norms (McKillop and Quinn, 2017, Coelho et al., 2019). However, it is also observed that a trade-off often exists where adherence to simplified rules may result in the imposition of higher capital and liquidity requirements (Cuevas and Buchenau, 2018, Hohl et al., 2018).

The regulatory aspect that has come under most academic scrutiny is capital requirements. This is particularly so for credit unions which in most countries do not have the option to raise new capital in the form of equity, and so are more likely to manage their capital cautiously over the course of the business cycle. Smith and Woodbury (2010) find that US credit unions are less sensitive to the business cycle than banks and should therefore be subject to lower capital requirements. Pana and Mukherjee (2010) find that higher levels of capital in US credit unions reduce their ability to create liquidity. Goddard et al. (2016) find that capital buffers for US credit unions vary pro-cyclically, and until the financial crisis, credit unions classified as adequately capitalized or below followed a faster adjustment path than well-capitalized credit unions. This pattern is reversed the financial crisis. Hillier (2008) find that capital adequacy regulations on Australian credit unions resulted in the use of accounting window dressing techniques to increase capital adequacy. Brown and Davis (2009) find that Australian credit unions manage their capital positions by setting a target profit rate, which is related positively to asset growth. Hessou and Lai (2017, 2018) find that Canadian credit union capital buffers behave countercyclically and that they hold a capital buffer bigger than the maximum buffer advocated under Basel III. They also note that both the risk-based capital buffer and the leverage buffer are positively related to changes in loans and loan growth, which underscores the importance of the Basel III conservation, and the countercyclical buffer requirements in fostering credit.

²⁰ These and other EACB consultation documents are available at: <http://www.eacb.coop/en/position-papers/banking-regulation.html>

14. Going Forward

The scope of this paper is vast, but is by no means an exhaustive review of literature on financial cooperatives. Financial cooperatives play an important role in the financial systems of many countries around the world. They act as a haven for deposits and are major sources of credit for households and small- and medium-sized firms. A not-for-profit orientation (in many cases) and a focus on maximising benefits to members has ensured the enduring popularity and sustainability of financial cooperatives. This is particularly evident since the global financial crisis when in many cases, financial cooperatives continued to extend credit to members as many profit-orientated commercial banks restricted credit to households and firms.

Indeed, the interconnections between financial institutions and the real economy have become particularly evident since the global financial crises, evidenced by foregone output and deteriorating household and government finances. A raft of new empirical research using quasi-natural experiments and cutting-edge econometric methods has emerged analysing the extent to which banks benefit or hinder the opportunities for households, firms and the wider economy.²¹ However, to date there is (with the exception of one or two isolated papers) paucity of evidence regarding the measurable effects of financial cooperatives on the welfare of members and the wider economy.²² Further research using exogenous shocks and appropriate constructed research designs could usefully examine the role financial cooperatives play: in furthering access to finance and financial education for members; funding entrepreneurial endeavour; and fostering trust and social capital in local communities.

²¹ Berger et al (2020) provide an extensive discussion of recent research evidence on the role of banks in the real economy, while Athey and Imbens (2017) provide an overview and guide to instrumental variables (IV), difference-in-difference (DiD) estimators, and regression discontinuity research designs.

²² We acknowledge that a parallel stream of research on microfinance institutions has provided valuable insights to the role these organisations play in tackling financial education and fostering entrepreneurship. Lensink and Bulte (2019) provide an overview of this literature.

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Table 1: Characteristics of Cooperative Banks by Country

The figure displays characteristics of cooperative banks and national associations for cooperative banks by country in 2016. The data is from the European Association of Cooperative Banks: Key Statistics, December 2016.

<i>European Union Countries</i>	<i>Total assets (€ 100 mil.)</i>	<i># Employees (thou.)</i>	<i># Customers (thou.)</i>	<i># Independent Cooperative Banks</i>	<i># Branches Domestic</i>	<i># Members (thou.)</i>	<i>Domestic Deposit Share (%)</i>	<i>Domestic Loans Share (%)</i>	<i>Mortgage Share (%)</i>	<i>Market Share SMEs (%)</i>
Austria										
Österreichische Raiffeisenbanken	279.6	29.0	3,600	434	1,500	1,700	30.2	28.6	26.0	n.a.
Österreichischer Volksbanken	24.5	4.2	1,180	16	402	68.8	3.5	4.3	7.9	n.a.
Bulgaria (Central Cooperative Bank)	2.5	2.1	1,680	n.a.	306	6.5	5.7	4.3	1.8	n.a.
Cyprus (Cooperative Central Bank)	14.1	2.7	702	18	246	201.0	26.0	22.0	36.0	8.0
Denmark (Nykredit)	133.8	3.7	1,0670	59	43	328.0	5.4	30.8	41.2	n.a.
Finland (OP Cooperative, Financial Group)	101.0	12.2	4,3570	173	442	1,747.0	38.5	35.4	39.4	37.8
France										
Crédit Agricole	1,722.9	138.0	52,0000	39	11,000	9,300.0	24.4	21.4	30.2	29.5
Crédit Mutuel	793.5	81.7	30,700	18	5,247	7,700.0	15.5	17.1	20.1	16.2
BPCE	1,235.2	108.0	31,200	32	8,000	9,000.0	21.5	20.7	26.2	n.a.
Germany (BVR)	1,215.8	181.7	30,000	972	11,787	18,436.0	21.4	21.1	28.5	33.4
Greece (Association of Cooperative Banks of Greece)	2.5	0.9	353	9	112	163.6	1.0	0.8	n.a.	15.0
Hungary (National Federation of Savings Cooperatives)	7.2	8.2	1,573	65	1,491	42.0	10.0	8.0	8.4	11.3
Italy (Federcasse)	217.6	30.5	6,000	335	4,311	1,251.0	7.7	7.2	9.8	n.a.
Lithuania (LCCU Group)	0.4	0.5	6	60	94	143.5	2.0	1.0	1.0	n.a.
Luxembourg (Banque Raiffeissen)	7.5	0.6	115	13	42	27.5	22.0	14.0	14.0	9.0
Netherlands (Rabobank)	662.6	40.0	8,700	103	425	1,927.0	34.0.	n.a.	21.0	43.0
Poland (National Union of Cooperative Banks)	35.8	31.5	n.a.	558	4,602	979.8	9.8	7.2	2.2	12.8
Portugal (Crédito Agrícola)	16.7	4.1	1,400	82	673	400.0	6.8	4.5	3.0	7.5
Romania (Creditcoop)	0.3	2.0	604	41	744	653.7	n.a.	n.a.	n.a.	n.a.
Slovenia (Deželna Banka Slovenije d.d.)	0.9	0.3	121	1	85	0.3	3.1	2.23	n.a.	n.a.
Spain										
Unión Nacional de Cooperativas de Crédito	93.6	12.2	7,150	43	3,300	1,450.4	6.0	4.5	n.a.	n.a.
Banco de Credito Cooperativo (BCC)	39.2	6.0	3,518	20	1,191	1,428.0	2.2	2.6	n.a.	n.a.
United Kingdom (Building Societies Association)	426.3	32.7	23,000	44.	1,551	23,000.0	18.4	n.a	21.5	n.a.

Total	7,121.0	732.7	209,024	3,135	57,597	80,573.0				
Non-European Countries										
Japan (The Norinchukin Bank /	883.0	3.6	n.a.	687	7,805	3.6	10.3	n.a.	n.a.	n.a.
Switzerland (Raiffeisen	189.2	9.3	3,745	270	955	1,876.7	13.2	n.a.	17.4	11.0

Table 2: Characteristics of Credit Unions by Country

The table displays characteristics of credit unions in 2015 by country. The penetration rate is calculated by dividing the total number of reported credit union members by the economically active population age 15–64 years old. Data is from the World Council of Credit Unions (Statistical Data, 2015)

<i>Region (number of countries)</i>	<i># Credit Unions</i>	<i># Members</i>	<i>Savings (US\$ mil.)</i>	<i>Loans (US\$ mil.)</i>	<i>Assets (US\$ mil.)</i>	<i>Reserves (US\$ mil.)</i>	<i>Loans/Assets (%)</i>	<i>Reserves/Assets (%)</i>	<i>Penetration (%)</i>
Africa (25)	21,724	23,248,7740	5,847	6,901	9,158	886	75.4	9.67	8.0
Asia (21)	35,957	50,820,792	116,039	100,793	139,330	10,678	72.3	7.66	8.0
Caribbean (16)	299	2,258,204	5,255	3,500	6,355	641	55.1	9.66	56.0
Europe (14)	2,033	8,386,913	20,194	8,003	22,971	3,121	34.8	13.59	4.0
Latin America (16)	2,391	27,907,558	15,833	26,382	50,272	8,257	52.5	16.42	9.0
North America (2)	6,280	118,460,459	1,237,389	1,010,049	1,459,881	146,688	69.2	10.05	52.0
Oceania (15)	198	4,679,376	65,233	61,709	76,714	4,126	80.4	5.38	15.0
Worldwide (109)	68,882	235,762,076	1,465,792	1,217,338	1,764,682	170,195	68.9	9.64	



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