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DIVERSIFICATION, LIQUIDITY, AND SUPERVISION
FOR SMALL FINANCIAL INSTITUTIONS:
NINETEENTH-CENTURY GERMAN CREDIT COOPERATIVES

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Abstract

Germany's successful nineteenth-century credit cooperatives were by design small, limited their operations to specific geographical areas, and employed few paid staff, most of whom had little business experience. Cooperatives would seem vulnerable to liquidity problems caused by correlated shocks to their member's fortunes. They would also seem vulnerable to fraud and mismanagement, and to have problems convincing the public they were safe places to invest money. The historical record shows, however, that the cooperatives overcame these problems, growing steadily in numbers and assets. The solution had little to do with government regulation. Rather, the cooperatives devised a series of regional banks and auditing associations to which most cooperatives eventually belonged. To obtain the benefits of membership in these organizations a cooperative had to submit to discipline imposed by the auditing association. The importance and vigilance of the Centrals and auditing associations was heightened because of a struggle between cooperatives that left competing "name brands" of credit cooperatives. Through these ties the private organizations devised an effective alternative to government regulation of the credit cooperatives.

KEYWORDS: Rural credit, cooperatives, financial intermediation, auditing

The credit cooperatives introduced in Germany during the 1850s were individually tiny and had as their members poor people with similar economic fortunes. Many were managed by volunteers with little banking or business experience. Yet by World War I there were about 19,000 such cooperatives and together they had issued some 8 percent of all German banking liabilities (See Table 1). In many ways this success is surprising. The cooperatives faced severe forms of liquidity and informational problems encountered by any financial intermediary, and their constitutions exacerbated these problems and introduced others. The cooperatives relied on deposits to fund loans. How did the cooperatives convince the public that deposits were safe from poor or dishonest management? Cooperatives were based in a small area and many members and depositors depended on similar economic activities. Many cooperatives were illiquid, financing long-term loans out of short-term deposits. How could these small institutions convince the public that such illiquidity did not threaten solvency?

Part of the answer to the cooperatives' ability to contend with these problems lies in other features of the individual cooperative's design. More important for some matters, however, were the regional banks ("Centrals") and auditing associations to which most credit cooperatives belonged. This paper explains the role of those regional organizations in providing liquidity and confidence to credit cooperatives. Centrals accepted deposits from and made loans to member cooperatives, permitting each cooperative to be a net lender or net debtor. Centrals also made loans to and borrowed from financial units outside the cooperative system, permitting their member cooperatives to be *collective* net debtors or net lenders. Auditing associations provided specialized auditors who verified the books of member cooperatives, gave advice, and dealt with crises. To belong to a Central a cooperative usually had to belong to its auditing association, but there were some cooperatives that belonged to an auditing association but no Central. There was no legal reason for cooperatives to join Centrals and auditing associations. They did so because the services provided were worth the costs of membership.

This paper argues that this Central/auditing combination provided two related services to cooperatives. First, the Central freed the credit cooperative from trying to match supply and demand for local credit on a short-term or long-term basis. This reduced the dangers of illiquidity and also gave cooperatives with excess deposits safe outlets for investment. Second, Centrals and auditing societies collected and verified information about each cooperative's behavior and condition. This information function helped the cooperative to attract both members and depositors. In return the cooperatives had to submit to a certain amount of control and discipline that they might have preferred to escape. The collection of cooperatives into groups audited by a single organization made it possible to internalize an important reputational externality. The Central/auditing association combination engaged in "the joint production of confidence," just as the New York Clearinghouse system produced and disseminated information on the condition of commercial banks (Gorton and Mullineaux (1987)). Calomiris and Kahn (1990a, 1990b) argue that cooperative arrangements among banks can and have served regulatory functions usually undertaken by governments today. Several aspects of the German cooperative case make it a poor instance upon which to generalize, but this paper suggests that Calomiris and Kahn were right about private regulation in this instance, as well.

Information is a central problem in the organization of any financial intermediary. The institution must have enough information on its debtors to make good loans, and it must convince creditors that it is a sound institution. Individual cooperatives were structured to be able to gather and use information very effectively on a local level. But that structure left them vulnerable to liquidity and other problems, necessitating the cooperative regional organizations (the Central and auditing association) studied here. More specific to the German problem is an unusual degree of competition *between* several branches of the cooperative movement. Cooperative leaders periodically re-initiated bitter internecine feuds that had their origins in ideological differences, in regional chauvinism, and in personal jealousies and ambition. A common feature of these quarrels was the charge that cooperatives following so-and-so's rules were

inherently vulnerable to fraud, or unstable, and thus a dangerous institution to join and a dangerous institution in which to deposit funds. These feuds were public and forced each branch of the cooperative movement to police its own members, lest members of other cooperative branches have fuel for public criticism. The branches of the cooperative movement were, in the public's eye, like brand names: if a cooperative of Brand X encountered difficulties, it cast aspersions on all cooperatives of Brand X. Contemporaries saw this competition as wasteful and vexatious, but through a curious mechanism this competition greatly strengthened the role of the regional organizations.

The paper is organized as follows. Section 1 provides historical and organizational background on the cooperatives in general. This section also discusses the political and legal background to the cooperatives' development. Section 2 details the operation of the Centrals, and section 3 discusses the auditing associations. Section 4 considers alternative institutional forms that could have performed the same functions.

1. Historical and Organizational Background

The mid-nineteenth century was a period of rapid economic change in Germany. Occupational freedom and increasing international competition undercut artisans and small tradespeople. In the towns and cities many found themselves undercut by new technologies and found it difficult to finance the changes that would make them competitive with larger enterprises and industrial methods. In the countryside land reform had created a free but undercapitalized peasantry, and the disastrous harvests of the 1840s ruined many rural people. The agricultural price declines of the 1880s and later left some peasant holdings over-burdened with mortgage debt. In response to these problems several German states had instituted *Sparkassen*, or State-backed savings banks, as well as several types of land banks and other lending institutions. Yet critics claimed that neither these institutions nor Germany's commercial banks

were prepared to offer reasonable loan terms to small urban shopkeepers, artisans, small farmers, and rural laborers.

After the failed revolutions of 1848/9 many German progressives turned to concrete, non-political means to aid the working classes. Two of the first branches of German cooperatives owe their existence to two such self-help efforts. Hermann Schulze-Delitzsch (1808-1883) founded several cooperative associations during the 1840s and 1850s. By 1861 there were 364 Schulze-Delitzsch credit cooperatives with nearly 49,000 members (Herrick and Ingalls (1915, p.267)). Friedrich Raiffeisen (1818-1888) was at first an imitator of Schulze-Delitzsch. Raiffeisen's first credit cooperative was founded in Neuwied (Prussian Rheinland) in 1864. The number of Raiffeisen cooperatives at first grew rapidly, but was later eclipsed by cooperatives affiliated with a group formed by Wilhelm Haas in the 1870s. Credit cooperatives were not the only cooperatives included in this movement. Schulze-Delitzsch's organization included many cooperatives for the purchasing of raw materials, and a few consumer and producer cooperatives. Raiffeisen's credit cooperatives also engaged in purchasing agricultural inputs and marketing agricultural products, and the later and more numerous Haas rural cooperative group included many distinct creamery, purchasing, and marketing cooperatives. But credit cooperatives were the most numerous branch of German cooperation, and in this paper we confine ourselves to credit activities.

Social and political bases of cooperatives

The disputes that grew up between Schulze-Delitzsch and Raiffeisen, and that lasted even after the founders' deaths, had many bases, not the least of which were personal ambition and regional chauvinism. But lurking in the background were important differences in the basic outlook of the two men and those who gathered to aid their movement.¹ We cannot do justice to these differences in a few words,

¹ In his discussion of these controversies Müller (1901, p.92) takes as his epigraph the Frenchman Blondel's comment that such disputes are "easy to understand; in Germany, more than elsewhere, there is a fanaticism of ideas, transmitted from the masters to the disciples, from the founders to the

but to ignore them is to ignore fundamental reasons for later events. Schulze-Delitzsch was one of the great liberal figures of his day. During his long career he not only started and provided vigorous leadership for the cooperative movement, he was a member of several German parliaments and played an important role in debates over the worker's movement in Germany. A lawyer and later member of the Progressive Party, Schulze-Delitzsch consistently took the view that the working classes should not be abandoned to the effects of unrestrained capitalism and should not place their hopes in socialism, whether Lassallian or "scientific." Cooperatives were, in his view, a device to provide not equality but equality of opportunity, to give workers the means to compete with larger industry. Several features of his debates with leaders of the worker's movement foreshadow conflict with Raiffeisen. Whatever his personal, ethical motives, Schulze-Delitzsch was profoundly suspicious of the talk about abstract concepts like "Brotherhood" and "Humanity" then popular among socialist leaders and leaders of worker's organizations, seeing this as at best a diversion from the important aim of furthering the material interests of the lower classes.

Schulze-Delitzsch also disagreed strongly with Lassalle's call for State aid to and support of the workers and working-class organizations such as cooperatives. This denial of a positive role for State aid doubtless had complex roots, perhaps including his personal conflict with the Prussian government that he at first served as lawyer and judge. Several German governments actively harassed the cooperatives during the 1850s and early 1860s. Although the harassment was usually petty — in 1859, for example, the government of Saxony prevented the cooperatives from meeting in Dresden (Finck 1909, p.60) — it reflected and help engender ill-will between governments and cooperative leaders. Whatever the cause, Schulze-Delitzsch stressed the "self-help" (to him, the opposite of "State-help") basis of his cooperatives. Tied to this denial of State help was a firm belief in decentralization. Cooperatives (and other

continuers." There is probably some truth to Müller's suggestion; reading these discussions often leaves one wondering why they were so heated.

organizations) should, so far as possible, be organized and run on a local basis. To the extent there were regional or national organizations these supra-local bodies should be controlled from below. Opposition to centralization had several grounds, not the least of which was Schulze-Delitzsch's belief that cooperatives should be a sort of school for self-government, to help workers learn to manage their own affairs as one step along the way to a strong workers' movement.²

Raiffeisen advanced the cause of cooperatives out of an equal concern with the material conditions of the poor and came to stress cooperatives after, like Schulze-Delitzsch, experimenting with charities and deciding they were ineffectual. But in political and social outlook Raiffeisen differed considerably. Perhaps at the base of their differences was Raiffeisen's strong religious motivation. A Pietist, Raiffeisen insisted that his cooperatives not be allied with any religious denomination.³ This desire to avoid denominational affiliation reflected both his own religious ecumenism and the circumstances in which he started his cooperatives. The Prussian Rheinland was overwhelmingly Catholic; the Protestant Raiffeisen was attempting to minister to a different flock. In addition, the mid-nineteenth century was a period of great tension between the Catholic Church and the Prussian State. Bismarck's *Kulturkampf* (1871-87), which was at some level a naked attempt to unite Germans around the specter of an internal enemy by portraying Catholic institutions in Germany as more loyal to Rome than Berlin, left a lasting legacy of

² This view included an undeniable element of paternalism; while he did not oppose universal (male) suffrage, Schulze-Delitzsch thought most workers required considerable education before being suited to political decisions.

³ Pietism was a spiritual movement or tendency within German Lutheranism. Many of Raiffeisen's admirers were also involved in the Inner Mission, a Pietist social movement that was involved in material assistance to the poor as part of its strategy of combating the anti-religious effects of industrialization. Toward the end of the nineteenth century the Inner Mission became especially concerned with fighting the influence of social democracy in Germany. See Schütz (1959) for an introduction to the Inner Mission. Hennig (1912) reprints part of Raiffeisen's book on cooperatives as a source for the history of the Inner Mission. Some leaders of the Raiffeisen group were also active in the Inner Mission; Sell (1895), is an extended argument to the effect that the Raiffeisen style of credit cooperative is perfectly compatible with the Inner Mission's aims. Müller (1901, p.290) notes that Raiffeisen was so successful in keeping his group free from denominational identification that some thought it was a *Catholic* organization.

suspicion and mistrust. In his own statements and writings, Raiffeisen spoke a great deal of Christian self-help and brotherly love, and was very clear about the exclusion of Jews from his organization.⁴ Some of Schulze-Delitzsch's adherents, if not the man himself, viewed this emphasis on Christianity as irritating self-righteousness.⁵ Raiffeisen was also not opposed to State support for cooperatives. He did not want *State-run* cooperatives of the sort advocated by some socialists, but Raiffeisen was willing to accept grants from the State and his conflicts with the government usually stemmed from battles over control of cooperatives. Finally, Raiffeisen's organization was during his lifetime thoroughly centralized. Cooperatives that belonged to his organization had to follow very specific rules about internal organization, and unlike other branches of the cooperative movement, the Raiffeisen cooperatives were organized into a single, national organization. Biographies of Raiffeisen suggest that he was a strong, even authoritarian figure, and this emphasis on centralization may reflect personality as much as philosophy.⁶

⁴ One can over-simplify this issue of anti-Semitism in the German cooperative movement. A nuanced treatment is beyond the scope of this paper, but a few remarks are in order. The *Landwirtschaftliches Genossenschaftsblatt* (Raiffeisen's publication) ran several anti-Semitic articles during Raiffeisen's lifetime. Whether he authored these articles is unclear, but they could not have been published without his approval (see, for example, "Die Judenfrage," Vol.III (1881), pp.2-4). Because many rural moneylenders were Jewish the issue was bound to come up from time to time. The two studies by the *Verein für Socialpolitik* that touched on rural credit issues both show that to some the credit cooperatives were valuable in part because they served to deprive some Jews of their livelihood. Haas' organization took no position on questions like these. Some Haas cooperatives had Jewish members.

⁵ This irritation shows in an article in the *Blätter für Genossenschaftswesen* in 1901 (No.30, p.297). (This was the main publication of the Schulze-Delitzsch group.) The Raiffeisen organization in Thuringia had earlier published an article criticizing Schulze-Delitzsch cooperatives on various grounds. The *Blätter* wondered why an organization founded on Christian principles would spend so much time attacking other people. It also claimed that the Raiffeisen association disavowed any troubled cooperative to avoid scandal: "They deny an unlucky brother three times before the cock crows!"

⁶ Aldenhoff (1984), an admirable biography, is the source of most discussion of Schulze-Delitzsch's thought here. Sheehan (1978) is the standard work on German liberalism more generally. Most biographies of Raiffeisen were written by members of his circle or as part of modern *Festschriften* and have a hagiographic quality. Feineisen (1956) seems to be the only biography

A third group of cooperatives started last but became the largest. Wilhelm Haas (1839-1913) pursued a dual career as a leader in agricultural organizations and a bureaucrat and legislator for his native Hesse/Darmstadt. Haas' first involvement with the cooperative movement took the form of working with Raiffeisen and his circle. In 1872 he was made the head of a new organization of Hessian consumer cooperatives, and in 1874 was a leader in the short-lived effort to form a Central for Hesse. This Central was formed in cooperation with Raiffeisen. Creation of a separate organization for credit cooperatives in southern and western Germany in 1879 marked a break with Raiffeisen. In 1883 this organization was transformed into an all-German group.⁷ The Reichsverband quickly grew into the largest group of credit cooperatives in Germany. At the outbreak of World War I the Schulze-Delitzsch credit cooperatives numbered some 945 credit cooperatives with 620 thousand members, the Raiffeisen, 4400 cooperatives with 485 thousand members, and those affiliated with the Haas group, 11,165 cooperatives with over one million members.⁸

Haas's group grew so large in part because it was much more decentralized than Raiffeisen's and permitted more diversity among its membership in ways detailed below. Two aspects of Haas' general outlook were also important. Like Raiffeisen's cooperatives, many Haas cooperatives were led in part by priests and ministers. Haas, like Raiffeisen, tried hard to keep his organization free of party-political and denominational identification. Unlike Raiffeisen, Haas kept his religious feelings to himself, and this approach evidently appealed to many uncomfortable with Raiffeisen's piety. The regional origins of Haas'

devoted to Haas and shares that quality. Faust (1977), the standard history of the cooperative movement, pays little attention to the social and political origins of cooperative thought and conflict among cooperative leaders.

⁷ This organization changed its name twice between its foundation and World War I. Throughout we refer to it by its final name, the *Reichsverband*.

⁸ Wygodzinski (1917, p.478), from the yearbooks of the several associations. A fourth group of urban cooperatives outside the Schulze-Delitzsch association (*Hauptverband deutscher gewerblicher Genossenschaften*) had 440 cooperatives with 120 thousand members.

group also say something about its popularity. Raiffeisen was a Prussian, and his cooperatives had their regional basis and origins in the Prussian Rheinland. Cooperative leaders in other Prussian regions (such as Münster) and in other German regions with a strong sense of non-Prussian identity (such as Bavaria, the Saarland, and Baden) were unwilling to surrender local control of their cooperatives to Raiffeisen. The looser grouping of the Haas organization permitted national affiliation with a maximum of local control.

Figure 1 traces the growth in the number of credit cooperatives during our period. The data underlying this figure are only good enough to establish basic trends, but those trends are clear: Schulze-Delitzsch's cooperatives grew in number until the 1880s, after which they become larger (in terms of members and liabilities) but not more numerous. The rural cooperatives, on the other hand, did not experience significant growth in numbers until the late 1870s, and their period of most rapid growth was after 1890.⁹

Differences among cooperatives

Credit cooperatives shared internal organizational features regardless of their type, in part because of legal requirements discussed below. The management committee (*Vorstand*) represented the cooperative judicially and made most important decisions: accepting new members, granting loans, etc. Throughout the paper this committee is what is meant by "the management." The supervisory committee (*Aufsichtsrat*) met less frequently to oversee the management committee. The supervisory committee's primary role was to review and approve the management committee's decisions. In some matters (such as for very large

⁹ The urban/rural nomenclature is a convenient shorthand but not completely accurate. In 1911 some 29 percent of members of Schulze-Delitzsch credit cooperatives were either farmers or agricultural laborers (Great Britain 1914, §311). Many members of rural cooperatives, on the other hand, had occupations that had little to do with agriculture. The rural cooperatives were usually described as agricultural (*landwirtschaftlich*). Guinnane (1993) discusses occupations of members and loan purposes for the study cooperatives.

loans, or a loan to a member of the management committee) the supervisory committee had first say. Members of these two committees served terms of fixed length. (The committees could not have overlapping members.) The dual management committee structure was not specific to cooperatives, as several forms of German business were also organized this way.¹⁰ The membership as a whole (*Generalversammlung*) met annually to elect the management committee and the board of supervision and to make decisions on basic policies such as interest rates. Membership was not automatic, but once accepted into the cooperative all members could participate on an equal basis in elections for management positions and on the important policy issues put to a general vote. The cooperative's day-to-day business activities, as well as its bookkeeping, were undertaken by a treasurer who was in some cooperatives a designated member of the management committee, and in others, a cooperative member selected by the management committee.¹¹

The Schulze-Delitzsch and Raiffeisen-style credit cooperatives had important structural and operating differences, summarized in Table 2. Rural cooperatives on the whole tended to be similar, whether in Raiffeisen's organization or not, but there were some important differences between the Raiffeisen and Haas group. On several issues the Haas group merely recommended what Raiffeisen required. The Schulze-Delitzsch cooperatives often switched to limited liability (when it became legal for cooperatives in 1889), paid dividends to members, had more paid staff, and were larger than the

¹⁰ Schulze-Delitzsch may have recommended this structure for cooperatives because he thought it typical of large businesses, or because he thought the public would take cooperatives more seriously if they were organized in imitation of large businesses. Edwards and Fischer (1994) note that the extent of such dual management-committee firms in Germany even now is more limited than the literature would suggest.

¹¹ Depending on the region in Germany, this person was called either *Rechner* or *Rendant*. Throughout this paper I refer to him as the treasurer, following the translation adopted in most English-language works on German cooperatives. The male pronoun is used advisedly; women were usually forbidden to join cooperatives, and even those who joined or became members after the death of their husband were forbidden to attend meetings or take part in decision-making. I know of no women in any management position prior to World War I.

Raiffeisen or Haas cooperatives. Liability was an especially contentious issue; the Raiffeisen organization was firmly opposed to limited liability for local cooperatives. The Haas organization thought it generally best for cooperatives to have unlimited liability, but recognized that in regions where wealth differences were very large (such as east Elbian Germany) limited liability might be the only way to attract wealthy members.¹² Many Raiffeisen credit cooperatives engaged in non-credit business such as purchase of fertilizers and sale of agricultural output. More commonly in the Haas group, rural, non-credit cooperatives were formed with distinct membership and organizational structure.

Two other differences relate to lending policies and are relevant to the rise of the Centrals. Schulze-Delitzsch advocated short-term loans, usually 90 days or less, that could be renewed several times if need be. In fact, discounting bills was a major form of lending for his cooperatives. He also argued that a cooperative should have large enough shares, and build up sufficient reserves, that it could eventually rely on its own capital rather than deposits and other sources. Rural cooperatives, on the other hand, tended to make long-term loans (often 10 years or more). Raiffeisen argued that short-term loans were of little use to farmers. In his defense of the Raiffeisen-style cooperatives Kraus (1876, p.4) argued that when agriculturalists needed credit, they needed it for longer times than the urban workers and small businessmen typical in Schulze-Delitzsch cooperatives. One could in theory take a long-term loan by repeatedly rolling over short-term loans, but this entailed considerable transactions costs.¹³ The rural cooperatives also tended to have nominal or at least small shares, meaning that they relied on deposits. These were typically not demand deposits. Although rules varied from cooperative to cooperative, savers

¹² The 1889 allowed a third form of liability call *Unbeschränkte Nachschusspflicht* which was a variation on unlimited liability and used by few cooperatives.

¹³ Loans from rural cooperatives usually had a 90-day recall provision. The sources studied in Guinnane (1993) suggest this recall was extremely rare, usually associated with problems in the *loan* rather than the cooperative's illiquidity. This fact may reflect the success of the Centrals in providing liquidity to cooperatives. Banerjee, Besley and Guinnane (1994) study the implications of liability structure and other organizational issues.

could usually only withdraw a small portion of their funds without notice. But given their long loans, even a three-month withdrawal notice requirement meant that a rural cooperative was lending long and borrowing short. Schulze-Delitzsch argued that this practice violated sound banking principles. Most bankers today would disagree, but agree that long-term assets and short-term liabilities make the institution potentially vulnerable. These two policy differences — loan duration and sources of loan capital — imply differences in liquidity and problems associated with illiquidity. The rural cooperatives were *by construction* less liquid than their Schulze-Delitzsch counterparts.¹⁴

Arrayed on top of the individual cooperatives were a number of regional and national organizations. The Centrals and auditing associations studied here were the middle level. At the apex were several national "federations," collections of auditing associations.¹⁵ Cooperatives were legally free to choose their level of association with these groups. Some cooperatives belonged to no regional organizations (Central or auditing association). Some auditing associations belonged to no national federation.

Why Credit Cooperatives?

Schulze-Delitzsch, Raiffeisen, and other cooperative leaders stressed different reasons for credit cooperatives, but all based their movement on the assertion that formal credit providers such as banks were not able to serve the urban handworkers and rural smallholders that formed the basis of the

¹⁴ Liquidity was a major issue in banking during the late nineteenth century. Schulze-Delitzsch (1875), in which he lays out his reservations about Raiffeisen's cooperatives, stresses the liquidity issue. Eichhorn (1910) concluded on the basis of his study of Schulze-Delitzsch cooperatives that even they *were* not sufficiently attentive to the problem. But his criterion seems to be their liquidity compared to major banks. He does not consider whether a credit cooperative *should* be as liquid as a bank. The liquidity of Raiffeisen's cooperatives was a major complaint leading to the semi-official Enquete (1875).

¹⁵ Both the auditing associations and the national organizations were registered as *Verbände* rather than as cooperatives.

cooperative's membership. Their economic critique of banks and other credit providers was similar: All argued in one way or another that the cooperative's members made poor customers for banks because these customers entailed unusual information and enforcement problems. Raiffeisen and other leaders argued that in a cooperative limited to a small geographic area, such as a village or several hamlets, actual and potential members would have considerable knowledge of each other's habits, character, and abilities. In 1912, 71 percent of all Raiffeisen credit cooperatives were located in places with 2000 or fewer people (Generalverband 1912, Table 3). People in this context could impose a wide variety of economic and extra-economic sanctions on one another. Because of this information and the enforcement mechanisms, cooperatives could dispense with the costly conditions other lenders used to provide information and enforcement. Schulze-Delitzsch and his adherents never clearly acknowledged the point, but his cooperatives *had* to have different policies in part because they were located primarily in urban areas. Their members could not hope to know each other as well as members of a small rural community, and enforcement mechanisms that worked in rural areas would not necessarily work in a city. Banerjee, Besley and Guinnane (1994) show that some crucial differences in cooperative design were rational adaptations to differences in external conditions. Guinnane (1993) uses manuscript sources from several rural credit cooperatives to test three implications of this information/enforcement hypothesis. The sources bear out the basic claim. The credit cooperatives acted as if they had good information and could enforce loan terms on borrowers. Manuscript sources for Schulze-Delitzsch cooperatives have not yet been located, so not all parallel tests can be undertaken. But basic differences in loan policy do support the contention that Schulze-Delitzsch cooperatives had less information about their borrowers. The problems solved by Centrals and auditing associations are in a real sense weaknesses that grow directly out of the way the cooperatives set out to deal with the people they thought were neglected by banks. Contemporary observers understood that the cooperative's information and enforcement advantages came at a cost (*e.g.*, Wygodzinski 1911, p.168).

Formation of the Centrals

Disagreements over Centrals were the source of some of the most bitter controversy between Schulze-Delitzsch and Raiffeisen. Early on leaders of individual cooperatives talked about the need for financial *Ausgleich* (“balancing”) among cooperatives. The context suggests less worry about seasonality than the observation that some cooperatives had chronic excess deposits, while others, especially new cooperatives, had trouble attracting deposits. Some cooperatives also had trouble borrowing from banks, for reasons we discuss below. Schulze-Delitzsch was at first skeptical of Centrals as a solution to the balancing problem. Part of his opposition was the distrust of centralization noted above. Part was the fear that Centrals would eventually become conduits for State aid. But Schulze-Delitzsch also noted, reasonably, that Centrals were not an obvious solution to the problems faced by cooperatives. Cooperatives within any region were likely to have similar credit needs, so a Central would have to cover a large territory and become large to succeed in matching cooperatives with excess funds and those that needed funds (Schulze-Delitzsch 1897, p.53). A regional Central would not meet the need. And who would control a national Central? Schulze-Delitzsch was less willing to acknowledge that Centrals were a solution to problems faced more severely by *rural* cooperatives. His cooperatives, being larger and having a membership that represented a greater mix of occupations, already took advantage of some of the diversification available at the local level. One might also think that with fewer agricultural members they would experience less seasonality.¹⁶ Anecdotal evidence, finally, suggests that the urban cooperatives found it easier to borrow from commercial banks, probably because of their size, age, and location in urban areas.

Several Schulze-Delitzsch cooperatives raised the Centrals issue at the organization’s 1859 meeting and again at the 1860 meeting. Schulze-Delitzsch spoke against forming a Central both on the

¹⁶ Wygodzinski (1911, p.176) claims there *was* a seasonal pattern of loan demand and savings supply in the urban cooperatives, although he admits there is no data comparable to the data on rural cooperatives we discuss below.

general grounds noted above and on the specific grounds that current conditions did not favor establishing a new banking institution. But he did but agreed to a *Zentralkorrespondenzbureau* (hereafter Bureau) that would broker loans between cooperatives and that would attempt to locate loans for cooperatives from commercial banking houses (Thorwart 1911, p.3). The Bureau was able to obtain credit from two commercial banks and distributed a sort of newsletter among its members in which cooperatives advertised their willingness to lend or their need for cash. While it is not known how many inter-cooperative loans were made this way, it is clear that the process placed Schulze-Delitzsch in the position of vouching for one cooperative's soundness to another. The project quickly encountered a problem we will see later: at least at the interest rates suggested, much more money was offered than there was demand for it. This experience did not change Schulze-Delitzsch's mind about a Central, and his success in the early 1860s in negotiating contracts with commercial banks for the cooperatives reduced pressure on him to agree. Then war with Denmark (in 1864) intervened to change money-market conditions drastically. A financial panic accompanied the outbreak of war, leading to an increase in interest rates and a rupturing of pre-established commitments as banks scrambled for liquidity. Cooperatives that had relationships with banks soon discovered that in the middle of a financial crisis they could not rely on their bankers. Schulze-Delitzsch concluded that in a crisis cooperatives could only rely on their own bank.¹⁷

The product of this change of heart was the *Deutsche Genossenschaftsbank von Sörgel, Parrisius und Co.* (hereafter DGSP), founded in 1864. This bank was structured as a limited partnership with transferrable shares.¹⁸ The DGSP's statutes described its purpose as banking in all forms; its activities

¹⁷ See Thorwart (1911, pp.14-15). The author makes clear that many in Schulze-Delitzsch's circle disagreed with his opposition to a Central; one wonders whether the war was a convenient excuse for changing his mind.

¹⁸ *Kommanditgesellschaft auf Aktien*. This was a common form of incorporation, and nothing should be read into the fact that it was a partnership rather than a joint-stock corporation. The modern Deutsche Genossenschaftsbank is descended from another institution described below — not the

were not limited to the service of Schulze-Delitzsch's credit cooperatives. This marks an essential difference between the DGSP and the Centrals formed later by the rural cooperative movement. The DGSP had its main office in Berlin but soon established a branch in Frankfurt to deal with cooperatives in southern Germany. Available information does not provide much detail on the breakdown of business between cooperatives and other customers. We can say, however, that in most years total turnover from business with cooperatives was larger than for other customers, although not overwhelmingly so (Thorwart 1911, p.33).¹⁹ The bank extended credit both as outright loans and by discounting bills, and later cleared checks for its member cooperatives. The bank grew rapidly, and in 1904 had a total capital of 30 million Marks (Thorwart 1911, p.72). Yet this sum was small by the standards of Germany's Great Banks: the total capital of the Deutsche Bank in 1904 was 190 million Marks.

The Deutsche Genossenschaftsbank lasted until 1904, when it was bought by the Dresdner bank, the third-largest of the Great Banks. The purchase followed a number of years of severe losses for the DGSP. The *Blätter für Genossenschaftswesen*, a publication of the Schulze-Delitzsch cooperatives, attributed the merger to the same competitive pressures that had set off a wave of concentration in German banking in the 1890s. Larger banks could charge lower fees for banking services, and banks (such as the DGSP) that did not engage in investment banking were cut off from important sources of profit (quoted in Thorwart 1911, pp.72-73). The Dresdner Bank took on several leaders of the defunct DGSP as managers or members of its supervision committee, and continued to operate a special department for servicing Schulze-Delitzsch credit cooperatives (Seelmann-Eggebert 1927, p.28).

Schulze-Delitzsch's initial opposition to a Central was tied-up with Raiffeisen's first attempt to form such an institution. Raiffeisen established the *Rheinische Landwirtschaftliche Genossenschaftsbank*

DGSP.

¹⁹ Cooperatives accounted for about 60 percent of total turnover in 1904, somewhat less in earlier years.

in 1872 as a cooperative with unlimited liability. This institution limited its operations to the Prussian Rhineland. Raiffeisen helped to establish similar banks in Hessen and in the Palatinate (Seelmann-Eggebert 1927, p.61). The expansion of these Centrals was hindered by opposition from Schulze-Delitzsch, who reasoned that an unlimited liability cooperative whose members were all unlimited liability cooperatives was a formula for making the members of one cooperative liable for the debts of all others. Schulze-Delitzsch went so far as to open a formal complaint in the Reichstag against Raiffeisen's bank (Cahill 1913, p.174). The latter responded by re-constituting his Central as a joint-stock corporation. Only cooperatives following Raiffeisen's system could purchase shares in the new bank. The *Landwirtschaftliche Central-Darlehenskasse* (hereafter LCD) was unlike other rural Centrals in that it was a single institution for all of Germany. Although the LCD had formal branches these were run from the institution's headquarters.

In some regions of Germany cooperatives formed relationships that resemble one form of later Central. A regional association would contract with a bank (either a commercial bank or a State bank) to provide services for member cooperatives. Cooperatives in Württemberg had a contract with the a State bank in Stuttgart (*Verein für Socialpolitik* 1896, Vol. I, p.282). Cooperatives in Baden had a similar relationship with the Rhein Mortgage Bank in Mannheim. Under this contract the Bank took deposits from and made loans to member cooperatives at rates set by the cooperative association. The association received .1 percent of all turnover in the loan accounts. The Bank also agreed, should cooperative deposits be insufficient to cover all loans, to lend out of its own funds at rates pegged to rates prevailing in the money market (*Verein für Socialpolitik*, Vol. I, p.305).

Legal developments in the cooperative system

Schulze-Delitzsch's critique of Raiffeisen's first central was at some level a legal argument, and further developments in Centrals were tied to a change in the laws regarding cooperatives. The

cooperatives had long lacked special legislation enabling them to act as business enterprises. The lack of a legal foundation was often the pretext for government harassment. Schulze-Delitzsch became a member of the Prussian Chamber of Deputies in 1861 and set about drafting legislation for cooperatives. After considerable negotiation with interested parties the Prussian law of 1868 first put the cooperatives on a sound legal footing. This law was taken over the next year by the North German Confederation and so governed German cooperatives in most territory north of the Main. The first Reich law on cooperatives was passed in 1889. The cooperative law of 1889 introduced several changes into this system. For the first time it became legal for cooperatives to have limited liability. At the local level, many Schulze-Delitzsch cooperatives took advantage of the legal change to adopt limited liability. This development also allowed Centrals to be formed as *limited* liability cooperatives and to admit as members *unlimited* liability cooperatives. This provision overcame Schulze-Delitzsch's worries about Raiffeisen's first central. After 1889 virtually all new Centrals were formed on this basis, and some of the older ones re-organized themselves as limited-liability cooperatives.

A second feature of the 1889 law made it less important for cooperatives to deal with specialized cooperative banks such as the DGSP. Before 1889 cooperatives often experienced difficulty in raising loans from banks and other formal financial institutions for the simple reason that they could not be sued in court — they were “permitted associations” rather than legal persons. When cooperatives did borrow from outside institutions, the loans were technically loans to specific individuals within the cooperative. One reason Schulze-Delitzsch agreed to the creation of the DGSP is that a specialized bank for cooperatives would be less worried about this formality. The 1889 law specifically recognized the ability of cooperatives to sue and be sued. The law that eased the formation of Centrals also removed the one *institutional* disability that made Centrals most important.

A third feature of the 1889 was to introduce mandatory auditing for all cooperatives in Germany. Successive German laws extended compulsory external audits to an ever-wider class of economic

enterprises during the nineteenth century (Henning, 1990). During his lifetime Schulze-Delitzsch successfully resisted compulsory audits for cooperatives. He was concerned that audits would weaken the sense of individual responsibility for the cooperative's affairs that he saw as crucial to the institution. He was especially concerned that cooperative members and the *Aufsichtsrat* would see a compulsory audit as a substitute for their own vigilance and that individual cooperatives could degenerate into nothing more than branches of a large, centralized institution. Both Schulze-Delitzsch and Raiffeisen did, however, see the value of voluntary external audits for credit cooperatives, and both groups sponsored auditing efforts among their own cooperatives. Schulze-Delitzsch, for example, recommended that the regional organizations in his group conduct audits (Parisius 1895, p.12). After Schulze-Delitzsch's death no significant opposition to compulsory audits remained, and article 51 of the 1889 cooperative law required that every cooperative be audited at least once every *two* years. A cooperative could simply ask the court at which it was registered to appoint an auditor. Or the cooperative could join an auditing association, groups which had existed for some time but were only given the right to function as specialized cooperative auditors in 1889. Two aspects of this legal requirement are important for our purposes. First, many cooperatives would in practice be audited *every* year, so the annual audit was not a binding constraint. Second, the law permitted cooperative auditing to be undertaken by the regional auditing associations, but nothing in the law *required* that cooperatives be audited by a specialist auditor.

The 1889 law also marked the beginning of the so-called "Centrals movement," a period that saw the formation of many more Centrals, usually as limited-liability cooperatives. These Centrals took two forms. Most acted like banks as we know them — they accepted and disbursed money. Others were formed as and remained "book" institutions. A book Central had an account at some other financial institution, either a commercial bank or the Prussian Cooperative Central Bank discussed below. The Central formed in Kassel in 1893 used the DGSP as its bank. When an individual cooperative made a deposit at its Central, the cooperative would send the money to the bank, but have its account credited

within the book Central's internal records. When withdrawing deposits or taking a loan from the book Central, the money would come from the bank. But for all practical purposes book Centrals were just like any other.

Centrals for Centrals

For several years the Haas Centrals all remained separate regional entities, and there was no all-German bank uniting them as there was for the Raiffeisen group. In 1895, however, the Prussian government chartered a bank that was intended to parallel the Reichsbank and to serve the needs of cooperatives within Prussia. The Prussian Cooperative Central Bank (usually called the *Preussenkasse*) remained a governmental body, run by Prussian bureaucrats and directed by royal appointees. (An advisory body included leaders of the cooperative movement, but they had no managerial power.) The original capital was all subscribed by the Prussian government, and although cooperatives and their Centrals were permitted to purchase additional shares, few did. The *Preussenkasse* played several roles. A Central could use the *Preussenkasse* as its Central, borrowing when needed and depositing excess funds at other times. Some credit cooperatives dealt directly with the *Preussenkasse*. The *Preussenkasse* survives to this day in the present-day Deutsche Genossenschaftsbank (DG Bank).

The *Preussenkasse* was always a controversial institution.²⁰ Through its capitalization the new bank enjoyed a hefty contribution from the Prussian government. Those opposed to State assistance to cooperatives saw in the *Preussenkasse* the very State involvement Schulze-Delitzsch had feared. The bank's status as a Prussian rather than German institution also involved some awkwardness, since Prussia was only about 60 percent of German territory, and the cooperative movement was especially strong in some non-Prussia areas such as Bavaria. Another all-German cooperative bank, the *Landwirtschaftliche*

²⁰ Thus Hillringhaus (1922), written by a bank official, is a thoroughly polemical work. Jost (1913) is a dispassionate discussion of the Centrals and the *Preussenkasse*.

Reichsgenossenschaftsbank was formed in 1902 as a cooperative with limited liability. This institution was a product of a struggle between the *Preussenkasse* and the Haas organization over the former's high-handed methods of dealing with Centrals. Some viewed the new bank as a direct competitor with the *Preussenkasse*, while others saw it as another intermediary: Centrals would deal directly only with the *Landwirtschaftliche Reichsgenossenschaftsbank*, which would in turn avail itself of the *Preussenkasse's* credit when needed. In the event neither role was very practical, and the Haas "Head Central" dealt primarily with Centrals outside of Prussia.

Discussion of the Centrals should not obscure the arrangements that *individual* credit cooperatives made to deal with the problems of excess or insufficient deposits. Several arrangements were used. At the time of Schulze-Delitzsch's initial opposition to forming a Central, some of the larger Schulze-Delitzsch credit cooperatives began to act as informal regional Centrals, accepting deposits from and lending to their smaller neighbors (Wygodzinski 1911, pp.170-171). Kraus (1876, pp.25-6) noted that some Raiffeisen cooperatives in the Rheinland used private bankers as outlets when they had excess deposits. He even noted the supreme irony of the squabble between Schulze-Delitzsch and Raiffeisen: Raiffeisen's cooperatives in more than one case deposited excess cash at nearby *Schulze-Delitzsch* cooperatives! Some cooperatives, moreover, dealt with excess deposits by refusing them. The Raiffeisen cooperative in Hamm, for example, limited deposits to 3,000 Marks and refused deposits from non-members.²¹

2. The Centrals in Practice

In this section we describe what is known about the operations of rural Centrals. At a mechanical level the role of these institutions is simple. Centrals accepted deposits from and made loans to cooperatives. They also borrowed from and lent to other financial institutions and to the capital market

²¹ Kraus (1876, Note in statistical tables).

at large. At a less mechanical level we can understand these institutions better if we distinguish several functions. These roles are conceptually distinct but overlapped in practice:

- Centrals as providers of liquidity: Rural credit cooperatives were especially illiquid. The availability of Central credit made this condition tolerable, as the cooperative knew that if necessary it could tap the Central to back it up.
- Centrals as smoothers of seasonal fluctuations: Credit cooperatives faced considerable seasonal shocks to deposits, withdrawals, and loan demands, especially in rural areas. The Centrals acted as buffers against these shocks.
- Centrals as lenders of last resort: sometimes a cooperative would encounter a severe crisis due to an embezzlement or related gross mismanagement. A Central could provide bridge loans that meant the difference between declaring bankruptcy and continuing operations.
- Centrals as development banks: Cooperatives aimed to raise as much of their capital as possible from deposits. In some circumstances, especially when a cooperative was just formed, this policy would have limited loans to a very few. Centrals acted as providers of loan capital for long periods.
- Centrals as outlets for investment: Some cooperatives regularly attracted more deposits than they needed. Under these circumstances, the Central gave the cooperative a safe place to invest these excess deposits, allowing the cooperative to function more effectively as a savings institution. These excess deposits also made it easier for the Central to act as a development bank.

In the remainder of this section we flesh-out each of these roles and provide evidence on how and to what extent the Centrals fulfilled them. In section 4 below we consider the Central's role by conducting a thought-experiment on how alternative arrangements could have filled these needs.

Before proceeding we should discuss a somewhat peculiar aspect of individual cooperative behavior. Local cooperatives tried hard not to change their interest rates, for borrowers and for lenders,

in response to market forces. Some of the Central's functions would have been unnecessary if individual cooperatives were willing to use interest-rate adjustment to clear the market for funds at the local level. Why didn't they? There are two *economic* reasons. (1) Every change of interest rate involved considerable additional labor for the treasurer, and perhaps some similar costs for those depositors and borrowers. Transactions costs always limit the advisability of changing prices.²² (2) The demand for loans and the supply of deposits was for many cooperatives interest-inelastic. Members were forbidden to borrow outside the cooperative. In remote rural areas individuals would have few choices over where to deposit their money.²³

Interest-rate policy also reflects the cooperative's non-economic objectives and its decision-making structure. Cooperatives stressed the attraction of local savings as an end in itself. Many cooperatives developed special incentives for young savers especially. So-called "penny savings books" encouraged children to save in amounts smaller than taken in a single deposit. Often a cooperative with excess deposits was not earning any *net* income on funds it forwarded to the Central. In 1898, for example, one of the study cooperatives discussed below was earning 3.5 percent interest on funds it had deposited at the Central while paying its own savers 3½ percent. The significant excess deposits this cooperative forwarded to the Central might well have been costing it money once we consider administrative costs.²⁴ Interest rates could be altered by the management or supervision committees, but most records show that changes were only made at annual meetings of the entire membership. Discussions were apparently

²² The president of the *Preussenkasse* advocated a similar policy for his institution, again on the grounds that cooperative *Rendants* could not keep up with interest-rate fluctuations (Reichsverband 1896, p.43).

²³ Changes in interest rates would also affect the incentives to take and repay loans. The argument of Guinnane (1993) implies that such Stiglitz-Weiss effects were offset by monitoring among cooperative members. The issue was not raised, to my knowledge, at the time.

²⁴ The cooperative in question is Leer, discussed further below.

heated. Some members were net lenders, others were net borrowers; changing the interest rate would be a benefit to some members and harm others.

Which cooperatives belonged to a Central?

Membership in a Central was entirely voluntary. In analyzing the Central's role we must bear in mind that not all cooperatives belonged to one; we are looking at the sub-group of cooperatives that thought the benefits of membership exceeded the cost. Unfortunately, I know of no data (published or unpublished) that would support estimation of a micro-level model of the decision to join a Central. Without knowing much about the differences between cooperatives that did and did not join Centrals we can only make cautious statements about the effect of the Central on cooperative behavior. The problem is a familiar one: if cooperatives that belong behave in a particular way, are we looking at a consequence of the Central's services, or have we just discovered something related to their decision to join the Central in the first place?

We do have aggregate data on Central membership, although this information exists only for the early twentieth century. The data summarized in Table 3 show significant differences between cooperatives that were and were not affiliated with a Central. Independent cooperatives were a minority, but for the limited-liability cooperatives they were a large minority, at 35 percent. This probably reflects the weight of Schulze-Delitzsch cooperatives among those with limited liability, although the data do not permit the breakdown necessary to examine this question.²⁵ Cooperatives that did not belong to Centrals had much larger memberships than those that did. Somewhat surprising is the comparison for liability per member in the limited-liability cooperatives. Cooperatives that belonged had much greater liability per member. This may reflect the Central's lending rules, which sometimes fixed total lending to any

²⁵ The published tables only distinguish cooperatives by type of liability, they do not cross-classify the cooperatives by urban/rural or other markers.

cooperative according to a formula that took into account the cooperative's liability. Cooperatives that joined a Central so they could borrow had an incentive to take on high liabilities.

We would also like to know whether cooperatives were long-term members of Centrals, or only joined when they needed assistance. To understand more precisely how individual cooperatives used the services made available by their Central, we must turn to the unpublished business records of the Centrals. The only such records I have been able to locate pertain to the *Rheinischer Bauern-Kredit-Verein eGmbH*, which was founded in Kempen in December 1892, and later changed its name to *Rheinischer Bauern-Genossenschaftskasse eGmbH* in connection with a move to Köln (Cologne) in 1901. The Köln Central's official membership list survives.²⁶ From this list I constructed life-table estimates of a cooperative's survival as a Central member. According to these estimates, only about five percent of cooperatives had ceased to be members ten years after joining the Central. Put another way, the probability that a cooperative would resign from the Central in any year cannot be distinguished, statistically, from zero. Of those that left, about half had dissolved as cooperatives, suggesting that satisfaction with the Central was considerable. Cooperatives (at least in this Central) tended to join a Central and remain members for a long time. This is not a trivial result, given that member cooperatives were required to pay a share of their annual net revenues as dues to the Central.

Centrals and their members

Table 4 uses three Haas Centrals in 1900 to illustrate the range of membership and practice among these institutions. By German banking standards even the Munich Central was a modest affair. The relative weight of credit cooperatives within the Central varied greatly. Some 35 percent of the Darmstadt Central's members were either another form of cooperative or an individual, while credit

²⁶ This is the *Liste der Genossen*, ordinarily kept by the *Amtsgericht* (Courthouse) at which the cooperative was registered. Why this document is in the WGZ archive and not the state archive I cannot say.

cooperatives made up nearly the entire Munich Central. Non-credit cooperatives placed different demands on Centrals, as we shall see below. Centrals also used their funds in different ways. The Posen Central held nearly all of its assets as loans to cooperatives. The Darmstadt and Munich Centrals, on the other hand, each had significant loans outside the cooperative system. Liabilities show similar diversity. The Posen Central had borrowed much of what it was lending to cooperatives, while the Munich central obtained most of its money as deposits from cooperatives. The Darmstadt Central's age shows in its liabilities: with 1 million Marks paid-in share capital it relied less on deposits than the other Centrals.

The consolidated balance sheets published by the Centrals do not provide complete information on their portfolios. But the available information shows that the vast majority of liabilities were deposits from cooperatives and most assets were loans to cooperatives. Centrals also borrowed from the *Preussenkasse*. Some Centrals would end a year with small debts to the Reichsbank or the Post Office, but these seem to have been incurred as part of clearing checks or transferring funds and were not loans *per se*. Some Centrals also list as liabilities small debts to unspecified banks. Whether these liabilities are to State institutions or private commercial banks is unknown.²⁷ On the asset side, Centrals could have deposits at the *Preussenkasse*, and the Centrals for which this level of detail is available often held obligations of the provincial, state, or Reich government. The statutes of the Münster Central claimed that it would "avoid any dealings that entailed a risk of losses," and limited its assets to loans to cooperatives, discounts "according to the principles of the Reichsbank," and "secure mortgages." Stocks and bonds could only be purchased with the specific permission of the Aufsichtsrat.²⁸ The Köln Central's detailed balance sheets are available for most years prior to World War I, and show that it never held any assets other than loans to members, deposits at the *Preussen kasse*, and government bonds.

²⁷ Thorwart (1911, p.45) claims that the Frankfurter Kommandite, a large private bank, extended loans to the Darmstadt, Wiesbaden, and Kassel Centrals when they were first formed. He does not give any information on the sizes or terms of those loans, however.

²⁸ Statuten der "Landlichen Central-Kasse" zu Münster in Westfalen, §31-33.

The study cooperatives and their Centrals

Individual cooperatives published only the most rudimentary balance sheets. To learn more about them I have selected, with the assistance of the *Bundesverband der Deutschen Volksbanken und Raiffeisenbanken - BVR*, a number of nineteenth-century cooperatives for intensive study. Some modern survivors of the cooperative movement have the original business records in their basements. Discussion of the “study cooperatives” here refers to these manuscript records.²⁹ Figure 2 is a map of Germany showing the location of all the study cooperatives. Quite by chance all of the study cooperatives were members of a Central or similar institution. Diestedde and Leer were located near enough to one another that they were members of the same auditing association and shared a common Central. The *Ländliche Centalkasse* Münster was formed as a joint-stock bank in May of 1884. The Diestedde cooperative was an original member of the Münster Central — it had been formed in 1883 — while the Leer cooperative joined after its foundation in 1891. For the period of interest the Hatzfeld cooperative used as its Central the *Landwirtschaftliche Kreditbank* in Frankfurt.³⁰ There were several distinct credit cooperatives in the Schmelz area, formed at different times. All belonged to a Central and auditing association based in Trier. Maulburg also had several credit cooperatives. All belonged to the auditing association based in Karlsruhe.³¹

Figure 3 summarizes the position of four of the study cooperatives with respect to their Central. These financial data, as well as the minutes of the manager’s meetings, suggest that the individual

²⁹ Guinnane (1993) provides more information on the study cooperatives and the records. The cooperatives were chosen primarily according to the amount and quality of their surviving records. Thus, the cooperatives are by no means a random sample of cooperatives formed in the nineteenth century.

³⁰ In 1938 the Hatzfeld cooperative joined the Kurhessen Verband located in Kassel, in response to changes in administrative districts that placed it outside the Frankfurt Central’s region of operation.

³¹ *Verband landwirtschaftlichen Kreditgenossenschaften Grossherzogtum Baden.*

cooperatives made use of their Centrals in different ways.³² The Leer cooperative maintained a positive net balance until the very end of the study period. This balance was built up quickly following the cooperative's foundation and was only drawn down in the last years prior to World War I when the cooperative began to make large loans for the first time. In most years prior to 1913 some 20-30 percent of the Leer cooperative's total assets were held as deposits at the Central. The Leer cooperative built up these excess deposits in part through the inflexible interest-rate policy noted above. Leer did not change its deposit interest rate *once* during the first 10 years of its existence, and after that change did not make another change for seven years.³³ The Diestedde and Hatzfeld cooperatives used the Central differently, borrowing at some times and building up significant deposits at others. The Diestedde business records contain frequent instructions to the treasurer regarding the Central account, suggesting that this cooperative was careful about managing its cash and used the Central to earn interest whenever possible.

The Limbach (Schmelz) cooperative's behavior illustrates a different role for Centrals. For some of its early years the Limbach cooperative had difficulty attracting deposits and could not make all the loans it approved out of its own funds. The reasons for this must reflect the cooperative's desirability as a savings institution *and* its lending policy, but in this case the peculiar feature is the competition for local savers' funds. A state-supported *Sparkasse* had been founded in the Schmelz area several years before the introduction of credit cooperatives. By 1904 there were also three other credit cooperatives in close proximity. While this was a densely populated area (with 235 persons per square kilometer, compared to 100 in Leer, 68 in Hatzfeld), potential depositors had an unusually large choice of interest-paying

³² Not all information is available for Figure 3 because the annual reports, which contain the data, have not all survived.

³³ This was not a period of stable interest rates throughout the financial system. From 1891 to 1901, the money-market discount rate varied from a low of 1.74 to a high of 4.45 percent (Deutsche Bundesbank 1976, F2.01).

institutions.³⁴ There is no direct evidence of the competition for funds, but it seems likely that the Limbach cooperative, especially during its early years as an unproven institution, would be hard-pressed to compete against the *Sparkasse* with its state guarantee. Over time the Limbach cooperative was better able to attract deposits.

Centrals and seasonality

For an agricultural cooperative, the Central was important as an institution that helped it ride out seasonal fluctuations. Two of the study cooperatives have the information required to examine seasonal patterns of net flows of money into the individual cooperative. Figures 4 and 5 summarize that information. Each graph shows the estimated coefficients for the monthly dummies in a regression of the form:

$$Net\ inflow = \sum_{j=1}^{10} M_{ij} \delta_j + \beta_1 Time + \beta_2 Time^2 + \epsilon \quad (1)$$

where the observations are monthly and $Time = 1$ in the first month of the series. The bars in Figures 4 and 5, that is, are the δ_j in equation 1. The observation for December had to be dropped *from each dataset* because of the way financial information was reported in that month. The regression coefficients are relative to November. The regression format is intended as a convenient way to detrend and summarize the data. The regressions have little explanatory power (R-square is less than 5 percent in each case).

³⁴ The credit cooperatives existing in the Schmelz area in addition to Limbach included Hüttersdorf-Bupprich, founded in 1902, Bettingen-Goldbach (1904), and Aussen (1904). Population densities refer to the county or *Kreise* and pertain to 1905. Data from *Statistik des deutschen Reichs* N.F. 212 2b, Table 24.

The Leer cooperative's records have considerable detail of this type. We can distinguish net loan income, net deposit income, and net current account income.³⁵ Few loans were taken in January, and many loans required periodic payments in that month. Loans were rarely taken out in March, April, or November. The biggest months for loans were February, when farmers and merchants needed to finance the requirements of the next agricultural cycle; June, when, the records suggest, borrowers were taking advantage of reduced labor requirements to improve fields, repair buildings, etc.; and August, when wages and other bills were due before the crops came in. The deposit cycle for Leer reflects, at some level, the other side of the loan story. Deposits were largest in May, when spring labor was generating the first wages, and October and November, after crops had been sold and all debts paid off. Deposits were fewer and withdrawals more numerous in August and September for the same reasons. Current account flows represent larger movements in fewer accounts. These accounts were most popular with shopkeepers and artisans. The January-February outflow reflects their preparations for either the new planting, or for selling farmers what they needed for the new planting. Overall, the Leer cooperative's treasurer faced regular, substantial surges in inflows and outflows. October through December he would find inflows large relative to trend, and would be looking for a place to invest the money. But he could expect to need at least part of it back in the new year, as January and February made their call on the cooperative's funds. He would also be wise to have cash on hand in June, when he could expect considerable withdrawals.

The data from the Aussen cooperative, one of the several located in the Schmelz area, do not permit breakdown by type of account. Figure 5 shows a regular pattern, but a pattern different from that in the Leer data. The big inflows in Aussen come not at the end of the year, but in March, May and June. In other respects the seasonal patterns are similar. What accounts for the difference between Leer

³⁵ Current accounts (*laufende Rechnung*) were lines of credit that paid interest if the account was in the black. Balances in these accounts could be large, but the accounts were not very common.

and Aussen? The Schmelz region had large numbers of men who were both miners and owned some farmland. Of the 13 original members of the Hüttersdorf-Bupprich credit cooperative, six call themselves miners.³⁶ According to the occupational census of 1907, 45 percent of male agricultural workers in Leer had another occupation. The corresponding figure for the Schmelz area is 71 percent.³⁷ May and June would not be slack time for them, as in a purely agricultural economy. Miners might find this the best time to put their non-agricultural skills to work. The *agricultural* economies of the two areas also produced differences in the seasonal needs for credit. The Leer and Limbach cooperatives were separated from one another by several hundred miles and did not belong to a common Central. But they illustrate both the idea of “balancing” through Centrals and Schulze-Delitzsch’s reservations it. Cooperatives with different seasonal patterns could help each other offset their peak demands. But cooperatives with sufficiently different seasonal patterns would, in all likelihood, be located a long way from one another.

How did these seasonal patterns translate to the level of the Central? Even in a fairly large region the demands of cooperatives, especially credit cooperatives, would be correlated. The Haas federation’s annual yearbooks include monthly data on flows between individual cooperatives and Centrals that were in the Haas group.³⁸ In a different paper a co-author and I use these data, along with information on weather, agricultural prices, and financial-market conditions, to model the determinants of the flows between Centrals and their members.³⁹ This research is still in progress, but several preliminary findings

³⁶ *Schmelzer Chronik* 1, p.465.

³⁷ Figures refer to the county or *Kreise*. Data in the *Statistik des deutschen Reichs* N.F. 209.

³⁸ The Raiffeisen Central never published comparable month-by-month information. The Haas federation noted the strong seasonal patterns of inflows and outflow, and remarked that when it had enough data it would make that data available to Central to use (Reichsverband 1897, p.103). They *might* have meant that Centrals could cooperate with one another to deal with predictable seasonal patterns.

³⁹ This project is joint with Oliver Linton. Modeling these series involves a number of complications (the series are short and non-stationary), making it hazardous to discuss any “simple” story here.

are interesting. Shocks to the prices of major crops (such as wheat or oats) increased net lending to cooperatives, usually with a 1-2 month lag. In some instances these reactions are fairly large. Increases in the Reichsbank's discount rate provoked a similar reaction. Centrals were probably not responding to the Reichsbank rate so much as to the same economic conditions that led to a change in Reichsbank policy. Somewhat surprisingly, the econometric exercises do not suggest much of a role for weather shocks. The sensitivity of the Centrals to these shocks shows that they were indeed helping member cooperatives to contend with such strains, and that "balancing" *among* member cooperatives was not enough to enable them to do so. To finance these efforts the Centrals had to draw on their own reserves or other banks, including the *Preussenkasse*.

This research should also be able to address a question never raised in the cooperative press of the day: did Centrals assist each other? Within the Haas group there was considerable scope for Centrals to lend to one another, to use the diversification of German agriculture to compensate for the lack of diversification within the territory served by any one Central. As noted, the published balance sheets are not detailed enough to see whether Centrals lent to one another. (The Köln Central neither lent to or borrowed from other Centrals, but that is just the one case). Using the published monthly data, we will test whether shocks in region *a* affect the behavior of a Central in region *b*, once possible effects on Central *b* have been taken into account. We expect the answer to be negative, given that all of these Centrals could borrow from the *Preussenkasse*.

The Centrals as Development Banks

Figures 6 and 7 use a different selection of Centrals to illustrate the Central's role as a development bank. Figure 6 reports the Central's lending to cooperatives *net* of cooperative deposits at the Central. The relevant data is not available on a monthly basis, so here we are forced to interpret year-end positions as reflecting longer-term lending and borrowing. This figure is scaled by the Central's

assets so differences in absolute sizes of Centrals do not swamp differences in portfolio composition. Negative values imply that on net the Central is funneling money from its member cooperatives to the larger financial system. This measure is an indication of how much the Central is taking from outside the cooperative system and making available to its member cooperatives. Figures 6 and 7 make an important point: some Centrals were less a means for their members to *borrow* from outside than a means for their members to *invest* outside the cooperative system. This statement is true, of course, only of the membership as a whole. Many cooperatives were net debtors on a long-term basis.

Figure 7 pursues this point using the records of the Köln Central. The figure groups cooperatives into credit cooperatives and other types of cooperatives, and produces the net lending figure separately for each group of members and for all member cooperatives together.⁴⁰ A major role played by this Central was taking excess deposits from *credit* cooperatives and lending those funds to *non-credit* cooperatives. The Köln Central did not so much provide a conduit to or from the larger capital market or “balance” funds among cooperatives of the same type as provide a mechanism for one kind of cooperative to lend to another. This is an important and surprising finding. Several sources note that the problem of balancing is not so much seasonal as caused by the fact that some cooperatives have excess deposits while others have excess demand for loans. But none, to my knowledge, clearly recognized the pattern noted in the figure.⁴¹ The fact that credit cooperatives lent to non-credit cooperatives via the Central does not imply that credit cooperatives were not also lending to one another. Using a random sample of the Köln Central’s credit cooperative members, I was able to show that in 1897 about 40

⁴⁰ The figure requires an assumption: all fixed-term lending to and fixed-term borrowing from the Central is undertaken by credit cooperatives. Unfortunately the source does not distinguish these activities by type of cooperative. But the amounts involved are small.

⁴¹ As we noted above, the relative weights of credit and non-credit cooperatives in a Central varied greatly. For statements about chronic excess deposits and Centrals, see, for example, Kraus (1876, p.24 note 1), or Reichsverband (1897, pp.102-3).

percent were net debtors to the Central (N=58). The figure fluctuated over time; in 1903, 60 percent were net debtors. This is the highest such figure for the pre-1914 period.⁴²

The example of another Central cautions against over-generalizing on this issue, however. The information available for the Central in Darmstadt is much less detailed, but contains the basics needed to see whether the story told in Figure 7 was true for that Central, as well. In 1889 the story for this Central is the same as in Köln: credit cooperatives lent to the Central most of what it re-lent to other cooperatives. By 1899, however, the credit cooperatives were themselves net borrowers from the Central.⁴³

Centrals and State aid

One of the more controversial issues in the development of Centrals was the role of State assistance. Centrals in Prussia had the right to borrow directly from the *Preussenkasse*. Since the latter institution was able to provide low-cost funds in part because of its State subsidies, critics charged that such loans represented a gift from the State to cooperatives. One of the more vocal critics along these lines was Crüger, who headed the Schulze-Delitzsch organization at the turn of the twentieth century. He claimed that the reason Centrals competed for members was that this was a way for them to increase their own liability and therefore obtain larger loans from the State. (Just why they would want to do this is not stated.) More generally, "the development of Centrals is a product of State subsidy;" the *Preussenkasse* can only lend via Centrals, so cooperatives join Centrals to get on the gravy train (Crüger 1909, p.25).

⁴² This sample of credit cooperatives was drawn from the annual manuscript summaries for the Central. The sample consists of 25 percent of cooperatives that had joined before 1897, the first year the data are available, and 50 percent of cooperatives that joined between 1897 and 1903 and were still members in 1903. Since the sampling fractions differ the figures reported in the text should be weighted, but they are not. This is a valuable source for the study of how cooperatives used their Central, but was not fully useable at the time this draft was written.

⁴³ Müller (1901, p.323). The source only presents information for those two dates. Once again we must assume that only credit cooperatives borrowed or lent for fixed terms.

This harsh judgement is based on a simple truth: Centrals did borrow from the Preussenkasse, and those loans were at below-market rates.⁴⁴ But Figure 8 suggests a more nuanced view. The Köln Central actually *lent* money, on net, to the Preussenkasse in most years.⁴⁵ Only in the crisis year of 1909 did the Köln Central actually borrow from the State. Just how critical this was to the Central's well-being we explore below.

The Centrals and crises in individual cooperatives

Leaders of Centrals were much more coy about publicizing what could have been their most important function, bailing out troubled cooperatives with emergency loans. Credit cooperatives that experienced difficulties were especially well-placed to use such loans. If the institution was needed in the first place, members would be willing to persevere through difficult circumstances. And the members of unlimited liability cooperatives could not walk away from a failure, and would have even more incentive to use an emergency loan to prevent bankruptcy. Formally, most Centrals were structured such that each member cooperative had two lines of credit. One was automatic and was set according to formulas that based on size, member wealth (that is, liability in an unlimited liability cooperative), and so forth. A second line of credit could be granted at the discretion of the Central and was intended to be used for cooperatives in difficult circumstances.

Information on this activity by Centrals is scarce. But there are many anecdotes, at least, that involve a Central making a loan to a troubled cooperative. One involves a cooperative in Selters (Nassau) that lost nearly 100,000 Marks due to a treasurer's dishonesty. The auditing association prevailed upon

⁴⁴ Whether Centrals could have even borrowed at market rates, or would have had to pay an additional risk premium to a private lender, is considered in section 4 below.

⁴⁵ The *Preussenkasse* is the most important State institution at issue here, but all State institutions are included in Figure 8.

the treasurer and the management committee to repay some of the loss, but the rest was made up by a loan from the Central (Generalverband 1910, pp.11-13).

Centrals had to walk a fine line in bailing out troubled cooperatives. To the extent such loans prevented collapses, this kind of lending both justified the Central's existence and reduced embarrassing news about its members. But being too generously a lender of last resort would set up the wrong incentives among its members. These problems were mitigated to some degree by the auditors, whose job it was to head-off the problems that could require Central assistance. More difficult was the persistent fear that by propping up failing credit cooperatives, Centrals were forcing responsible cooperatives to pay for the mistakes of the irresponsible. Even the perception of such risk-sharing could lead to adverse-selection problems, with larger and more stable cooperatives refusing to join a Central for fear of being dragged down by weaker members. The *limited*-liability structure of the Central reduced the exposure, but in theory a member cooperative could lose its entire investment in the Central if the Central went broke trying to prop-up insolvent member institutions. While it is dangerous to argue from silence, the Centrals many critics were probably responsible, to some degree, for the lack of surviving evidence on this issue. Why publicize the institution's most controversial role?

3. Auditing Associations in Practice

Auditors in the cooperative associations did what auditors always do: they checked business records and certified to "outsiders" that the managers were performing correctly and reporting the enterprise's true condition to the outsiders. Outside auditors in any economic context exist to provide information about an enterprise's true condition to stockholders, depositors, the government, and other parties. Managers or other insiders may have an incentive to misrepresent an enterprise's true condition. Auditors are trusted because they pledge their reputations on the information they provide to outsiders: they can commit to providing accurate information to the public because the present value of continuing

as trusted auditors exceeds the value of bribes they might obtain by providing inaccurate information. The cooperative auditing societies worked on this principle, although they structured the relationships in distinctive ways. In section 4 below we draw explicit comparisons between the cooperative auditing associations and private auditors. The special nature of the cooperative's "outsiders" and the environment in which they operated made these auditors' jobs distinctive.

During his several-day visit to a cooperative the auditor checked financial statements, promissory notes, etc, and met with the treasurer and management committee to discuss their practices. He would then present a written report to the supervisory committee. The supervisory committee was legally required to present, at the next general meeting, both the auditor's report and any steps they had taken to remedy deficiencies noted there. Beyond that, however, the auditing association had no power to compel the cooperative's adherence to its recommendations short of expelling a lax cooperative. We can summarize the auditor's roles under several headings:

- As auditors, they played the usual role of providing information — to the cooperative's members, to the Central, and to actual and potential depositors — about the cooperative's condition. In this respect the auditing associations were similar to auditing firms today that specialize in particular lines of business.
- As teachers, the associations played an important role in instructing cooperative managers and treasurers in the basic skills necessary to their office. Instruction took place as part of the annual audits, and auditing associations held special instructional seminars to which they would invite treasurers and other local officials.
- As "crisis managers," associations often sent an auditor to work with a cooperative that was going through some special difficulty — a series of defaults, the discovery of embezzlement, etc.

The next section fleshes out these roles for the Centrals, and the following does the same for the auditing associations.

Credit cooperatives faced especially severe information problems because of two features of their design and the context in which they operated. First, their managers (and treasurers) were people of little experience and training. They were more likely than professionals to make honest mistakes, and were less able to detect fraud by one of their number. Second, propaganda by the several branches of the cooperative movement had created a peculiar sort of "brand name" problem. Cooperatives leaders had created an acute (probably exaggerated) sense of the differences between Schulze-Delitzsch and other credit cooperatives. The "brand name" to an individual cooperative was an externality: in making decisions that affected its own well-being, members of a cooperative of a given brand would not take into account the damage to all other members of that brand if the one cooperative encountered difficulties. The auditing associations existed in part to negate that externality.

Auditors and auditing

The first cooperative auditors were drawn from the corps of people who had surrounded Schulze-Delitzsch, Raiffeisen, and other leaders, and who had acted as canvassers for cooperatives.⁴⁶ Eventually the training of auditors became more formalized. In 1913 the Raiffeisen federation established a special course of instruction for auditors. The first course included 516 hours of instruction on 101 days. Topics covered included law, accounting, and banking, in addition to more specific matters such as potato-drying. The Raiffeisen federation reported that the 14 men who took this course were between 20 and 35 years of age. All had previous experience with either a cooperative or an auditing association (Generalverband 1914).

Raiffeisen auditors usually had a circuit of cooperatives and tried to visit each one every year. This did not always work out, however. In good years, such as 1913, about 75 percent of all cooperatives

⁴⁶ This section has to draw heavily on the Raiffeisen organization records because only that organization regularly discussed auditing in its annual reports. I am confident that auditing in the Haas organization was similar, based on discussions reported at annual meetings.

were audited. Part of the problem was that some cooperatives took longer than others to audit. In 1914 the Raiffeisen annual presented statistics on the average number of days required to audit a cooperative within each of its regional auditing associations. The figures range from 2.5 in Frankfurt to over 8 in Königsberg. At the former rate one person could check on 100 cooperatives in a single year; at the latter, 30 would be optimistic. Part of the difference in productivity was attributed in an earlier year to the amount of canvassing an auditor did. Apparently some still spent a significant portion of their time trying to start new cooperatives (Generalverband 1906, p.7). The Raiffeisen organization was relatively new to the Königsberg area. Productivity differences also reflect the number of credit cooperatives (which were easier to audit), and the time between audits — more recently-audited cooperatives taking less time the second time around (Generalverband 1908). The Raiffeisen federation eventually de-centralized its auditing associations so they more nearly resembled those in other parts of the cooperative movement. In 1906 they instituted a system of "super-auditors" who would re-audit selected cooperatives as a check on the original auditor. Fees differed from association to association, but the schedule reported by the Raiffeisen association in East Prussia in 1910 is typical. Each cooperative paid annual dues to the auditing association of 20 Marks plus 3 percent of its previous year's net profit. For auditing they paid 10 Marks per day plus expenses (Generalverband 1910, p.18).

Auditing associations also ran courses to train the leaders of individual cooperatives. The Raiffeisen federation claimed in 1914 that "next to auditing, the instruction of managers is the most important task of the auditing association" (p.60). The yearbook gave some details on courses offered in that year. The longest was for treasurers, lasting 4-6 days and concentrating on book-keeping. One-day courses were also offered for members of the management or supervision committee. In that year over 300 people had attended the courses. The various regional organizations that made up the Haas group had apparently started them earlier. At the 1902 annual meeting of this group, the desirability of these courses

was hotly debated. Some organizations took offense at the notion that their cooperatives were inferior because they did not run such courses (Reichsverband 1902, pp.102-8).

Problem areas for auditors

In their reports the auditors stress a number of common problems in cooperatives. The management and supervisory committees of credit cooperatives had distinct, clear-cut roles in theory. In practice it appears that in many cooperatives the supervision committee was quite weak. Those most interested in the cooperative volunteered for the management committee. Records of outside audits (both summaries published by auditing associations and the manuscript records of the study cooperatives) usually fault management committees with the worst mistakes, but often take the supervision committee to task for being lazy. Auditors often had to admonish the supervision committee to perform the simplest aspects of their jobs: to meet, to keep records of their meetings, etc. The supervisory committee rarely overturned decisions of the management committee. How to interpret this is not clear; the supervision committee might not have cared or paid attention, or the management committee might have required little second-guessing. Members of the supervision committee tended to serve for shorter periods than did members of the management committee, who were often in office (with four-year reelections) for 15-20 years.⁴⁷

The cooperative's membership as a whole was also supposed to function as an oversight body. Cooperative rules required that it hold a general meeting at least once each year. At these meetings the cooperative's books were open for inspection, the auditor's most recent report was read to the

⁴⁷ A large sample of present-day Volksbanken and Raiffeisenbanken provided me with the Festschrift they prepared on their 75th or 100th anniversary. From these accounts it is usually possible to calculate the length of service for members of the two managerial committees. In calculations not reported here I have shown that prior to World War I about 80 percent of cooperative-years witnessed *no* turnover in the management committee. For the supervision committee that figure is 50-60 percent.

membership, and some basic policy decisions, such as interest rates and the election of officers, were decided by majority vote. These meetings were well-publicized, but attendance at them varied by time and place. Of the study cooperatives, Leer's general meeting was always the best attended. In no year prior to 1914 did attendance fall below two-thirds of members, and in most years it was much better. The Limbach (Schmelz) and Hüttersdorf (Schmelz) cooperatives on the other hand had poor attendance. In 1904, the third year of its existence, Limbach could attract only 14 of 83 members to its general meeting.⁴⁸ How important was this uneven attendance at annual meetings? Auditors sometimes remarked on it, and some cooperatives tried monetary incentives to encourage attendance. A few fined members absent without reason, while others paid a small stipend to those who showed up. But attendance at the annual meeting is easy to overrate. The relevant financial information was made available for a full week after the meeting, so attendance was not strictly necessary for the membership to perform its monitoring role. Attendance could reach quite high levels in years where there was an important issue to discuss. The Hüttersdorf (Schmelz) cooperative's 1907 meeting attracted 180 out of 206 members.

The treasurers were also a source of concern. In rural cooperatives the position was distinct and part-time, and usually fell to a schoolteacher or some other educated person. The pay was not bad. In 1914 the Diestedde cooperative paid its treasurer 1200 Marks, and in 1913 the smaller Leer cooperative paid its treasurer 800 Marks. This was a significant sum for the cooperative, which often devoted half or more of its net interest income to this purpose.⁴⁹ For the treasurer the income was substantial. A

⁴⁸ Attendance is usually reported in the *Protokollbuch für der Generalversammlung* for each cooperative.

⁴⁹ Cooperative manuals often advised against paying the treasurer according to a formula that gave him an incentive to increase the number of transactions, loans, etc. Whatever the advice, cooperatives seem to have done something close to this. For the 237 cooperatives in the Münster auditing association of which Diestedde and Leer were members, a regression of the treasurer's 1893 pay on the cooperative's assets, turnover, and age explains 80 percent of the variance in the pay.

schoolteacher in Diestedde in 1905 earned about 1750 Marks from his day job.⁵⁰ Whether the pay was worth the effort is another matter. To obtain some idea of how much the treasurer worked I tabulated every transaction undertaken in the Leer cooperative in 1905. The treasurer had at least one transaction in at least 245 days that year. On Sundays he averaged 5 transactions. This was in addition to his role as minute-taker at meetings of the management committee and his duty of keeping the several account books up-to-date. He earned 400 Marks in 1905. Assume that every transaction required 30 minutes for the actual transaction and all associated book-keeping. Assume further that the treasurer spent another 90 minutes at each of the monthly management committee meetings and quarterly supervisory committee meetings. Under these assumptions his 400 Marks compensated him for 205 hours of work. Of course, this is just a guess; if the book-keeping took twice as long as we have assumed, then his income worked out to about 1 Mark per hour. Still, in a village where an agricultural laborer might earn 15 Marks per week, this was not a small amount.

Urban and rural cooperatives both experienced problems with their treasurers, however well-paid. The press focused on the more lurid incidents such as embezzlement and unwise business practices that turned out to have been for the benefit of family or associates.⁵¹ The auditing associations felt that the greater enemy was inexperience and sometimes indifference. Few rural treasurers had any business experience at all. Some cooperative manuals introduce double-entry book-keeping as if it is an unknown concept (and why should it be familiar to a primary-grade schoolteacher?).⁵² One of the auditor's first

⁵⁰ Schoolteachers' pay approximated by dividing the total income of male teachers by the number of male teachers in the *Kreis*. Source is *Preussische Statistik* Vol. 209/III Tables VII and XIII.

⁵¹ Below we discuss one embezzlement in a study cooperative.

⁵² More amusingly, in 1904 the *Landwirtschaftliches Genossenschaftsblatt* pleaded with its officials to use German words rather than their French equivalents. This was not nationalism. French substitutions were typical of government officials, academics, and other pedants of the day, and according to the request made publications difficult to understand for the "simple people" who ran the cooperatives.

tasks in examining cooperative records was to verify the arithmetic. More than a few record-books are filled with the red corrections of an auditor. And many of the treasurer's skills were more complicated than arithmetic. He had to keep the cooperative squared with the local court that registered cooperatives. As executor of loans he had to contend with the complicated business of signatories and co-signers of promissory notes, liens on land and chattels, and how to treat the assets or liabilities of deceased members. Little wonder that in rural cooperatives the treasurer could be the most difficult position to fill adequately.

Both the reports of the auditing associations and the more general cooperative press suggest that many cooperatives were not enthusiastic about the auditors. A common complaint was cost.⁵³ The complaint might have been about *annual* auditing, which was not legally required. The Raiffeisen association for Bavaria noted these complaints in 1910 and attributed them to the efforts of other auditing associations to lure away their members (Generalverband, p.9). Part of the friction must have also been the natural feeling that the auditor was sent by outsiders to criticize, implicitly at least, respected community members. Auditors were not necessarily from the same region, and might have been considerably younger than the treasurer and managers to whom they reported. Auditors also gave a great deal of advice, perhaps not always welcome. In 1910, for example, the Raiffeisen association in Thuringia complained in its annual report that its cooperatives should all have set hours for business (Generalverband, p.13). This sort of comment — which is, strictly, none of the auditing association's business — might strain the relation between individual cooperatives and their auditors. Many comments on auditing make the point that it does not endanger to the cooperative's independence, which suggests that cooperatives *thought* it did. The statutes of the Münster auditing association contain a painfully

⁵³ I have not been able to find estimates of the cost of a private auditor. But given the Central's contribution to the auditing association and the State subsidy enjoyed by some such bodies, it seems unlikely that on a per-diem basis the association auditor would be more expensive. It is possible, however, that association auditors took more time and were therefore more expensive.

detailed statement that auditing does not make the association liable for the cooperative's debts or vice-versa.⁵⁴

Auditors and crises in individual cooperatives

Sometimes the auditors found extreme versions of the laxness they feared. This problem was uncovered by a 1909 audit of a cooperative in Miel, near Rheinbach in the Prussian Rhineland. The auditor, Schwamborn, found that the books were in order, but he was not happy about the general conduct of the cooperative. Neither the management nor supervision committee had paid any attention to the cooperative. The head of the supervision committee had *died* over a year ago and had never been replaced. The auditor's report to the association brought a severe rebuke to the cooperative, in which it was ordered to concern itself with the auditor's recommendations. This episode hints at another role for auditors that was not publicized, but was probably important. In any given year a small number of cooperatives would fold, voluntarily. In 1907, for example, 102 credit cooperatives wound up business, leaving 16,092 at the end of the year (Jahr- und Adressbuch 1908, p.456, 470). Most of these cooperatives were not really in trouble, at least not yet. The Reichsverband noted that sometimes a cooperative was formed in a village too close to an existing cooperative, while in other instances an unnecessary cooperative was formed in an excess of enthusiasm (Reichsverband 1902, p.8). The Miel cooperative seems to fit into the latter category. Regular audits, complete with stern words from the association, would encourage cooperatives to shut down before lack of monitoring could give a treasurer room for embezzlement.

The annual reports of auditing associations frequently refer to embezzlements that their audits uncovered. The implicit claim is that without the audit the embezzlement would have gone undetected and have cost the cooperative even more. This is at least partly an effort at self-justification and may be

⁵⁴ Statuten der Verband landliche Genossenschaften (??) Par. 9.

related to the cost complaint. There are, however, documented instances of an auditor discovering embezzlement. What is interesting for our purposes is not just the discovery, but the role the auditor (and his association) played in trying to help the cooperative through the experience. We have already mentioned the case of Selters. Here the Central extended a loan to help the cooperative survive. But the auditing association also persuaded the dishonest parties — just how is not clear — to make good much of the loss.

The auditor also played a delicate role in resolving the consequences of an embezzlement in the Maulburg cooperative, one of the study cooperatives. At a joint meeting of the management and supervision committees in 1899, the auditor Bern reported that the late treasurer had helped himself to about 1275 Marks of the cooperative's money. The auditor recommended several steps to help cover the loss. At a general meeting the same day, the auditor reminded the membership that the management committees and current treasurer should not be held accountable. Since no member had objected to the (fraudulent) presentation of the previous year's report, they were equally responsible for the shortfall. Several days later the widow and children of the deceased treasurer signed an agreement to repay the embezzled funds.⁵⁵

An embezzlement could be dangerous both for the individual cooperative and for its association. Treasurers were a main point of contention between Schulze-Delitzsch and Raiffeisen, with the former arguing that the lack of paid managers in rural cooperatives left their treasurers too powerful. As we noted in discussing the cooperative press, an embezzlement, especially if it led to problems in solvency, was prime fodder for outside criticism. Here the auditor played an important role in limiting the damage. He first discovered the fraud. In this case the offender was dead, and so the auditor was not really preventing the embezzler from getting away with more. That would not always be the case. Second, the auditor attended a meeting and reminded a possibly angry membership that they were as much at fault

⁵⁵ *Protokollbuch für den Vorstand, Maulburg, May 1899.*

as their managers. The records say little on this, but his comments — coming from an outsider, and an official — might have helped prevent the cooperative from tearing itself apart in accusation. Finally, by helping to recover the cooperative's money he nullified the incident's financial consequences and prevented the embezzlement from leading to fears about the cooperative's safety.

Name brands and auditing associations

The auditing associations had special incentives to worry about miscreant cooperatives because of the way public disagreements had created a strong sense, in the public mind, of systematic differences between cooperatives. The situation is somewhat like a modern franchiser of fast-food restaurants who has to worry that poor hygiene at one McDonald's will worry the public that food-poisoning can be expected at any McDonald's. Canvassers for the several cooperative branches moved around Germany, encouraging people to form credit cooperatives *of their type*. German cooperatives engaged in practices that modern firms rarely employ, at least openly: through innuendo and inflating true incidents they tried to lead the public to think the worst of their competitors. Pepsi, on the other hand, claims that Coke's flaws are its inability to make one an NBA star; Pepsi does not claim that Coke will make one ill.⁵⁶ One way to make the case for my cooperative structure is to cast aspersions on the safety of others, both for membership and for depositors. Thus each branch of the cooperative movement was aware of what others were saying about it, and knew that it had to have ways to contend with the dissemination of information that, true or false, would brand all cooperatives in its group unsafe.

We do not know what canvassers actually said to an assembly of people thinking of forming a credit cooperative. A sampling of the cooperative press, however, gives the flavor of charge and counter-charge. The *Blätter für Genossenschaftswesen*, an organ of the Schulze-Delitzsch movement, often took

⁵⁶ German cooperative "advertising" was more like the rumors that have circulated about Snapple being owned by fundamentalist Christians, or Dos Equis beer including urine.

as its theme the alleged weakness of Raiffeisen-style credit cooperatives. A favored rhetorical tactic was innuendo. In 1901, for example, it ran an article claiming that several Raiffeisen cooperatives in Posen were having difficulty. The Posen branch of the Raiffeisen Central was circulating brochures soliciting deposits at the unusually high rate of 4.5 percent. "We do not wish to comment, the figures speak for themselves" (p.296). Early that same year the same periodical reported on the real case of a personal bankruptcy in Altmorschen that revealed an embarrassingly large debt to the local credit cooperative (of 600,000 Marks in outstanding personal debts, the individual in question owed an unheard-of 45,000 Marks to the credit cooperative). The article then reports on a fictional conversation in the village, in which one participant says he would never belong to an unlimited liability cooperative, and another asserts that all such credit cooperatives engage in dangerous speculation. Once again, the writer says he does not want to draw conclusions from these "facts" (p.4).

One writer claimed that opponents of the rural cooperatives tried to create confusion over the meaning of unlimited liability. According to Buchrucher (1905, p.18), critics charged that members of unlimited liability cooperative were liable not only for *that* cooperative's debts, but for the debts of all cooperatives in the same group. If opponents of unlimited-liability cooperatives could convince people of this misapprehension of the law, then publicizing isolated cases of difficulties in unlimited-liability cooperatives would be an effective propaganda technique indeed.

Advocates of paid managers (that is, advocates of Schulze-Delitzsch cooperatives) argued that having only one paid official concentrated too much power in one person's hands. If several managers were paid, that is, the treasurer would not be so powerful. To support this argument the *Blätter* recounted incidents of dishonest treasurers in rural credit cooperatives. In 1902, for example, the periodical contains three separate notices about dishonest treasurers in Raiffeisen cooperatives. One story in particular asserted that the structure of Raiffeisen cooperatives leads to this sort of problem (p.389). Raiffeisen periodicals were not above this sort of discussion. Some of the nastier attacks in *Blätter für*

Genossenschaftswesen were responses to articles published elsewhere. Even a notice of Schulze-Delitzsch's death in 1883, published in Raiffeisen's *Landwirtschaftliches Genossenschaftsblatt*, could not refrain from criticism. The article praises Schulze-Delitzsch personally, but part of the praise is back-handed. The story claims that the reason for the "many" failures of Schulze-Delitzsch credit cooperative is bad management (p.50).

Given these attacks each group also had to be on the defensive. Each cooperative groups' press seems to have carefully monitored both general publications and the publications of other cooperative presses for articles containing criticism of their own methods. For example, in 1887 a three-page article in the *Genossenschaftsblatt* responded point-by-point to criticisms leveled in a book recently published by a Dr. Glackemeyer. The book had received lengthy and approving comment in the *Blätter*. Whether the Raiffeisen organ would have worried so much about the book in the absence of this attention is unknown.

Sometimes the biggest worry was simple confusion. Many small places in German have the same name (there are dozens of *Zells*, for example), and even more have names that are easily confused. In several instances a cooperative group simply pointed out that a troubled cooperative was not one of its members. For example, in 1901 the Raiffeisen federation's *Landwirtschaftliches Genossenschaftsblatt* was at pains to note that a recently-failed credit cooperative was not Genfungen in Hesse-Kassel, a member of the Raiffeisen group, but Genfingen in Rheinhessen, which was not a member.

An especially confusing incident also came to light in 1901. A credit cooperative in Ansbach (Mittelfranken) failed. Both the Schulze-Delitzsch and Haas periodicals worried about public perceptions of this episode. The *Blätter* put the total loss at 1.25 million Marks and noted that the cooperative had no legal auditing requirement. Why point this out? Because the Ansbach cooperative had been a member of a Schulze-Delitzsch association (p.48). The Schulze-Delitzsch federation's great concern over this failure was evident. The federation's national leader (Crüger) attended a special membership meeting after

the failure was announced. The Haas periodical (*Deutsche landwirtschaftliche Genossenschaftspresse*, hereafter *Presse*) also weighed in on the subject. Their concern was understandable: the failed cooperative's name was "Agricultural Credit Association of Mittelfranken," and about one-third of its members were farmers.⁵⁷ The *Presse*, in an effort to avoid "Restlessness and misinterpretations in agricultural credit cooperative circles," devoted two long stories to explaining what they saw as the facts of the matter. In the first the writer emphasized that the cooperative was a member of a *Schulze-Delitzsch* association and that the failed loans that brought down the cooperative were not agricultural. (The largest default was a 350,000 Mark loan to a Munich coffee house!) (p.17). In the second article the *Presse* noted that the cooperative had been formed under a Bavarian law that did not entail the audits required under the Reich law of 1889.

Credit cooperatives, then, operated in an environment of considerable hostile scrutiny. Their competitors (cooperatives in other systems, primarily) seemed ready to publicize and exaggerate any real problem and to manufacture problems where they might not exist. Some of the hostility came from people opposed to cooperatives in general, but much of the atmosphere had been created by competition between the several cooperative organizations. An effective way to operate in this environment — for public opinion, probably more effective than responses in the cooperative press — was to devise an auditing system that kept individual cooperatives out of trouble.

4. Alternatives to Centrals and Auditing Associations

The argument that Centrals and Auditing associations were important to the development of the credit cooperatives implies not only that these institutions served a useful purpose, but that other institutional arrangements would not have done as well or even better. Here we briefly consider possible alternatives. This is not free-form speculation; as we have seen, a variety of institutions were tried. To

⁵⁷ *Landwirtschaftliche Kreditverein für Mittelfranken.*

be clear, arguing that Centrals and auditing associations worked better than some possible alternatives is not to say they were the best way to arrange financing for poor people in Germany. The argument is *not* that the regional organizations were the *optimal* institution. Auditing associations might have forced cooperatives to be too careful, for example.

Before discussing these possible alternatives we must briefly consider an issue not raised to this point: what incentives did the leadership and employees of Centrals and auditing associations have to ensure the survival of their member cooperatives? The answer is that they had very strong incentives to advance the goals of cooperation, especially *their branch* of cooperation. For some of the leaders of these organizations the positions were honorary, and for them the advancement or demise of their institution meant only prestige.⁵⁸ For some employees the human capital required to perform their jobs was general; a clerk can clerk for a variety of firms. Managers of Schulze-Delitzsch credit cooperatives sometimes went on to work for commercial banks, and some of these cooperatives in fact *became* banks in the early twentieth century. But others had more specific human capital and would not be able to transfer their skills easily to similar activities (such as banking). Many in the rural cooperative movement would find it difficult to transfer their skills and background to another job. The auditors especially lacked the formal certification required to be an auditor anywhere but in a cooperative auditing association. For these people the advance of career meant the advancement of the organization. In a growing organization there were more auditors and thus more super-auditors, regional leaders, and so on. In a stagnant or dying group there would be few chances for advancement.⁵⁹

⁵⁸ Although one should not underestimate the value of prestige, especially in a society such as the *Kaiserreich*, with its thirsting after titles.

⁵⁹ I have no specific information on this issue, but I find it hard to believe that auditors for one type of cooperative could be hired by an association for another type, however similar the specific tasks involved.

Alternatives to Centrals

There were two possible alternatives to Centrals: a “hands-off” relationship with one or more financial institutions, or a longer-term relationship with a bank that did not restrict its activities to cooperatives. Could either of these arrangements serve the roles of the Central, providing a safe outlet for excess deposits, dealing with seasonal variations and other threats to liquidity, acting as a development bank for cooperatives that could not attract deposits, and providing emergency loans to troubled cooperatives? Prior to the formation of Centrals, as we saw, some cooperatives would deposit excess cash with private bankers or even other cooperatives. But it is hard to see how such hands-off relationships could replace a Central. Even after the 1889 law fixed the legal problems associated with lending to a cooperative, cooperatives were, to conventional bankers, small organizations run by people without much business or banking experience. They would be happy to take deposits, of course, and a cooperative might be able to arrange for limited loans during seasons when money was tight. But how could a hands-off relationship provide extensive long-term financing or emergency loans to cooperatives? A bank would have neither the necessary information nor the incentive to provide such financing. Small wonder that the cooperatives that did not belong to a Central tended to be much larger than those that did (Table 3), and were more likely to be limited-liability cooperatives (which implies a greater preponderance of Schulze-Delitzsch cooperatives). The urban cooperatives were by design more liquid than their rural counterparts, and one suspects experienced less seasonal variation in demands. As older, more established institutions they were also less likely to want the long-term financing of a development bank.

Cooperatives that *did* need liquidity or long-term loans would have to structure a more long-term relationship with a banking institution. This is essentially what Schulze-Delitzsch had in mind when he agreed to the DGSP. This bank dealt with cooperatives and other businesses alike, but the representation of cooperative leaders on its board meant that it learned about the needs of cooperatives and how to help them, and stood ready to assist cooperatives in a way that an unaffiliated bank might not. We also saw

some instances in which cooperatives had long-term relationships with private bankers. These relationships involved provision for lending to or borrowing from the cooperative and probably mimicked the services offered by the DGSP. We know too little about the DGSP's detailed operations or for that matter of the relationships between cooperatives and private bankers. But one can imagine that cooperatives made for difficult customers. They were small and often isolated, making it difficult to acquire information on them. Because their methods and aims were so different from a bankers' (in opposing long-term loans, Schulze-Delitzsch was just echoing nineteenth-century banking orthodoxy), it would take a banker with specific experience with cooperatives to ascertain a potential borrower's soundness. And in many ways what the cooperatives needed from a bank was precisely what banks did not want in customers. Kraus (1876, p.24, note 1) argued that private lenders did not like cooperatives as lenders not because the latter were unsafe, but because the cooperatives retired loans quickly and unpredictably.

The Centrals were distinctive banking institutions in several ways that made them better able to contend with the cooperatives' problems:

- Centrals had an even greater commitment to the cooperative movement than the DGSP. One of the desirable features of Schulze-Delitzsch's bank was that it was by necessity committed to the health of his cooperatives; even with its other businesses, the DGSP could not let cooperatives fail without suffering for it. Centrals were even more specialized: they existed *only* to assist the cooperatives in an area. Suppose a severe economic crisis endangered all of the cooperatives in a given region. A commercial bank independent of the cooperative movement would be more likely than the DGSP to simply write-off any bad loans and cut its losses. The DGSP, too, might decide that the risks of assistance were too great. A Central could hardly do that — if its cooperatives failed, then it would go out of business.

- Centrals were owned and controlled entirely by their member cooperatives. This meant the institution would never fall under the control of those whose interests were different from those of the cooperatives, always a possibility even with the DGSP. Central advocates sometimes claimed that no other institution could accept cooperative deposits and give a meaningful guarantee of safety. On its face a claim like this sounds silly — how could a small Central be safer than a massive institution like the Deutsche Bank? — but the point is that Centrals were controlled by agents (cooperatives) with very similar preferences. They *wanted* an institution that would choose a portfolio with a lower return and minimal risk, and in running their own bank they got it.

- Centrals allowed credit cooperative to support other parts of the cooperative movement but do so at a minimum of risk to their own position. Suppose members of a credit cooperative wanted to assist a cooperative of another type, for example, a cooperative creamery. The two cooperatives could be a single institution, as in the Raiffeisen group, or the credit cooperative could make a direct loan to the creamery, as also occurred in some instances. But the former practiced often caused trouble in the Raiffeisen group, primarily because the cooperative ended up with too much of its assets tied up in a single investment, the creamery. And a direct loan from one cooperative to another caused the same problems. By depositing money at a Central, on the other hand, a cooperative was in effect investing in a portfolio of *all* cooperatives in a region. Thus the credit cooperatives in the Köln Central could assist the non-credit cooperatives, as we saw, without sacrificing their own diversification.

Because of their structure membership in a Central offered benefits that even a long-term banking relationship could not produce.

What role did the *Preussenkasse* play in this system? The judgement of some critics was that Centrals only existed because they were the only conduit for low-cost loans from the State. There is some

truth to this statement. Centrals such as Stettin (Figure 6) attracted few deposits in their early years, and their ability to act as a development bank depended heavily on the availability of a lender willing to make long-term loans to a new institution. The important issue here is probably not cost: the *Preussenkasse's* distinctive feature was not its lower interest rates, but its willingness to make such loans at all.⁶⁰ Note, however, that after a few years even the Stettin Central was relying primarily on its own deposits. We saw that the Köln Central only borrowed from the State once, during the financial panic of 1909 (Figure 8). This is speculation, but it is hard to imagine that an institution as solidly capitalized as the Köln Central could not arrange financing from a private bank if need be. Here the *Preussenkasse* was just charging a lower interest rate. Thus the *Preussenkasse's* role was most important in allowing Centrals to form and act as development banks in areas without long-standing cooperative movements. Thus the Prussian government's assistance meant a larger Centrals system and more cooperatives overall. But it came long after the formation of several Centrals, and seems hardly crucial to their subsequent development.

Alternatives to auditing associations

The only alternative to belonging to an auditing association was hiring a private auditor every other year. As noted above, we have not been able to find any estimates of how much more or less expensive private auditors might have been. Our guess is that the association cost less per audit, but the greater frequency of audits might have pushed the cost higher than a private auditor's.⁶¹ Cost aside, what did an association offer that a private auditor could not? For many cooperatives, belonging to the auditing association was the cost of using the Central. For these the relationship with the auditing association was

⁶⁰ That is, in private markets a Central such as Stettin would be rationed out of loans at all.

⁶¹ Several people have suggested to me that private auditors might have been willing to perform cooperative audits for free, as a way of enhancing their own status in the community.

coercive, in the sense that they might have chosen to belong to the Central only, if that had been an option. (That is, perhaps the benefits of Central membership were great enough to offset the negative aspects of the auditing association.) But many cooperatives, especially in the Schulze-Delitzsch group, belonged to an auditing association without having any connection to a Central. What were the benefits?

- Since cooperative auditors spent their careers dealing with very similar institutions, they built up a body of useful expertise specific to cooperatives. A private auditor would be unlikely to spend much of his time working for cooperatives, especially in rural areas.
- Auditing associations had different incentives to keep their members healthy. For a private auditor, the failure of a cooperative he had recently audited would be bad for his reputation, but with a hands-off relationship he would not be held completely at fault. For auditing associations, on the other hand, the failure of a single member cooperative under unseemly circumstances could endanger efforts to canvass for new cooperatives and could cause defections to other cooperative groups.
- The positive side of the “brand name” issue meant that if a cooperative associated itself with an association that had a positive image, a clean bill of health from the auditor would mean more than a comparable investigation by a private auditor.

As with the Centrals, the relationship with an auditing association boils down to commitment. The auditing association *had* to take a greater interest in the cooperative’s behavior. They were trying to internalize the externality caused by the name brand identification. Cooperatives might not have liked it, either because of the costs of auditing or because the auditors prevented them from doing things they wanted to do. But auditing associations were more likely to keep cooperatives out of trouble.

5. Conclusion: Centrals and Auditing Associations as Producers of Confidence

Centrals and auditing associations together overcame the limitations inherent in the design of an individual credit cooperative. Alone, the Central provided the cooperative with liquidity and allowed cooperatives to make loans before they had sufficient deposits to use as capital. The auditing society provided low-cost, specialized instruction and auditing services that enabled the non-professional or semi-professional cooperative staff to run a well-managed enterprise.

One could reasonably argue that neither of these functions necessarily required specialized cooperative institutions. For some cooperatives this was evidently true: they belonged to no Central, and some even relied on private auditors rather than belonging to an auditing association. But for many cooperatives the regional associations offered an efficient way to overcome problems inherent in cooperative design. By binding itself to this regional grouping of Central and auditing association, a cooperative received something good (in the form of credit, and low-cost audits) in return for accepting the discipline of the larger institution. The Central and auditing association for their part acted like a regulator, keeping cooperatives out of trouble. The public for its part could see in this arrangement a system that allowed the cooperatives to capitalize on the benefits of their small size and local basis, while overcoming to a large extent the weaknesses implicit in those features.

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Table 1

Bank Liabilities and Number of Banks by Type of Institution,
Germany, 1913

Type of Institution	Number of Institutions	Percentage of all liabilities issue by these institutions
Great Banks (<i>Kreditbanken</i>) (a)	320	24.74
Mortgage banks	40	17.55
Public land banks (<i>Oeffentlich-rechtliche Bodenkreditinstitute</i>)	(c)	9.84
Savings banks (<i>Sparkassen</i>)	3,133	30.01
Post Office	N.A.	0.35
All credit cooperatives (b)	19,347	8.24
Rural credit cooperatives only	18,337	4.68
Schulze-Delitzsch credit cooperatives only	963	2.56
Cooperative "Centrals"	47	1.04

Total liabilities of institutions included: 65,615 Million Marks

Source: Deutsche Bundesbank (1976:DI Tables 1.01-2.01]

- Notes: (a) Excludes note issue.
 (b) Excludes regional banks.
 (c) Data not reported.

Figures exclude liabilities of private bankers. Wixforth and Ziegler (1994, Table 2) estimate that private bankers account for 5 percent of all banking liabilities in 1913.

Table 2

Summary of Differences Among the Three Main Groups of Credit Cooperatives in Germany

Feature	Branch		
	Schulze-Delitzsch	Raiffeisen	Haas
Location of cooperatives	Urban	Rural/small town	Rural/small town
Area from which members drawn	City or portion of city	Strictly limited to small area	Generally limited to small area
Liability structure	No rule; recommends limited liability (after 1889) and by 1914, many limited liability	Must be unlimited liability	No rule; but most unlimited liability
Paid officials	Managers and treasurer may be paid	Only treasurer paid	Usually only treasurer paid
Dividends paid on shares?	Yes	No	Generally not
Involvement with non-credit activities (e.g. marketing)	Forbidden	Permitted	Discouraged, but no rule; often credit cooperative has non-credit cooperative as member
Type of loans made	Short-term, with renewals	Long-term	Long-term
Involvement with Central	Has own commercial bank, later bought by Dresdner bank instead	Strongly encouraged; one Raiffeisen Central for Germany	Strongly encouraged; multiple, regional Centrals
Involvement with Auditing Association	Usually	Usually	Usually

Table 3

Cooperative Membership in Centrals, 1904
Credit Cooperatives Only

Measure	Unlimited-liability cooperatives		Limited-liability cooperatives	
	Belonged to a Central	Did not belong to a Central	Belonged to a Central	Did not belong to a Central
Percentage of Cooperatives	85	15	69	31
Percentage of members	65	35	33	67
Mean number of members	105	328	99	450
Mean liability per cooperative member	NA	NA	950	688

Source: Mitteilung 1905 (??)

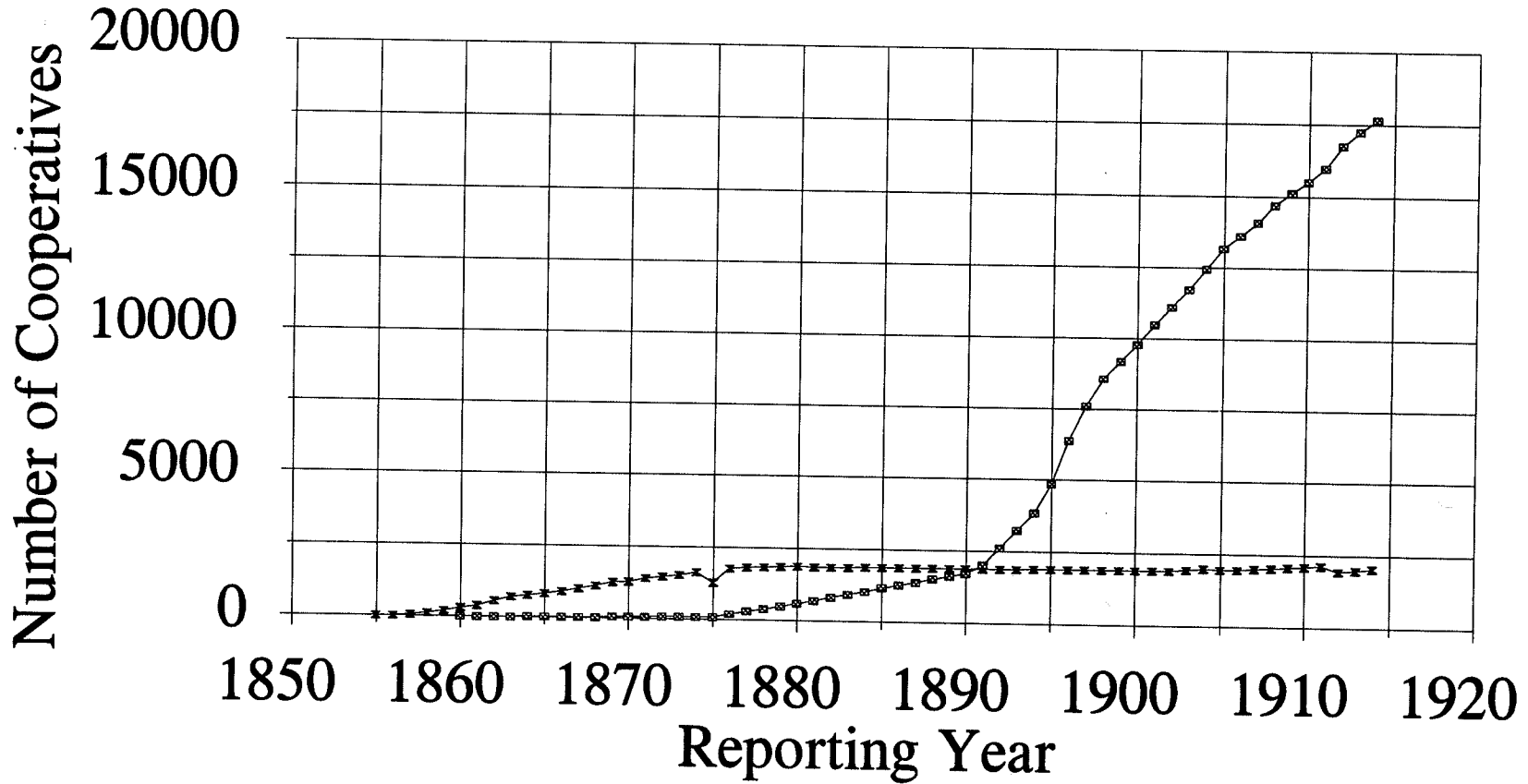
Notes: Figures pertain to Prussia plus minor states; Bavaria, Baden, and some other smaller regions did not report data.

Table 4			
Characteristics of Selected Centrals in the Haas federation, 1900			
Name/Place	Darmstadt	Munich	Posen
Year founded	1883	1893	1895
Number of Members			
All	528	1655	323
Percent that are credit cooperatives	65	99	80
Assets			
Total	4649	11977	3642
Percent of assets that are current-account loans to cooperatives	57	72	93
Liabilities			
Total	4580	11889	3607
Percent of liabilities that are deposits by cooperatives	61	91	14
Percent of liabilities that are debts to banks	1	2	70
<i>Source:</i> Reichsverband yearbook. Money figures in thousands of Marks.			

Figure 1

Growth of Credit Coops, 1850-1914

Approximate Numbers of Coops



—*— Urban —□— Rural

Figure 2

Locator Map for the Cooperatives

(Current Borders of Germany)

Cooperative Locations Underlined

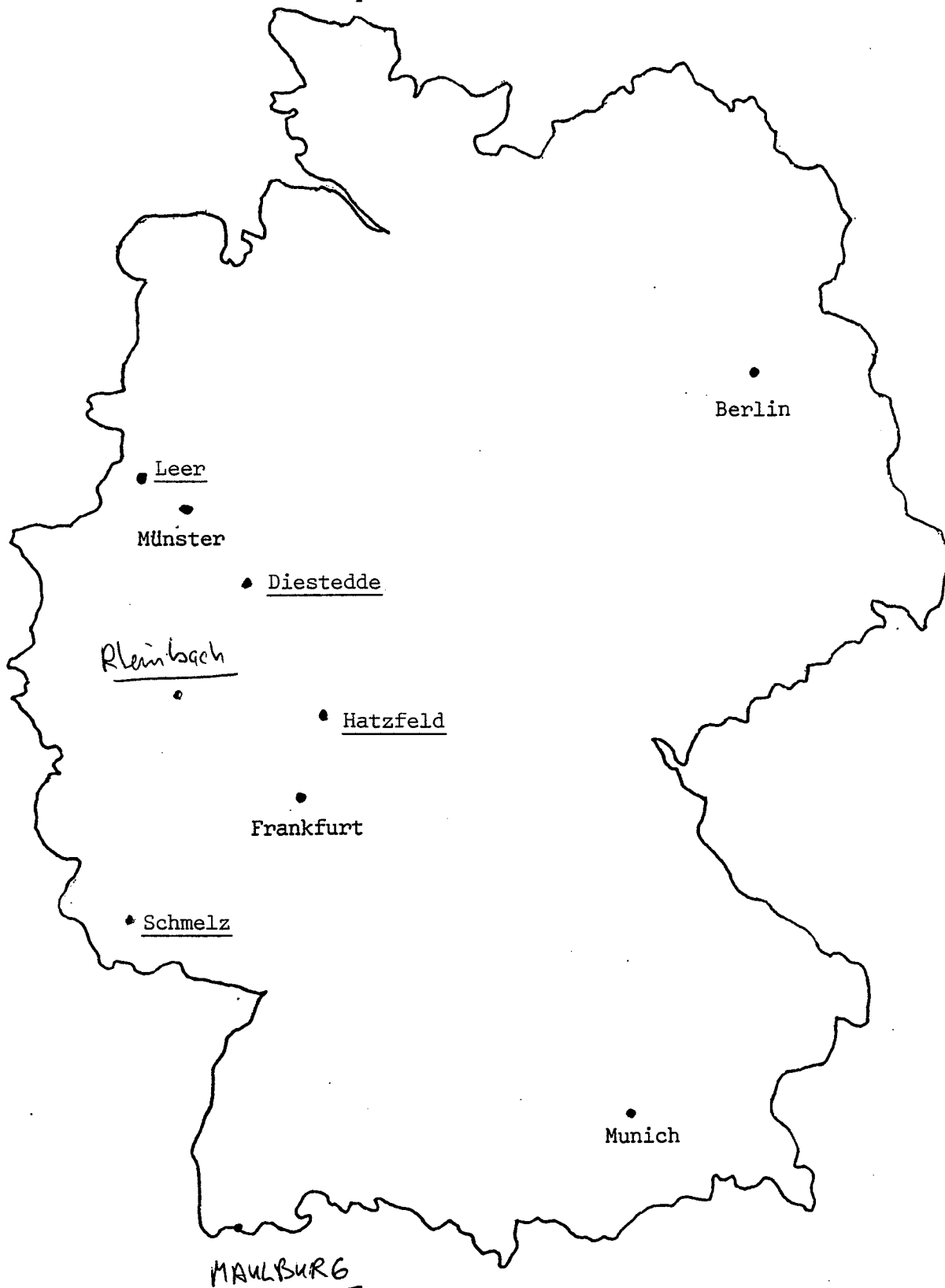


Figure 3

Cooperative's Assets at Central

Selected Study Cooperatives

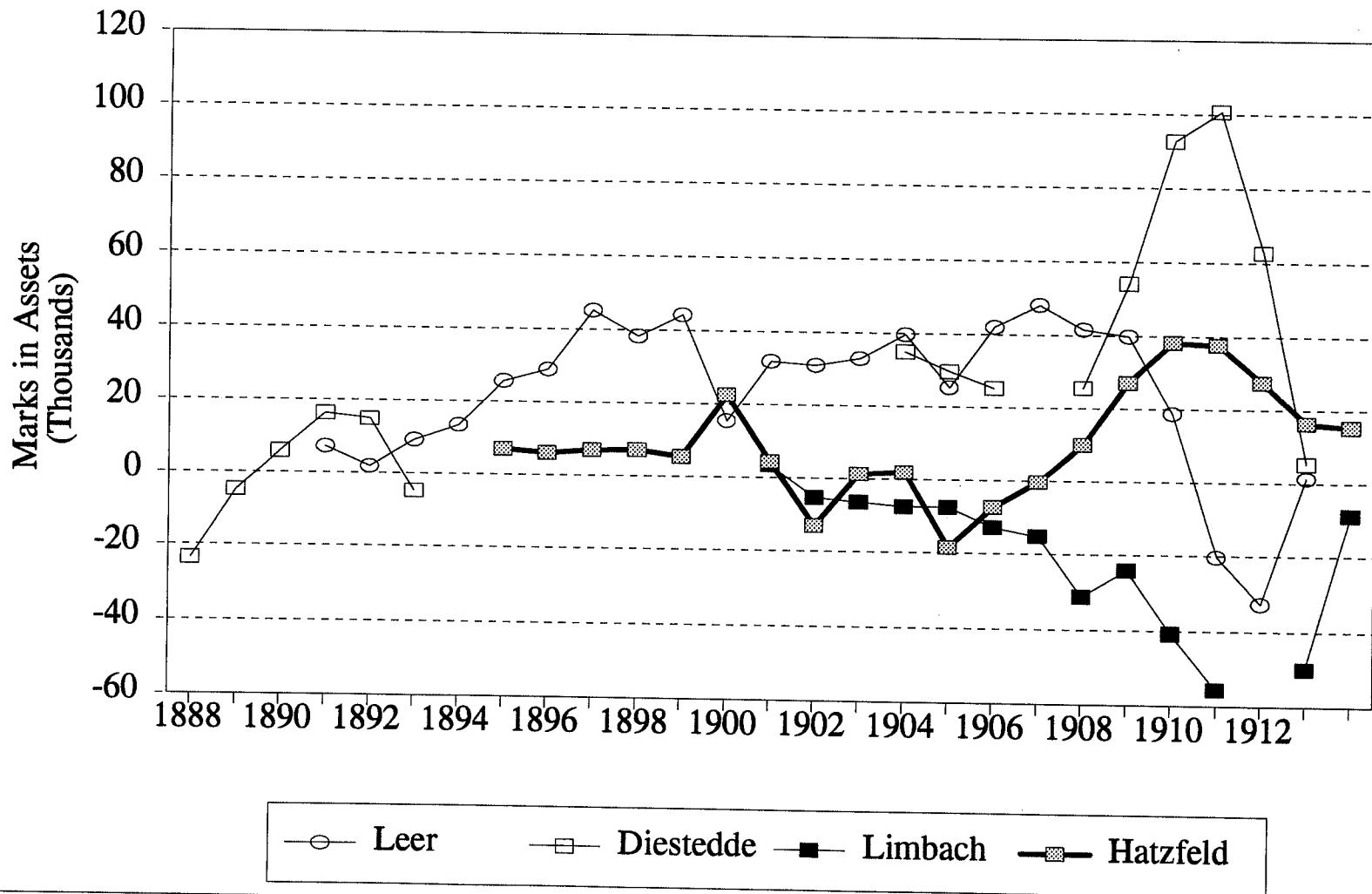


Figure 4

Seasonality of net inflows, Leer cooperative, 1891-1908
 Regression coefficients relative to November

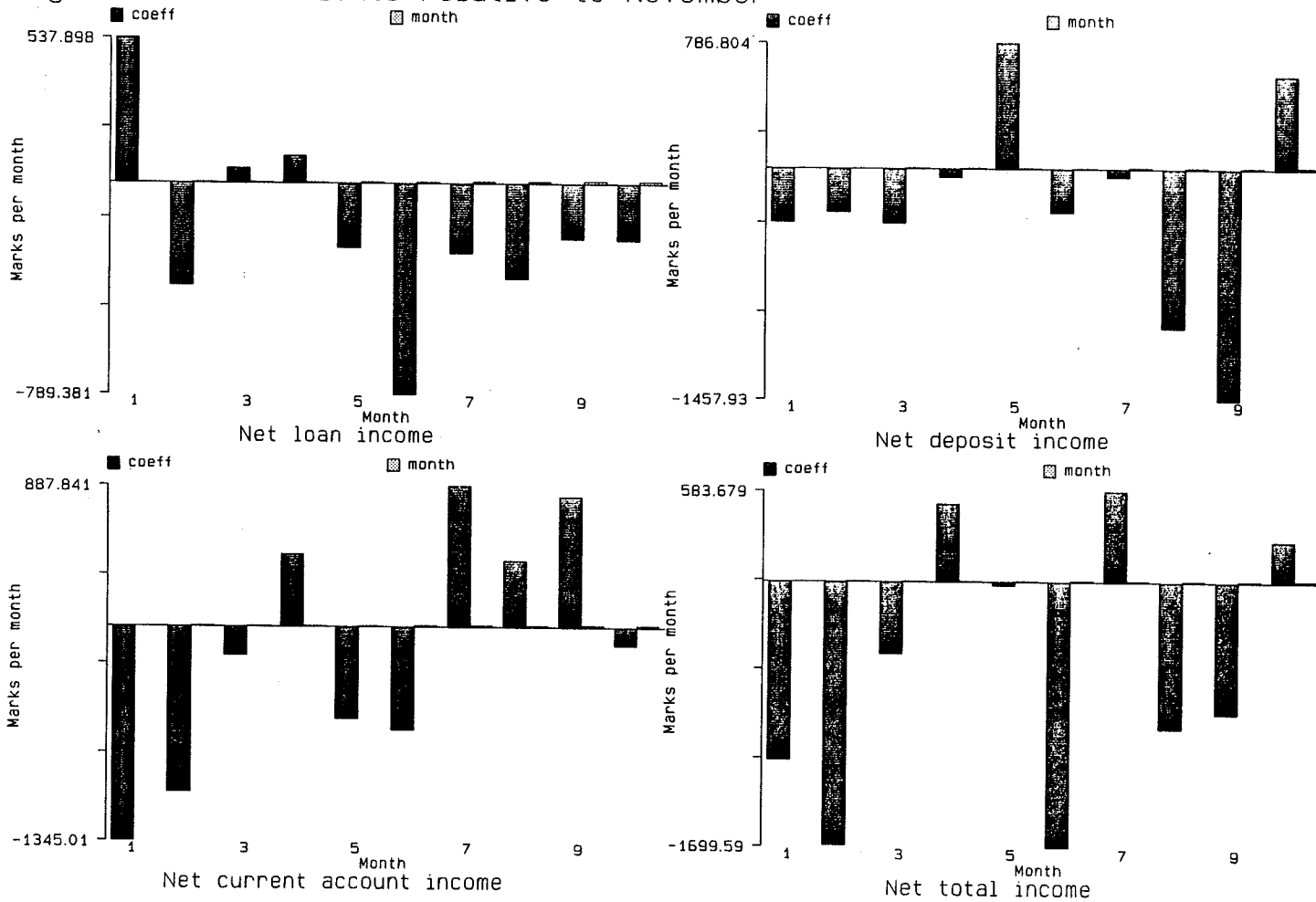


Figure 5

Seasonality of net inflows, Aussen (Schmelz) cooperative, 1904-1914
Regression coefficients relative to November

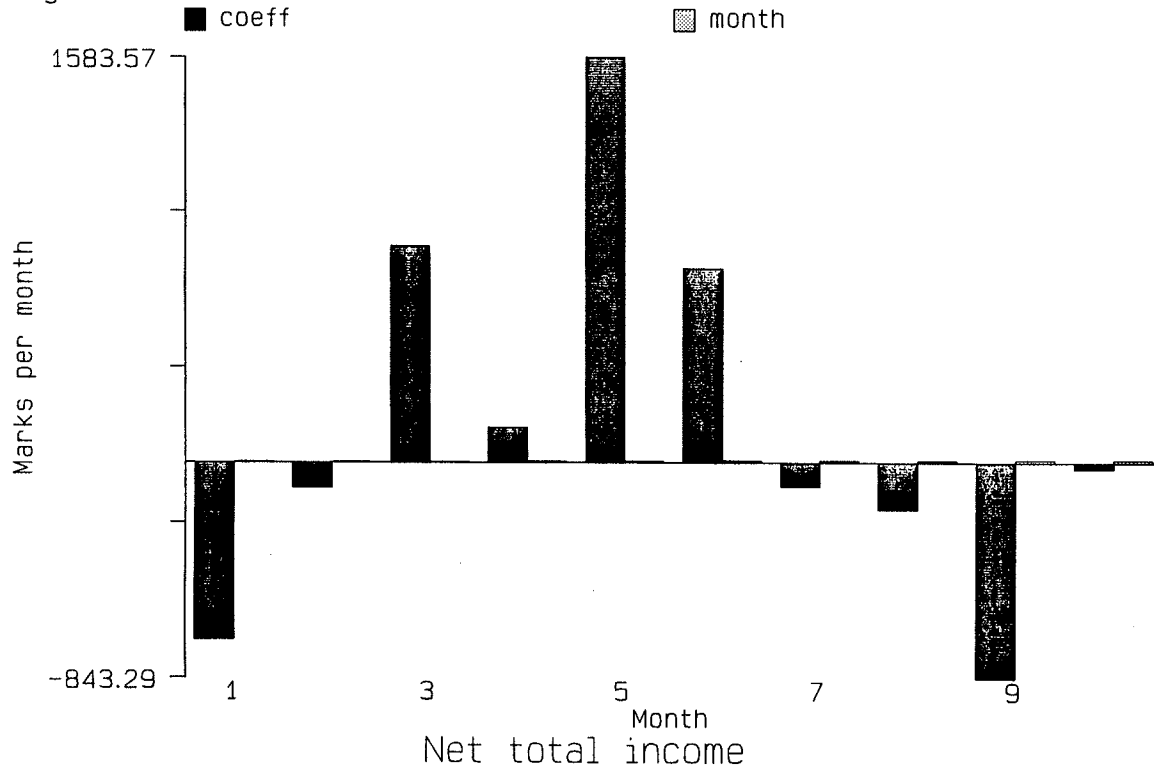


Figure 6

Centrals' Net Lending to Cooperatives Scaled by Assets

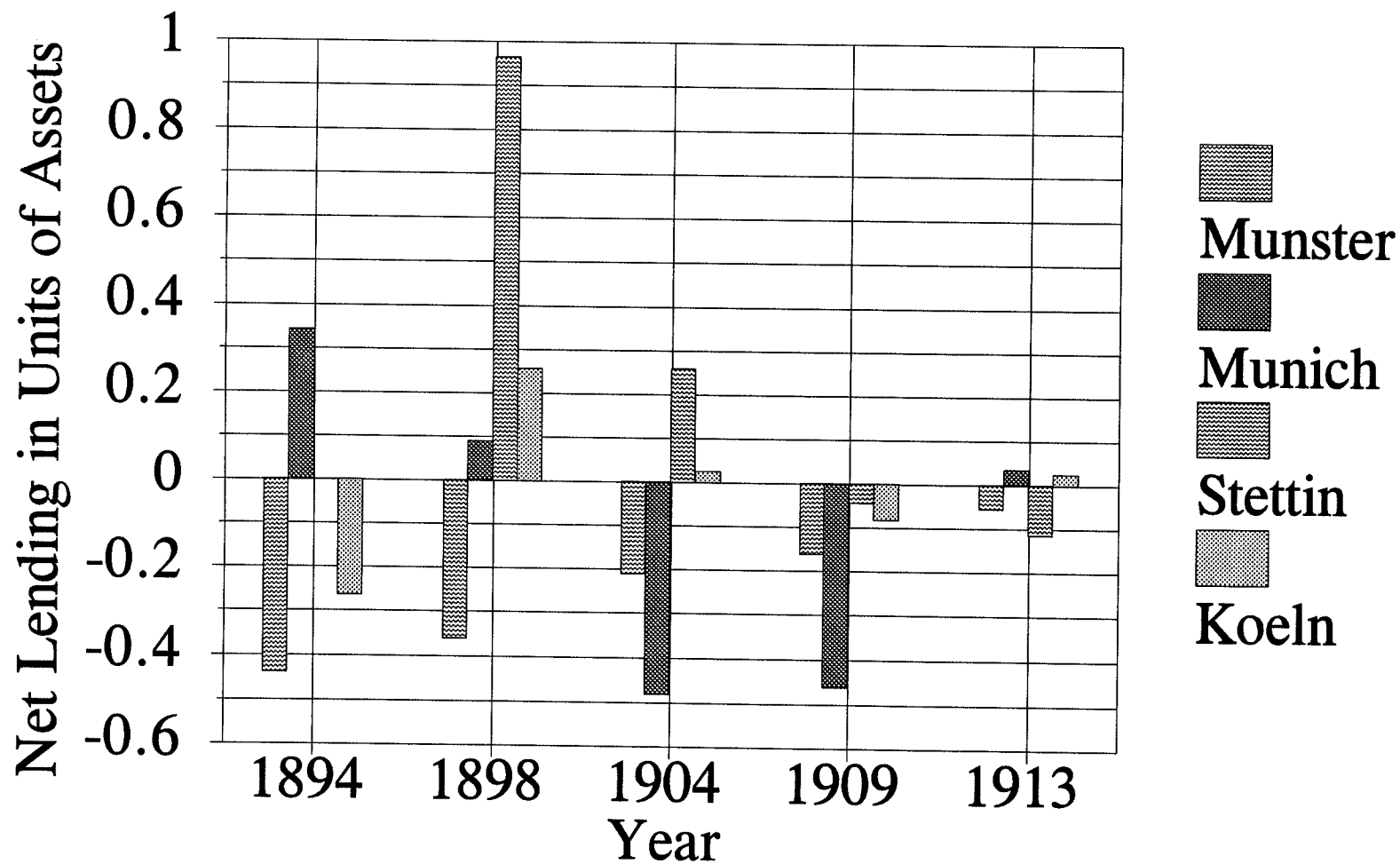
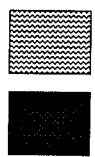
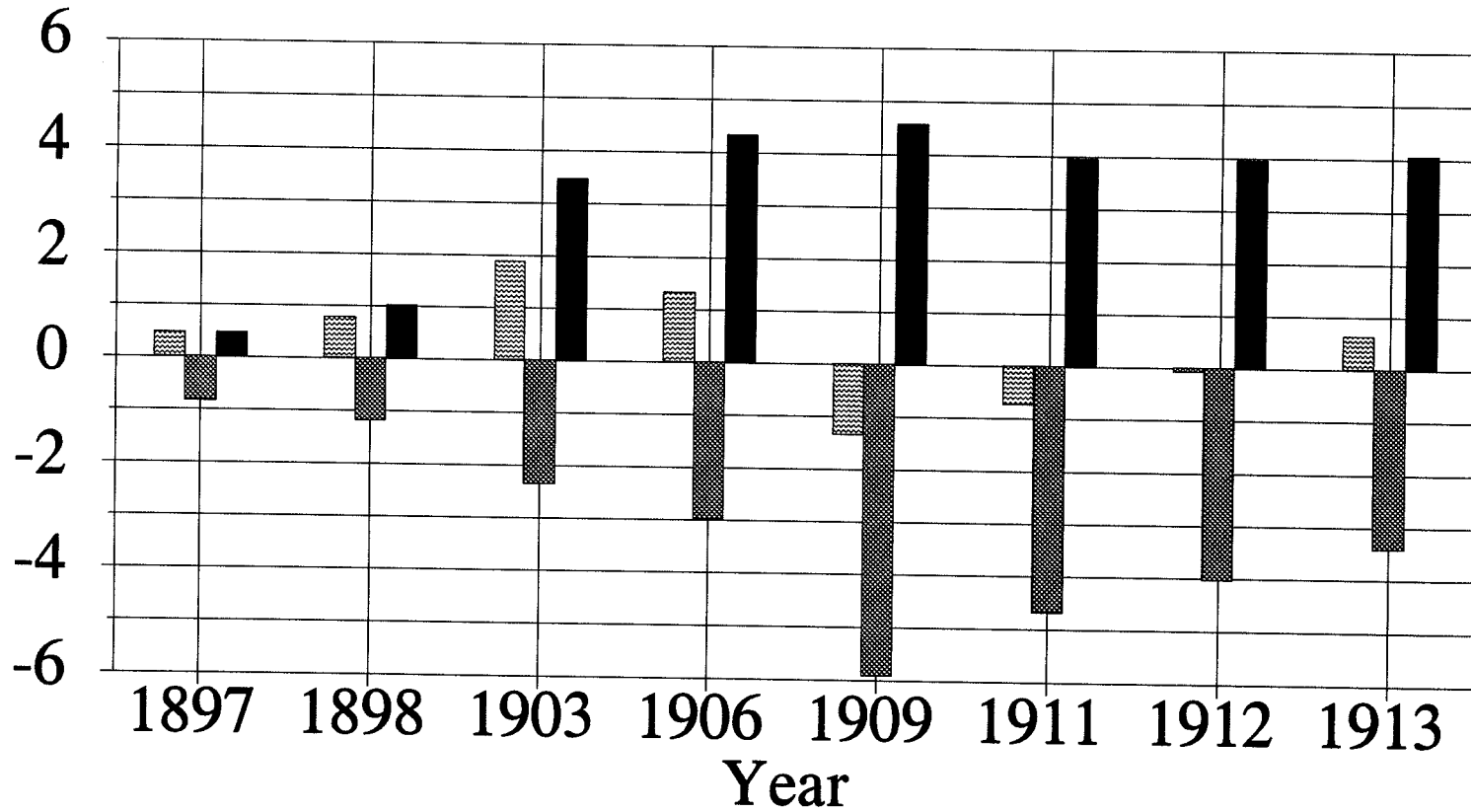


Figure 7

Net lending to cooperatives

Koeln Central, Selected Years

Net lending in millions of Marks



All cooperatives



Credit cooperatives



Non-credit cooperatives

Figure 8

Net Borrowing from State Sources Koeln Central, Selected Years

