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## **The Cooperative Banking System in Germany: Empirical evidence and some theory**

***Summary.** The paper first presents some empirical facts on the cooperative banking sector with a concentration on the situation in Germany. In the latter respect, we also make some comparisons with other banking groups. In the second part, the paper discusses theoretical arguments on the role of cooperative banks in a modern finance world. We find that there are some specific characteristics which have strengthened the role of cooperative banks in recent years. These also explain why the business model of cooperative banks is still working.*

***Keywords:** cooperative banks, asymmetric information, Germany*

### **1. Introduction and motivation**

Since the 19<sup>th</sup> century, the German banking system has a three-pillar structure which consists of commercial banks (big banks, regional banks, branches of foreign banks) and the large number of small savings banks and credit cooperatives or co-operative banks. The latter have a long tradition in Germany which dates back until the 1850s. They formerly existed in two forms: commercial credit cooperatives and rural credit cooperatives. Both primarily supported their members by granting credit. Today they act as universal banks (since 1974 also for non-members). Their basic task is still the provision of banking services to members without necessarily maximizing profits. This may create severe problems as nowadays the three pillars of the banking system are competitors in almost all market segments.

Nevertheless, the business model of cooperative banks – which may be characterized between market and hierarchy – still seems to work. This is especially true after the financial market crises 2007/8. Against the background of the institutional peculiarities of credit cooperatives (despite similarities with other banks) this comes as no surprise. We will come back to this issue in section 3.

The paper is structured as follows. Section 2 presents some empirical facts on credit cooperatives in Germany. Theoretical arguments on their success related to some of their special features are discussed in section 3. Section 4 concludes and summarizes.

## 2. Empirical evidence

Table 1, taken from Deutsche Bundesbank<sup>1</sup> compares credit cooperatives in Germany with other banks with respect to the number of institutions, branches and employees. At the end of 2010, there were 1,920 legally independent banks in Germany with 36,463 branches and 641,450 employees. Nearly 60% of all banks (1,141) were organized in the form of cooperative banks. After the savings banks, they had the second highest number of branches (12,144) with about 25% of total banking staff working there (158,200). The number of credit cooperatives fell by almost 50% between 1994 and 2010, from 2,166 to 1,141. This consolidation process was less pronounced at the savings banks, where the number of institutions dropped by only 35%, from 657 in 1994 to 429 in 2010.<sup>2</sup> In 2010 the credit cooperatives had 16.7 million members.

Figure 1 illustrates that the **refinancing** sources of big banks are quite different to savings and cooperative banks in Germany<sup>3</sup>. From 1990 to 2007, deposits from non-banks lost their role as the most important source of funding for the big banks, while the importance of interbank deposits increased. Since 2001, both refinancing sources have contributed roughly one third to the total refinancing volume. Over the same period, big banks also stepped up their use of the repo market, while there was no significant change in the use of debt securities. For the German Landesbanken, debt securities were substituted as the most important source of refinancing by interbank deposits. In the years before the financial market crisis,

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<sup>1</sup> Deutsche Bundesbank, *The Performance of German Credit Institutions in 2010*, Monthly Report September 2011, p. 25.

<sup>2</sup> A historical comparison of credit cooperatives with savings banks in Germany may be found in H. Pohl, *Savings Banks and Credit Cooperatives in Germany: Competitors in the Same Markets for 150 Years?*, “The Journal of European Economic History” 2008, No. 37.

<sup>3</sup> Deutsche Bundesbank, *Liquidity Risk Management at Credit Institutions*, Monthly Report September 2008.

the share of deposits from banks increased while that of debt securities decreased. Repo transactions play only a negligible role for them and have hardly changed in importance since the 1990s. Unlike the big banks and the Landesbanken, savings banks and credit cooperatives are still primarily funded by deposits from nonbanks. Even if their importance has diminished over time, they still amount to over 60% of refinancing. By contrast, debt securities and repo transactions have only a secondary role to play, if any. The role of interbank deposits has also declined since the 2000s. At the end of 2007, their share was less than 20%.

Table 1. Structural data on German banks

Category of banks	Number of institutions			Number of branches			Number of employees		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
All categories of banks	1,970	1,935	1,920	37,659	36,927	36,463	657,850	646,650	641,450
Commercial banks	283	295	300	11,277	10,936	10,826	18,400	181,900	179,000
Big banks	5	5	4	8,536	8,213	8,132	—	—	—
Regional banks	173	176	180	2,656	2,620	2,583	—	—	—
Branches of foreign banks	105	114	116	85	103	111	—	—	—
Landesbanken	01	10	10	482	475	471	39,250	38,750	37,700
Savings banks	438	431	429	13,457	13,266	13,025	251,400	249,600	248,150
Regional institutions of credit cooperatives	2	2	2	12	11	11	5,100	5,000	4,900
Credit cooperatives	1,199	1,160	1,141	12,344	12,144	12,046	159,250	158,300	158,200
Mortgage banks	19	18	18	56	65	54	—	—	—
Special purpose banks	19	19	20	31	30	30	13,450	13,100	13,500
<i>Memo item</i> Building and loan associations	125	24	23	1,872	1,924	1,686	16,400	15,700	15,400

Source: Deutsche Bundesbank, *The Performance of German Credit Institutions in 2010*, Monthly Report September 2011, p. 25.

Overall, market-based refinancing sources are of much greater significance to big banks and Landesbanken than to savings banks and credit cooperatives. The liquidity of the relevant markets and thus market liquidity risk is therefore likely to have a much lesser impact on the refinancing activities of savings banks and credit cooperatives. This explains why these two categories of banks were much less hit by the financial market crises since 2007 than other banking groups.

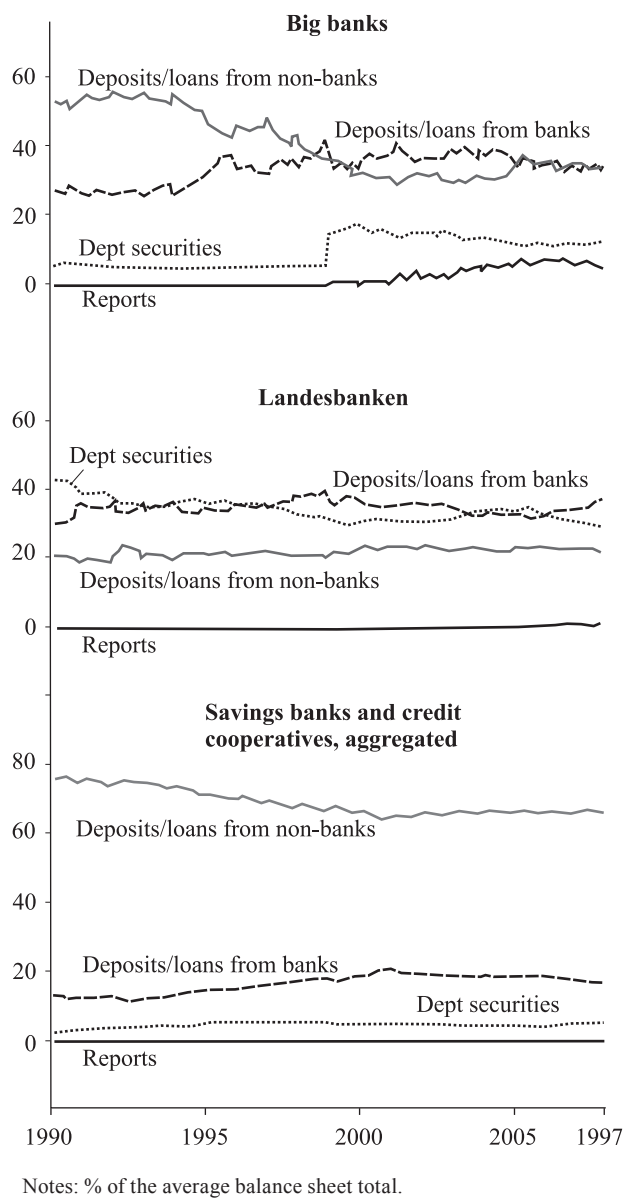


Figure 1. Refinancing sources of banks in Germany

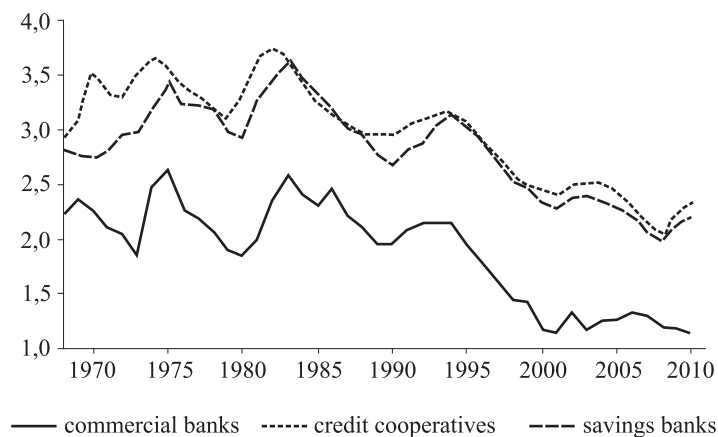
Source: Deutsche Bundesbank, *Liquidity Risk Management at Credit Institutions*, Monthly Report September 2008., p. 59.

Another interesting aspect in this direction is **deposit insurance**. In Germany, there is an insurance by law of up to € 100,000 per person. Additionally, there is insurance on a voluntary basis by banks which is specified as a percentage of bank equity. In general, insurance coverage comprises overnight deposits, savings deposits, term deposits and bank savings bonds. Not included are bearer bank bonds and bank certificates. However, there is one exception to this rule which refers to savings and cooperative banks: In their cases, bearer bank bonds and bank certificates are also insured as the goal of insurance is guarantee of the institution.

A further important regulatory issue is the definition of **regulatory capital** in the new Basle III accord. In this accord it is specified that the capital of credit cooperatives satisfies common equity component only if

- a) it has the same quality as common shares as regards loss absorption and
- b) does not possess features which could cause the condition of the bank to be weakened as a going concern during periods of market stress.

This has important consequences for withdrawals of member contributions in case of distress.



Note: in % of the average balance sheet total.

Figure 2. Interest margin of German banks

Source: Deutsche Bundesbank.

Let us now turn to the **profitability** situation. Figures 2-4 summarize different facets in this respect. We concentrate our comparison on the evolution of different performance measures for commercial banks, savings banks and cooperative banks over time.

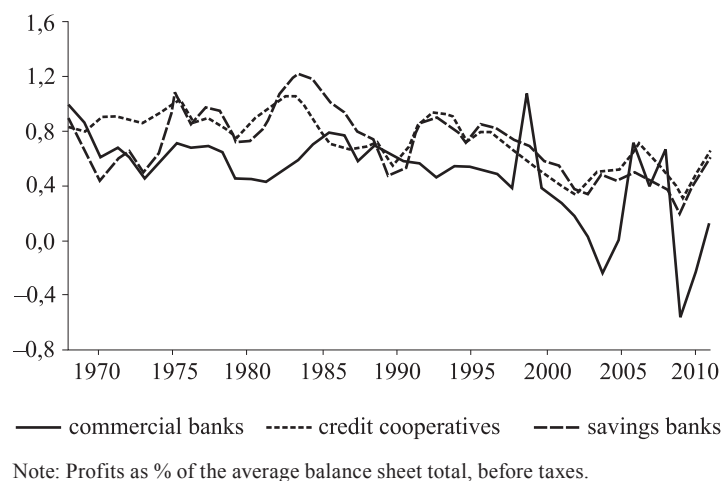


Figure 3. Profits of German banks

Source: Deutsche Bundesbank.

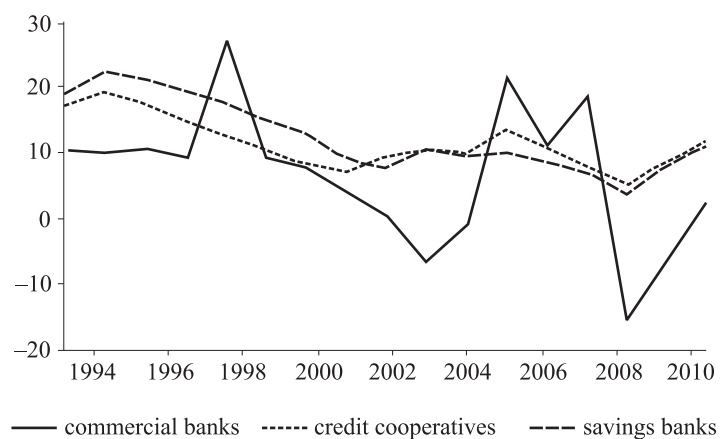


Figure 4. Return on equity of German banks

Source: Deutsche Bundesbank.

Figure 2 shows the interest margin, calculated as net interest received in relation to the average balance sheet total, since the end of the 1960s. Since the beginning of the 1980s the interest margin is on a downward trend for all banking groups considered. The most profitable interest business, however, accrues in cooperative and savings banks. In contrast to commercial banks, it increased since the outbreak of the financial market crises in 2007.

As regards profits (before taxes), figure 3 illustrates both the more stable and generally higher profit share (in relation to the average balance sheet total) of cooperative and savings banks compared to commercial banks. The means are 0.73, 0.71 and 0.49, the standard deviations are 0.20, 0.24 and 0.32, respectively. Especially evident are the fluctuations of commercial banks' profits before, during and after the financial market crises of 2007/8. Figure 4 on the return on equity (roe) shows a similar picture. On average, roe is lowest for the commercial banks. Over the whole sample from 1994 to 2010 the average roe for commercial banks is 7.05%, for savings banks 12.78 % and for cooperative banks 11.73 %. It is only in extremely booming financial market phases that roe of commercial banks exceeds that of the other banking groups.

The general impression that emerges from these considerations is that the many small cooperative and savings banks are the most profitable and also the more stable banking sectors in Germany.

### 3. Theoretical aspects

Due to institutional peculiarities of cooperative banks (see below), it is quite natural to start a theoretical analysis of them with the New Institutional Economics. This discipline offers two approaches to explain the existence of institutions which both are based on transaction costs.<sup>4</sup> The first is the **principal-agent theory**. It assumes asymmetric information (adverse selection, moral hazard) and tries to find solutions to overcome the problems inherent in this asymmetry in the sense of reducing agency costs. The second is the so-called **governance-cost theory** which presupposes the impossibility of concluding complete contracts. The incompleteness generates opportunistic behaviour, especially in the case of factor specificities.

The existence of asymmetric information and incomplete contracts generates incentives to find solutions to reduce agency and governance costs and thus to increase efficiency. In what follows and against the background of the institutional characteristics we apply this idea to credit cooperatives as special form of cooperation.

The most important institutional peculiarities which distinguish cooperative banks from other banks are the following:

- **Regional identity and local rootedness:** Due to their area-wide presence, cooperative banks have narrow contacts to people (actual and potential custom-

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<sup>4</sup> For a more detailed analysis see U. Vollmer, *Warum gibt es (immer noch) Kreditgenossenschaften?* Eine institutionenökonomische Analyse, "Review of Economics" 2000, No. 51.

ers). Consequently, they have a comparative advantage in information gathering. To exploit this cost advantage, it is important for them to be organized in small entities. Regional identity also necessitates a bottom-up organization implying that there should be very little discretionary power of the central institutions over credit cooperatives.

- **Member support:** By law, the main objective of cooperative banks is the fostering of the members. Usually, they provide idiosyncratic information which cannot be specified in detail in contracts ex-ante. Due to member promotion, there is no exploitation of this “precarious situation”.

- **Democratic organization:** The general principle is “one person, one non-transferable vote”. Moreover, the maximum amount of shares is limited. Shares cannot be traded on secondary markets.

- **Social recognition:** Especially the membership in the supervisory bodies of credit cooperatives is done on a honorary basis. For accepting such a position, social recognition is an important incentive. Furthermore, the board members are not paid as high salaries as in private banks.

These characteristics have important implications for a comparison of commercial banks and cooperative banks. Due to local rootedness and responsibility, cooperative banks have better information on potential borrowers which lowers necessary equity capital ( $EK$ ). As will be shown below with the help of figure 5, this will lead to more credit granting to the public. Additionally, the cooperative spirit reduces the risk of exploitation by members.

Figure 5 shows the density function of equity capital of firms  $g(EK_p)$ , where  $g$  represents the share of all firms with a specific equity capital endowment. We distinguish between undercapitalized, modestly capitalized and well capitalized firms. Without banks, firms have to rely on direct market financing. In this case and due to asymmetric information problems of potential lenders, only the well capitalized firms with at least equity capital  $\bar{EK}$  will get credit.<sup>5</sup> As banks are financial intermediaries which lower transaction costs and reduce asymmetric information problems, the possibility of indirect financing via commercial banks will open the door for modestly capitalized ( $EK$ ) firms to now also get bank credit. The existence of credit cooperatives further improves the situation as in this case  $EK$ , the necessary equity capital to get credit, is lower, i.e. there will be more bank credit. Due to better information on potential borrowers, cooperative banks are able to grant credit even to those firms who would be unable to get credit from

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<sup>5</sup> See for a textbook treatment of direct and indirect financing with special emphasis on asymmetric information Mishkin (2010), ch. 8. A more modern approach within a dynamic general equilibrium model and calibration to the euro area and the US may be found in de Fiore & Uhlig (2011). They argue that information availability explain the composition of firms’ debt and differences in the financial structure between the two currency areas considered.



other intermediaries (commercial banks). Consequently,  $\underline{EK}$  for a credit cooperative lies to the left of  $\overline{EK}$  of a commercial bank in figure 5.

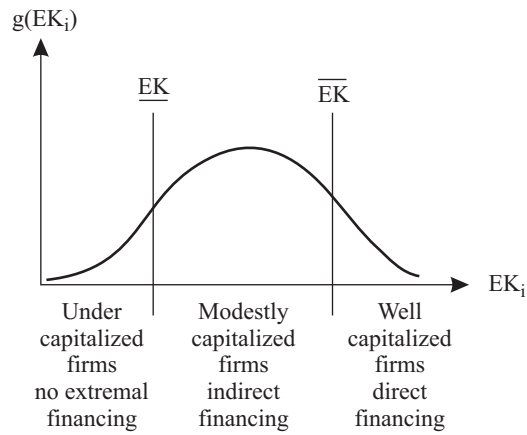


Figure 5. Equity, banks and external finance

Source: Adapted from U. Vollmer, *Warum gibt es (immer noch) Kreditgenossenschaften?* Eine institutionenökonomische Analyse, "Review of Economics" 2000, No. 51, p. 66.

However, there are also some drawbacks with the existence of cooperative banks. First, the regional rootedness leads to highly correlated risks and too little diversification. This, in turn, necessitates higher equity capital. Second, there is a trade-off between management control incentives and the size of a credit cooperative. The larger the credit cooperative, the lower the incentives for an efficient control activity as free rider behaviour may become a dominant strategy. This is the more probable as individual cooperative shares are not transferable and cannot be bundled.

#### 4. Summary and conclusion

This paper has endeavoured to rationalize the existence of cooperative banks exemplified in the case of Germany. We have seen that on average and in the long term, cooperative banks together with the savings banks are the most profitable banks in Germany. There is a potential market segment for credit cooperatives which is narrowly related to their specific institutional characteristics. These help to reduce transactions costs and asymmetric information problems. In these respects, the latest financial market crises have surely strengthened their role in

that they have gained market shares. This was supported by the fact that credit cooperatives have a regional business model and are no global players.

Cooperative banks have a comparative advantage in financing firms with low equity capital. In this market segment, there is probably only competition from the savings banks, but not from the commercial banks. In order to protect this advantage in the future, it is essential for cooperative banks to stay small, independent and locally rooted entities and not to adapt to commercial banks.

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