Kredit und Kapital, 43. Jahrgang, Heft 1, Seiten 39–63
Abhandlungen

Aspects of Payout Policy of German Savings Banks

By Volker Kleff, Bad Homburg, and Martin Weber, Mannheim

I. Introduction

The savings banks' distribution of earnings among their public owners is strongly regulated by law. By this means it should be ensured that savings banks accumulate enough money to expand their business and can fulfil regulatory capital requirements even in future years. Each federal state within Germany sets its own rules regarding the maximum payouts that savings banks may distribute among their public owners, i. e. the municipalities and districts. These rules depend on some financial ratios measuring the savings banks' capitalisation. Well capitalised savings banks according to these ratios are not forced to pay off earnings, but are free to distribute a sum between zero and the maximum amount allowed by law. At any rate, the level of payouts should be consistent with the individual financial situation of the savings bank.[1] As a consequence, it is expected that internal factors like profitability or capitalisation help explain the savings banks' payout decision within these legal boundaries.

Nevertheless, there may be some conflicting interests. Savings banks are expected to distribute profits reluctantly, since they heavily rely on retained profits to fund their desired business growth. Local authorities, however, are in need of these money transfers, since they are highly indebted and lack financial means. Therefore, the financial situation of the local authorities may be another potential determinant influencing the savings banks' payout decision. According to the federal laws, the local authorities may have some influence on the savings banks' payouts. The decision whether or to what extent the savings bank will distribute profits is usually made (except for the federal state of North-Rhine-Westphalia) by the board of directors (*Verwaltungsrat*), which represents the link between the savings banks' managers and the local authorities. Due to the special public ownership of German savings banks, usually two thirds of the members of the *Verwaltungsrat* are elected by the relevant

[1] See e. g. § 24 para. 1 of the savings banks' law of Lower Saxony.

local authorities (municipalities and districts), whereas the other members usually are employees of the savings bank.[2] Furthermore, the president of the *Verwaltungsrat* usually is the head of the local authority in which the savings bank is headquartered. Therefore, it is not implausible that the interests of the local authorities could influence the savings banks' payout decision.[3] *Sapienza* (2004), for instance, found some evidence for a politically motivated behaviour of state-owned banks in Italy. Her results suggest that the interest rates charged by the state-owned banks are significantly lower the stronger the political party in the area where the firm is borrowing.

In this study we investigate the determinants of the German savings banks' payout decision in more detail. Section II refers to the testable hypotheses. Section III presents the data used for the empirical analysis and Section IV introduces the model to validate the hypotheses. Section V presents the results, Section VI adds some further robustness checks and Section VII concludes the analysis.

II. Hypotheses

According to the laws by the federal states, the savings banks' payout should be "reasonable" and should reflect the current profitability, as well as the financial situation and the risk situation of the bank. In fact, a higher profitability may increase the financial scope of the savings bank, since it may provide excess profits after retaining enough profits for future business growth. Finally, the high relevance of profitability would also be in line with the findings from a large number of papers ranging from *Lintner* (1956) to more recent papers e. g. by *Da Silva* et al. (2002), which examine the dividend behaviour of non-financial corporations.

Proposition 1: The higher the profitability, the more likely the savings bank will distribute profits or increase its payout level.

Furthermore, savings banks with a high capital-to-asset ratio and a low level of portfolio risk might be less reliant on retained earnings in order to increase their (regulatory) capital ratio, since it is less likely for them to fall below the minimum of regulatory capital. Therefore, we ex-

[2] See *Püttner* (2003) for a detailed survey of the German savings banks' laws by the federal states.

[3] See *Neuberger/Schindler* (2001).

pect that better capitalised savings banks are more willing to distribute profits.

Proposition 2: The higher (lower) the savings bank's capital ratio (portfolio risk), the more likely the bank will distribute profits or increase its payout level.

According to *Nippel* (2000), however, the payout decision may also be influenced by their owners, the local authorities, who are potentially able to act for their own interests. This hypothesis would be in line with the literature on joint-stock companies that found that large shareholders do influence dividend decisions.[4] *Mauerer* (1999) argues that the local authorities put pressure on savings banks to increase payouts. Therefore, the payout decision may also be driven by factors that do not refer to the situation of the individual bank, but could reflect the interest of the local authority. Distributed profits of the savings banks being as high as possible thus could be desired especially by local authorities in financial difficulties.[5]

Proposition 3: The worse the financial situation of the local authorities, the more likely the savings bank will distribute profits or increase its payout level.

However, we cannot clearly differentiate, whether this potential relationship is driven by the local authorities or the savings bank itself. On the one hand, it is possible that the local authorities push for high payouts, on the other hand the savings bank may voluntarily distribute (more) profits if the local authority is highly indebted according to the clientele phenomenon.[6] In order to measure the direction of causation, the amount of debt lent to the related local authority may help. It could denote the strength of the relationship between the savings bank and the

[4] See e. g. *Perez-Gonzales* (2002).

[5] The distributions of profits are potentially only a part of the benefits granted to the local authorities, as the savings banks basically are also allowed to give donations to them. However, information about the donations to the local authorities is not available and thus could not be taken into account.

[6] There may exist a modified clientele effect. The original clientele effect suggested by *Modigliani/Miller* (1961) and *Lewellen* et al. (1978) and empirically confirmed by *Elton/Gruber* (1970) and *Borges* (2002) claims that investors are attracted to different company (dividend) policies. However, the original clientele effect is not applicable to savings banks, since they cannot attract a desired clientele by choosing a certain payout ratio, but are tied to a specific clientele (local authority). Nevertheless, savings banks may follow the payout preferences of the clientele and, for instance, distribute more profits if the local authority is in a difficult financial situation.

local authority. On the one hand, the pressure to distribute (more) profits might increase with a stronger lending to the local authority, since the relationship between both institutions is closer. On the other hand, the lending to the local authorities might be regarded as a substitute for payouts, if the interest rates claimed from the local authorities were favourable to them. Therefore, both a positive and negative impact on the payout behaviour would be plausible.

III. Data

In order to examine the payout behaviour of German savings banks in detail, we use balance sheet information and income statements provided by the private dataset provider Hoppenstedt. Since this dataset does only include about 70 percent of all German savings banks and is biased towards larger savings banks, we supplemented the dataset manually with the help of individual balance sheet and profit and loss account information which have to be disclosed in the *Bundesanzeiger*. We merged this dataset with information about the financial situation of the German municipalities and districts. The data for the German municipalities was manually compiled from the statistical yearbooks of German municipalities, whereas the data for the German districts was provided electronically by the Federal Statistical Office.[7]

We explicitly took account of the three different types of German savings banks. There are savings banks related to the local municipality (*Stadtsparkasse*), savings banks related to the district (*Kreissparkasse*) and finally savings banks related to an alliance of both municipalities and districts (*Zweckverbandssparkasse*). In the end of 2003, about every second German savings bank already belonged to the latter type due to mergers between *Stadtsparkassen* and *Kreissparkassen,* whereas *Stadt-* and *Kreissparkassen* each accounted for a quarter of all savings banks. According to these various types of savings banks, we consequently matched *Stadtsparkassen* with the financial data for the relevant municipality, *Kreissparkassen* with the data for the relevant district and

[7] However, some few savings banks could not be considered in the analysis, since their related municipalities were too small and no data was available. We started our analysis with the year 1995, since some definitions of variables regarding the financial situation of the districts had basically changed in 1995. The income of the districts was partly not adjusted before 1995 and therefore do not allow a comparison of the data before and after 1995. Furthermore the data was incomplete for several years before 1995.

Zweckverbandssparkassen with the data for the relevant alliance of both municipalities and districts. In the latter cases, we used the mean values[8] of both the relevant municipalities and the relevant districts.

As the payout level is concerned, German savings banks have to observe legal restrictions, which take into account that savings banks rely heavily on retained profits in order to finance their business growth. Dependent on the federal state in which the savings bank is headquartered, the maximum payout ratio depends on different financial ratios. In the federal states of Baden-Wuerttemberg, Hesse, Lower Saxony, and Schleswig-Holstein the financial ratio is defined as the ratio of reserves divided by total assets or debt. To be precise, savings banks in Baden-Württemberg and Hesse are allowed to distribute earnings if their reserves amount to four percent of total assets. Those in Schleswig-Holstein (Lower Saxony) may distribute profits if their reserves amount to three percent of total assets (total debt). If the minimum payout requirement is met, the savings banks' maximum payout in percent of profits is determined by the exact level of reserves in percent of total assets (total debt). See Table A2 in the appendix for details.

In other federal states the maximum distribution of profits is determined by risk-weighted assets and the level of regulatory capital. Unfortunately, the latter information is rarely made public. Since even any approximation proved to be too rough, it remains unclear, whether and to what extent savings banks in these federal states are allowed to distribute profits or not.[9] Due to the fact that we could not model the savings banks' decision to distribute earnings in these federal states, we focused our analysis on the former federal states of Baden-Wuerttemberg, Hesse, Lower Saxony, and Schleswig-Holstein, which roughly comprise a third of all German savings banks. This restriction on four federal states, however, is no severe limitation of the analysis. In most other federal states, hardly any savings banks actually distributed profits.

Since we intend to measure, which factors drive the savings banks' decision to distribute profits, we restricted our sample to these banks,

[8] We also experimented with another calculation and took the data of the relevant local authority only, which is in the worse financial situation, since this local authority may be of especially high relevance for the payout decision of the savings bank. However, we obtained very similar results.

[9] The exact calculation of risk-weighted assets and regulatory capital requires information that is not available in the annual accounts. Therefore, we could not clearly differentiate between savings banks which fulfil the legal requirements in order to distribute profits and those, which do not.

which are in fact legally allowed to do so, and disregarded those banks, which do not fulfil the legal minimum requirement for payouts. The remaining savings banks in our final sample are these, which may freely decide to distribute profits or not and if, to distribute profits up to the regulatory maximum. Table 1 shows the number of all savings banks in our sample, the number of savings banks which are allowed to distribute profits and finally these banks which actually do so. Since the laws in the various federal states differ considerably, we consciously differentiate between the four federal states in detail.

A more detailed analysis reveals that the payout opportunities by law strongly depend on the particular federal state. According to Table 1, only about 12 and 32 percent of all savings banks, respectively, were allowed to distribute profits in Baden-Wuerttemberg and Hesse, whereas in Lower Saxony or Schleswig-Holstein nearly every savings bank was allowed to distribute profits in the time period from 1995 to 2001. More rigorous legal limitations in Hesse and particularly Baden-Wuerttemberg are partly responsible for that. However, the different number of savings banks being allowed to distribute profits is also due to different capital endowments. If the rigorous legal requirements of Baden-Wuerttemberg had been applied to savings banks in Lower Saxony, only about thirty banks as contrasted to more than fifty would have been allowed to distribute profits.

Table 1 indicates that on average about every fourth savings bank that was allowed to distribute profits actually did so. But there are some differences in the savings banks' reluctance to distribute profits. While in Schleswig-Holstein only 15 percent of all potentially paying savings banks in fact distributed profits, the fraction was somewhat higher in Baden-Wuerttemberg (20 percent) and Lower Saxony (23 percent), and particularly high in Hesse (49 percent).

Irrespective of the particular federal state law, there seems to be a trend that over the years, savings banks have become more and more reluctant to distribute profits.[10] This could be due to the decreasing indebtedness of the local authorities in these federal states.[11] Table 1 also

[10] Interestingly, this result corresponds to the findings of other papers focusing on non-financial firms (see e.g. *Fama/French* (2001) or *Baker/Wurgler* (2002)), although a supposed linkage with the stock market as found by these studies is implausible in case of savings banks.

[11] See *Statistisches Bundesamt* (2004) Schulden der öffentlichen Haushalte 2004, Fachserie 14, Reihe 5.

Table 1

Summary Statistics (Number of Savings Banks)

	Baden-Wuerttemberg			Hesse			Lower Saxony			Schleswig-Holstein			Total		
		Payout			Payout			Payout			Payout			Payout	
Year	All	Pot.	Act.	All	Pot.	Act.	All	Pot.	Act.	All	Pot.	Act.	All	Pot.	Act.
1995	66	7	2	29	5	4	57	56	17	15	12	2	167	80	25
1996	66	7	3	29	5	4	57	56	15	15	11	2	167	79	24
1997	66	7	2	28	7	4	55	55	15	15	12	2	164	81	23
1998	63	7	1	27	9	4	55	55	13	15	13	2	160	84	20
1999	60	7	1	27	10	4	53	53	11	15	13	2	155	83	18
2000	59	9	1	27	13	6	53	53	10	15	13	2	154	88	19
2001	53	10	1	27	14	5	50	50	7	14	12	1	144	86	14
Total	433	54	11	194	63	31	380	378	88	104	86	13	1,111	581	143

Note: This table indicates the number of all savings banks in the relevant federal states in the years 1995 to 2001. Besides, it states how many savings banks were allowed to distribute profits (Pot.) and how many actually did (Act.).

indicates that the number of distributing savings banks varied somewhat over time, but that savings banks generally maintained their payout decision at least over several years. This result is in line with *Gugler* (2003), who found that state-controlled firms engage in dividend smoothing, while family-controlled firms do not.

IV. Methodology and Variables

Since most savings banks do not distribute profits to the local authorities according to Table 1, a Logit model might be appropriate to explain the savings banks' payout decision. In the Logit model, the dependent variable equals one if profits are distributed in the relevant year and zero otherwise. Following *Kim/Maddala* (1992), however, we concentrated on Tobit models, which also take account of the difference between zero and continuous observations. Since Tobit models explicitly make use of the information, whether also the non-zero level of payouts is influenced by the explanatory variables, the Tobit model is expected to be more appropriate than the Logit model here.[12] In case of the Tobit model, we had to define a payout ratio as dependent variable. We constructed a variable that measures the savings bank's freedom of choice regarding the determination of the payout level. The payout ratio is defined as the actual level of distributed profits divided by the maximum level that could be distributed by law. Consequently, it equals zero, if the saving bank does not distribute at all, but would be allowed to, and equals one, if the savings bank totally exhausts its legal possibilities and pays as much money as allowed to the local authorities. Alternatively, we measured the payout behaviour more conventionally by dividing the actual level of payout by total assets and the net income, respectively, and obtained similar results (not presented here).

In order to examine, whether the financial situation of the local authorities influences the savings banks' decision to distribute profits, the explanatory variables do not only contain internal factors of the savings banks, which control for the savings banks' financial situation, but external factors as well, which characterise the financial situation of the local authorities.

[12] The assumption of normally distributed residuals by the Tobit model might be problematic. However, conditional moment tests could not refute the assumption and thus confirm the suitability of the Tobit model in most cases.

The external factors comprise *INC, PEXP* and *DEBTS*. Net income *(INC)* is defined as the balance of the total income and total expenses of the local authority's budget (*Verwaltungshaushalt*) per inhabitant of the town and/or district. According to Proposition 3, we expect that the higher the (positive) balance, the less the local authority is forced to look for some alternative financial sources and to push through payouts. Another reason is that since the local authorities' net income is highly volatile, they might pursuit to smooth it by transfers from the related savings bank. This expectation would also be in line with the tax-smoothing hypothesis by *Barro* (1979). The second factor, personnel expenses (*PEXP*), is defined as a single constituent of total expenses, the sum of personnel expenses, which is divided by the number of inhabitants of the municipality and/or district.[13] We assume that the higher the ratio, the smaller is the financial scope of the local authority and the higher the pressure to obtain other funding sources. Third, we examine the indebtedness (*DEBTS*) as a determinant of the savings bank's payout behaviour. Indebtedness is defined as the ratio of total debts of the local authority divided by the number of inhabitants of the municipality and/or district. We expect that particularly savings banks related to highly indebted local authorities distribute profits.

ROA, CAP, RISK, CAP_RISK, LA-LOANS and *SIZE* represent the internal factors. *ROA* is the return on assets defined as the net income of the individual savings bank divided by total assets. It is a proxy indicating the bank's current profitability and is assumed to be positively related to the payout ratio according to Proposition 1. *CAP* is the bank's capital ratio defined as the book value of the bank's reserves divided by total assets. It measures the capitalisation of the savings bank and is expected to positively influence the payout decision (see Proposition 2). The variable *RISK* is a proxy for the savings bank's portfolio risk and is defined as the sum of risk weighted assets, i. e. shares and other non-fixed-income securities, equity participations, and loans to customers, divided by total assets. Loans to local authorities are weighted with zero percent and loans backed by mortgages with 50 percent. At large, the loans to customers is the most important factor determining the savings bank's portfolio risk. *CAP_RISK* brings together both *CAP* and *RISK* and is defined as the savings bank's capital divided by risk weighted assets. It is used as a proxy for the regulatory capital ratio. *LA-LOANS* re-

[13] We alternatively defined *PEXP* as the sum of personnel expenses divided by the total income of the local authorities. However, the conclusions remain the same.

fers to the loans granted to the local authorities. It is defined as the sum of the savings bank's loans to the related local authority divided by total assets and should measure the strength of the relationship between both institutions. *SIZE,* finally, is the logarithm of total assets and should control for size effects. Larger savings banks, for example, might be financially more flexible and could rather distribute profits than smaller banks. *Barclay* et al. (1995), for instance, found a strong effect of size on the payout decision of US corporations. Finally, the type of savings bank might have an influence on the savings bank's payout decision due to institutional differences in their local authorities. To control for these different types of savings banks, we added the dummy variables *TOWN* and *DISTRICT* to the model, characterising *Stadtsparkassen* and *Kreissparkassen,* respectively. All these internal variables are regarded as exogenous. The potential backward effect of the payout decision on profitability, the capital ratio, and size was considered negligible.

Both internal and external factors, which potentially determine the savings bank's payout decision, refer to the end-of-December of each year. These figures are supposed to form the basis for the payout decision by the *Verwaltungsrat*. Usually the *Verwaltungsrat* decides in spring or summer of the following year, when these internal and external figures already have become public.

Table 2 presents some descriptive statistics regarding the various internal and external factors over time and differentiates between distributing and non-distributing savings banks. In line with Proposition 1 we find that distributing savings banks are actually more profitable than non-distributing savings banks. Two-sample Wilcoxon rank-sum tests, non-parametric alternatives to the two-sample t-test, indicate that *ROA* but also *SIZE* are significantly higher for distributing savings banks. With regard to external factors the results also suggest that distributing savings banks are related to local authorities, which are indebted to a stronger extent. Therefore, we obtain first evidence that the financial situation of the local authority has some effect on the savings bank's decision to distribute profits (see Proposition 3).

V. Results

Table 3 presents the regression results of the Tobit model. In the appendix, we also present the results of the Logit model, which confirm the results of the Tobit model. We both state the coefficients and the mar-

Table 2: **Median of Variables for Distributing and Non-Distributing Savings Banks**

		Savings banks						Relevant local authorities		
Year	Payout	ROA	CAP	RISK	CAP_RISK	SIZE	LA-LOANS	INC	DEBTS	PEXP
1995	No	0.0033	0.0406	0.5441	0.0751	20.6065	0.0371	28.8810	982.83	259.30
	Yes	0.0039**	0.0419	0.5504	0.0739	20.7800	0.0407	30.2517	1,192.30***	302.42
1996	No	0.0031	0.0409	0.5537	0.0736	20.6441	0.0344	18.5708	1,001.28	246.60
	Yes	0.0036***	0.0441	0.5445	0.0774	20.8866**	0.0366	8.9094	1,230.14*	288.97
1997	No	0.0031	0.0415	0.5648	0.0734	20.7249	0.0354	1.6492	976.39	234.56
	Yes	0.0035***	0.0431	0.5596	0.0763	20.8716	0.0321	–2.9812	1,077.54	241.87
1998	No	0.0029	0.0422	0.5849	0.0719	20.8288	0.0357	10.9203	928.31	194.68
	Yes	0.0034*	0.0429	0.5563**	0.0770	20.9764	0.0280	15.3912	1,117.95*	259.42
1999	No	0.0028	0.0432	0.5954	0.0734	20.8670	0.0255	20.1693	915.36	231.64
	Yes	0.0031	0.0441	0.5546**	0.0787*	21.2036	0.0246	7.8024	1,085.80	306.38
2000	No	0.0027	0.0453	0.6114	0.0743	20.9993	0.0271	27.0088	897.32	217.92
	Yes	0.0030**	0.0452	0.5816**	0.0792	21.3402*	0.0271	2.5815	1,145.11**	291.54
2001	No	0.0018	0.0452	0.6059	0.0737	21.1304	0.0256	19.2772	881.42	230.25
	Yes	0.0023	0.0482*	0.5693	0.0845**	21.6429**	0.0377	55.9995	1,134.86*	332.65
Total	No	0.0028	0.0421	0.5799	0.0739	20.8443	0.0298	20.0588	933.60	231.61
	Yes	0.0033***	0.0443**	0.5577***	0.0772***	21.1134***	0.0332	12.2669	1,130.29***	284.74**

Note: Two-sample Wilcoxon rank-sum tests were carried out to examine, whether the medians between distributing and non-distributing savings banks differ significantly. *, **, and *** indicate significance on the 10%, 5%, and 1% level, respectively. ROA refers to the savings bank's return on assets, CAP measures the bank's capital to total assets, RISK measures risk-weighted assets to total assets, CAP_RISK measures capital to risk-weighted assets, SIZE represents the natural logarithm of total assets and LA-LOANS measures loans granted to the relevant local authority (municipality and/or district), divided by total assets. INC measures the local authority's net income per inhabitant, DEBTS refers to the local authority's total debts per inhabitant, and PEXP measures the local authority's personnel expenses per inhabitant.

ginal effects for each explanatory variable. The coefficients indicate the effects of the explanatory variables on the unobservable latent variable (payout willingness), whereas the marginal effects, calculated for mean values of the explanatory variables, indicate the effect on the observable variable (real payout). In other words, the marginal effect in the Tobit model represents the change in distributed profits due to a unit change in the relevant explanatory variable. In the Logit model, the marginal effect describes the change in the probability of distributing profits due to a unit change in the relevant explanatory variable.

Model specification 1 comprises the whole set of explanatory variables. *CAP_RISK,* however, was deliberately omitted due to a high collinearity with both *CAP* and *RISK*. Model specification 2, in turn, focuses on *CAP_RISK* and disregards both the variables *CAP* and *RISK*. Finally, specification 3 only comprises internal factors, whereas specification 4 only considers external factors.

We find that both internal and external factors influence the savings bank's payout decision. As the LR-test indicates, even exclusively external variables do have significant explanatory power with regard to the dependent variable. Among the internal determinants profitability, portfolio risk, and size are most important. They also remain highly significant when modifying the specification according to model 2 and 3. The striking large coefficient of *ROA* is particularly due to the small level of *ROA* compared to other explanatory variables. The positive sign of the profitability measure indicates that savings banks being more profitable are actually less reluctant to distribute profits (see Proposition 1). Therefore, we obtain evidence that highly profitable savings banks, ceteris paribus, are less reliant on retained earnings to boost business growth than less profitable banks. The savings bank's capital endowment *CAP* is of no significant importance for the payout decision. However, both portfolio risk (*RISK)* and the proxy for regulatory capital (*CAP_RISK)* do have a significant effect on payouts, indicating that the Basel regulatory capital requirements in fact influence the banks' payout decisions. In line with Proposition 2, we obtain the result that savings banks with higher portfolio risk are more reluctant to distribute profits than other banks. Furthermore, we find that size is another important variable explaining the payout decision. The positive relationship indicates that particularly larger savings banks distribute profits. The reason for that finding might be the fact that these banks are financially more flexible. Alternatively, they might be more exposed to the public and therefore could feel more responsible for public affairs and thus for the local authorities.

The loans to local authorities do not have a significant impact on the savings banks' payout decision. Only the Logit results in Table A1 provide some meagre evidence of a negative relationship, suggesting that loans to the local authorities might be a substitute for distributed profits. Such a substitutive relationship might hold, since loans to the local authorities usually are priced very favourably for the local authorities. Finally, the results of the Tobit model suggest that *Stadtsparkassen* are somewhat more reluctant to distribute profits than other savings banks.

Besides these internal factors, external determinants influence the savings banks' payout decision.[14] First of all, we see that the indebtedness of the local authorities (*DEBTS*) helps to explain the payout decision. The significant and positive relationship between the local authorities' debts and the savings banks' payouts signals that profits are preferably paid to highly indebted local authorities. These findings confirm our Proposition 3. We also obtain evidence that the financial scope of the local authorities, measured by the personnel expenses per inhabitant (*PEXP*), has strong explanatory power. We observe that the higher the personnel expenses per inhabitant, i. e. the smaller the financial scope of the local authority, the more likely is the related savings bank to distribute profits.

In contrast, the local authority's net income seems to be of less importance for the savings bank's payout decision. We find only meagre evidence of a negative relationship between net income (*INC*) and the payout ratio. Consequently, the result suggests that local authorities try to smooth their volatile net income.

Table A1 in the appendix presents the results for the correspondent Logit model. Although the coefficients differ from these of the Tobit model to some extent, the findings are very similar and thus confirm our conclusions. Also the Logit model provides support for Propositions 1, 2, and 3. However, we obtain less strong evidence in favour of Proposition 2. On the one hand, portfolio risk has a significant and negative impact on the payout decision as expected, on the other hand results suggest that capital to risk-weighted assets does not influence the payout level. Again, these results remain robust when modifying the specification by omitting variables according to specifications (2) to (4).

[14] The external factors are divided by 1.000 in order to increase the coefficients in the regression so that they reach a presentable size. The interpretation of the results is not influenced by this procedure.

Table 3: **Tobit Results**

	TOBIT							
	(1)		(2)		(3)		(4)	
	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff
ROA	237.5197***	53.0392	239.7837***	53.2626	237.4377***	54.3101		
	(5.94)		(5.71)		(5.48)			
CAP	0.8856	0.1977			0.8647	0.1978		
	(0.54)				(0.46)			
RISK	–2.2528***	–0.5031			-1.8547***	–0.4242		
	(–5.22)				(–4.04)			
CAP_RISK			2.1953***	0.4876				
			(2.45)					
SIZE	0.2085***	0.0466	0.2637***	0.0586	0.3597***	0.0823		
	(3.95)		(4.86)		(6.60)			
LA-LOANS	–0.1354	–0.0302			–0.1212	–0.0277		
	(–0.85)				(–0.67)			
TOWN	–0.3431**	–0.0668			0.1103	0.0264		
	(–2.26)				(0.98)			
DISTRICT	0.1921	0.0434			–0.1159	–0.0264		
	(1.56)				(–1.17)			
INC	–0.1314	–0.0293					–0.1342	–0.0327
	(–1.35)						(–1.19)	
PEXP	1.8496***	0.4130	0.8638***	0.1919			0.6366***	0.1550
	(3.68)		(3.92)				(2.73)	

	TOBIT							
	(1)		(2)		(3)		(4)	
	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff
DEBTS	0.3276***	0.0731	0.4034***	0.0896			0.5515***	0.1343
	(2.91)		(3.75)				(4.95)	
Constant	–5.2281***		–7.5842		–7.7257***	–1.7671	–1.1619***	
	(–4.57)		(–6.44)		(–6.27)		(–6.52)	
Observations	581		581		581		581	
Uncensored	143		143		143		143	
Pseudo R^2	0.1916		0.1551		0.1333		0.0708	
Log-Likelihood	–296.88		–310.27		–318.27		–341.23	
P-val. (LR test)	0.0000		0.0000		0.0000		0.0000	

Note: *, **, and *** indicate significance on the 10%, 5%, and 1% level, respectively. z-values on the basis of robust standard errors are in parentheses. Time dummies are included but not reported. Indicated are both the total number of observations and those observations being uncensored (non-zero profit distributions). The log-likelihood ratio tests whether the log-likelihood in the unrestricted model (with explanatory variables) differs significantly in the restricted (with constant only) model. The log-likelihood is the relevant test value. The dependant variable is the payout ratio as described in chapter III. ROA refers to the savings bank's return on assets, CAP measures the bank's capital to total assets, RISK measures risk-weighted assets to total assets, CAP_RISK measures capital to risk-weighted assets, SIZE represents the natural logarithm of total assets and LA-LOANS measures loans granted to the relevant local authority (municipality and/or district), divided by total assets. INC measures the local authority's net income per inhabitant, DEBTS refers to the local authority's total debts per inhabitant, and PEXP measures the local authority's personnel expenses per inhabitant. TOWN and DISTRICT are dummy variables indicating whether the relevant local authority is a municipality or a district.

VI. Further Robustness Checks

As a first robustness check we examine each year of the observation period separately in order to detect potential divergent relationships over time. Table 4 shows the results from the Tobit model for the individual years 1995 to 2001. Due to the small number of observations in each year, we confined to a little more parsimonious specification and excluded *PEXP* from the analysis here. The results confirm our previous findings: Besides the internal factors (profitability, portfolio risk, and size) also an external factor, the indebtedness of the local authority, helps to explain the payout level of the savings banks.

Beyond, we find that these results are quite robust over time. However, the explanatory power of the model tends to become smaller in the end of the observation period due to the low remaining number of savings banks distributing profits.

Finally, we analyse potential differences between the different types of savings banks. Savings banks related to an alliance of both towns and districts, for instance, might be influenced by the alliance less easily than savings banks related to a single district or town. In order to accomplish their aims the relevant local authorities of the alliance would have to arrange coalitions of interests first, which are difficult to constitute and maintain.

Table 5 summarises the results. Not surprisingly, we find that profitability is very relevant for the payout decision of all groups of savings banks (See Proposition 1). Savings banks related to municipalities (towns) or districts particularly consider risk-weighted assets to total assets (RISK) when determining the level of payout, whereas savings banks related to an alliance of both towns and districts rather take account of the capital-to-assets ratio (CAP). The results suggest that savings banks with a higher regulatory capital ratio tend to be more willing to distribute profits (See Proposition 2). Size significantly affects the payout decision at least in case of savings banks related to districts and savings banks related to an alliance of both towns and districts. As savings banks related to towns are concerned, the size effect is insignificant. They differ even in another respect. Loans to the local authorities are irrelevant for the bank's payout decision, whereas they have a significant and positive effect on the level of payouts for other savings banks. The rather small number of observations of savings banks related to towns may provide too little power for significant results.

Table 4: **Tobit Results for Each Individual Year**

	1995	1996	1997	1998	1999	2000	2001
ROA	185.2204**	243.0252**	436.5280***	374.3887**	91.8919	322.4766*	163.4855
CAP	2.9288	4.2721	6.1445	17.4820	28.1925	3.2649	0.1082
RISK	–2.2032	–3.1033**	–1.9752	–0.9703	–4.8258***	–4.0618**	–2.1998
SIZE	0.2273**	0.2769**	0.3744**	0.2658	0.4810***	0.2963	0.2967*
LA–LOANS	1.7141	0.1047	–2.6090	0.9160	3.5750	–0.1853	6.0296
TOWN	0.1212	–0.0120	–0.1346	0.0752	0.2106	0.2487	0.0020
DISTRICT	–0.2727	–0.1803	–0.3897	–0.0061	0.1078	0.2548	–0.2629
INC	1.0171	0.7152	–1.0533	0.3963	–0.6200	–0.1417	–0.1190
DEBTS	0.6597***	0.5268**	0.4285	0.6570**	0.4428	0.7655**	0.6497
Constant	–5.3186**	–5.8452**	–8.9186***	–8.1340*	–10.0681**	–6.4089	–6.9345**
Observations	80	79	81	84	83	88	86
Uncensored	25	24	23	20	18	19	14
Pseudo R^2	0.2574	0.2499	0.2059	0.1828	0.2188	0.2403	0.1468
Log-Likelihood	–40.94	–41.07	–44.29	–41.92	–37.41	–40.93	–37.35
P-val. (LR test)	0.0008	0.0012	0.0063	0.0273	0.0128	0.0021	0.1696

Note: * ,**, and *** indicate significance on the 10%, 5%, and 1% level, respectively. z-values on the basis of robust standard errors are in parentheses. Indicated are both the total number of observations and those observations being uncensored (non-zero profit distributions). The log-likelihood ratio tests whether the log-likelihood in the unrestricted model (with explanatory variables) differs significantly in the restricted (with constant only) model. The log-likelihood is the relevant test value. The dependant variable is the payout ratio as described in chapter III. ROA refers to the savings bank's return on assets, CAP measures the bank's capital to total assets, RISK measures risk-weighted assets to total assets, SIZE represents the natural logarithm of total assets and LA-LOANS measures loans granted to the relevant local authority (municipality and/or district), divided by total assets. INC measures the local authority's net income per inhabitant, DEBTS refers to the local authority's total debts per inhabitant, and PEXP measures the local authority's personnel expenses per inhabitant. TOWN and DISTRICT are dummy variables indicating whether the relevant local authority is a municipality or a district.

Table 5

Tobit Results for the Different Types of Savings Banks

	TOBIT							
	Savings banks related to districts		Savings banks related to towns		Savings banks related to both towns and districts			
					(1)		(2)	
	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.
ROA	184.9383*** (2.80)	31.6795	302.0700*** (3.73)	59.5656	226.8138*** (3.07)	18.3074	234.3285*** (3.23)	19.2051
CAP	–3.3460 (–0.35)	–5.7317	8.5292 (0.60)	1.6819	112.9629*** (5.22)	9.1178	111.2886*** (5.06)	9.1210
RISK	–6.0475*** (–5.66)	–1.0359	–1.8258*** (–3.38)	–0.3600	2.1798 (1.29)	0.1759	1.9334 (1.18)	0.1585
SIZE	0.3000** (2.21)	0.0514	0.0117 (0.14)	0.0023	0.5147** (2.34)	0.0415	0.5658** (2.42)	0.0464
LA–LOANS	3.3812* (1.88)	0.5792	–0.1492 (–0.62)	–0.0294	10.3635** (2.23)	0.8365	10.4137** (2.16)	0.8535
INC	–0.5802 (–0.66)	–0.0994	–0.4323 (–1.23)	–0.0852	–0.1395* (–1.70)	–0.0113	–0.0702* (–1.66)	–0.0058
PEXP	2.1185 (1.51)	0.3629	3.5411*** (4.32)	0.6983	0.5327 (0.29)	0.0430	–0.2897 (–0.35)	–0.0237

TOBIT								
	Savings banks related to districts		Savings banks related to towns		Savings banks related to both towns and districts			
					(1)		(2)	
	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.
DEBTS	0.7409***	0.1269	0.2897	0.0571	0.0113	0.0009	0.1004	0.0082
	(4.19)		(1.36)		(0.06)		(0.60)	
Constant	–5.0682		–2.9454*		–18.4622***		–19.1757***	
	(–1.51)		(–1.77)		(–3.24)		(–3.22)	
Observations	280		171		130		130	
Uncensored	62		45		36		36	
Pseudo R^2	0.2301		0.3388		0.4948		0.4974	
Log–Likelihood	–121.77		–76.04		–46.26		–46.02	
P–val. (LR test)	0.0000		0.0000		0.0000		0.0000	

Note: *, **, and *** indicate significance on the 10%, 5%, and 1% level, respectively. z-values on the basis of robust standard errors are in parentheses. Time dummies are included but not reported. Indicated are both the total number of observations and those observations being uncensored (non-zero profit distributions). The log-likelihood ratio tests whether the log-likelihood in the unrestricted model (with explanatory variables) differs significantly in the restricted model (with constant only). The log-likelihood is the relevant test value. The dependant variable is the payout ratio as described in chapter III. ROA refers to the savings bank's return on assets, CAP measures the bank's capital to total assets, RISK measures risk-weighted assets to total assets, SIZE represents the natural logarithm of total assets and LA-LOANS measures loans granted to the relevant local authority (municipality and/or district), divided by total assets. INC measures the local authority's net income per inhabitant, DEBTS refers to the local authority's total debts per inhabitant, and PEXP measures the local authority's personnel expenses per inhabitant.

As the external factors are concerned, we find some evidence for our assumption that the external factors are less relevant for savings banks related to an alliance of both towns and districts. Whereas the indebtedness of the local authorities is highly significant for the payout decision of savings banks related to districts and the personnel expenses per inhabitant are very relevant for savings banks related to towns,[15] we find no evidence that these variables are important determinants for savings banks related to an alliance of both towns and districts as well. We only find some meagre evidence that the local authority's net income might have some influence on the savings bank's payout decision. This finding supports our assumption that the local authorities will try to influence the savings banks payout decision if they can. Two different model specifications are presented in Table 5 as another robustness check. In case of model specification 1, the *Zweckverbandssparkassen* are assigned to the arithmetic mean of the financial data of the relevant towns and districts. In case of model specification 2, the *Zweckverbandssparkassen* are exclusively assigned to the financial data of the single relevant local authority, whose financial situation is comparatively worst. Since both specifications show similar results, the results prove robust.

Finally, we also utilised alternative definitions of the dependent variable as a robustness check. On the one hand, we defined the dependent variable as the level of payout divided by the net income of the savings banks. On the other hand, we defined the payout ratio as the payout level divided by total assets. In both cases, however, the findings are very similar to those obtained above.

VII. Conclusions

According to the federal laws in Germany, the savings banks' maximum payouts allowed by law depend on some financial ratios measuring the banks' capitalisation. These laws shall ensure that savings banks accumulate enough money to expand their business and can fulfil regulatory capital requirements even in future years. In line with the federal laws, our analysis of savings banks in Hesse, Schleswig-Holstein, Lower Saxony, and Baden-Wuerttemberg indicates that profitability has a positive and that portfolio risk has a negative effect on the savings banks'

[15] If *PEXP* is excluded from the regression, we find that *DEBTS* is significant and positive in case of savings banks related to towns as well.

payout decision. Furthermore, the results also suggest that larger savings banks are more capable to distribute profits.

Given that the beneficiaries of the payouts, the municipalities and districts, are seriously indebted, it could be argued that the relevant local authorities might stick up for payouts being as high as possible and influence the banks' payouts. Indeed, we observe that the distribution of profits is not only affected by internal factors related to the individual savings bank, but also by external factors related to the local authorities. The results indicate that the worse the financial situation of the related local authority, the more likely the savings bank is to distribute profits and to increase payouts, respectively. More specifically, we find that both the indebtedness and the personnel expenses per inhabitant do have a significant and positive impact on the payout decision. Furthermore, we obtain some meagre evidence that local authorities try to smooth their net income with the help of the payouts from the savings banks. Interestingly, the local authorities' indebtedness and personnel expenses do not play a significant role in case of savings banks being related to an alliance of both municipalities and districts. These savings banks are expected to be less influenced by the individual municipalities and districts of the alliance, since it would be more difficult for the local authorities to constitute and maintain a coalition of interests.

In total, the results suggest that, similar to the literature on joint-stock companies that found that large shareholders do influence dividend decisions, there is a significant influence of the local authorities on the payout decision of German savings banks. However, we also find some hints that savings banks might voluntarily determine their payout level according to the financial situation of the relevant local authority. Since the overall payout level of the savings banks is quite low and only a few savings banks actually distribute profits, the extent of the local authorities' impact is economically limited. At least, there seems to be no menace for the savings banks' funding.

Finally it remains to be considered that the above conclusions are drawn on the basis of savings banks in Schleswig-Holstein, Lower Saxony, Hesse, and Baden-Wuerttemberg only due to data restrictions. Any generalisation for all German savings banks thus has to be made with due care. It remains up to future research to extend the research to all German savings banks.

References

Baker, M. P./*Wurgler,* J. (2002): Why are dividends disappearing? An empirical analysis, Harvard NOM Research Paper No. 03–12. – *Barclay,* M. J./*Smith,* C. W./*Watts,* R. L. (1995): The determinants of corporate leverage and dividend policies, Journal of applied corporate finance 7, 4–19. – *Barro,* R. J. (1992): On the determination of public debt, Journal of Political Economy 87, 940–971. – *Borges,* M. R. (2002): Clientele effects in dividends distributions – the Portuguese case, Working Paper. – *Da Silva,* L. C./*Goergen,* M./*Renneboog,* L. (2002): When do German firms change their dividend?, Working Paper. – *Deutsche Bundesbank* (2002): Monthly report May. – *Elton,* E. J./*Gruber,* M. J. (1970): Marginal stockholder tax rates and the clientele effect, The Review of Economics and Statistics 52, 68–74. – *Fama,* E. F./*French,* K. R. (2001): Disappearing Dividends: Changing Firm Characteristics or lower Propensity to pay, Journal of Financial Economics 60, 3–43. – *Gugler,* K. (2003): Corporate governance, pay-out policy, and the interrelationships between dividends, R&D, and capital investment, Journal of Banking and Finance 2003, 1297–1321. – *Hackethal,* A. (2003): German banks – a declining industry?, CFS Working Paper No. 2003/27, Frankfurt University. – *Kim,* B. S./*Maddala,* G. S. (1992): Estimation and Specification Analysis of Models of Dividend Behavior Based on Censored Panel Data, Empirical Economics 17, 111–124. – *Koetter,* M./*Nestmann,* T./*Stolz,* S./*Wedow,* M. (2004): Structures and Trends in German Banking, Kiel Working Paper No. 1225. – *Lewellen,* W. G./*Stanley,* K. L./*Lease,* R. C./*Schlarbaum,* G. G. (1978): Some Direct Evidence on the Dividend Clientele Phenomenon, The Journal of Finance 33, 1385–1399. – *Lintner,* J. (1956): Distribution of income of corporations among dividends, retained earnings and taxes, American Economic Review, 97–113. – *Mauerer,* A. (1999): Shareholder-Value: ein Bumerang für die Zukunft der Sparkassen, Kreditwesen 9, 438–441. – *Miller,* M. H./*Modigliani,* F. (1961): Dividend Policy, Growth, and the Valuation of Shares, The Journal of Business 34, 411–433. – *Neuberger,* D./*Schindler,* M. (2001): Nutzen und Kosten des öffentlichen Auftrags bei Sparkassen und Landesbanken, in: Öffentliche Banken, Eichhorn, P./*Püttner,* G. (Ed.), Nomos, Baden-Baden. – *Nippel,* P. (2000): Eigenkapital, Eigenkapitalkosten und Gewinnverwendung öffentlich-rechtlicher Kreditinstitute, Zeitschrift für Bankrecht und Bankwirtschaft 12, 217–225. – *Perez-Gonzales,* F. (2002): Large Shareholders and Dividends: Evidence from U. S. Tax Reforms, Working Paper. – *Püttner,* G. (2003): Das Sparkassenrecht in der Bundesrepublik Deutschland, Deutscher Sparkassen Verlag, Stuttgart. – *Sapienza,* P. (2004): The effects of government ownership on bank lending, Journal of Financial Economics 72, 357–384. – *Statistisches Bundesamt* (2004): Finanzen und Steuern, Schulden der öffentlichen Haushalte, Fachserie 14/Reihe 5, Wiesbaden, Juli 2004. – *Statistisches Jahrbuch Deutscher Gemeinden,* Deutscher Städtetag, Köln, diverse volumes.

Table A1: **Logit Results**

	LOGIT							
	(1)		(2)		(3)		(4)	
	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff
ROA	778.4664*** (4.83)	122.7358	709.3981*** (4.87)	114.9538	664.1472*** (5.04)	110.0211		
CAP	3.0512 (1.17)	4.8106			2.6390 (1.01)	0.4372		
RISK	–8.3052*** (–4.50)	–1.3094			–5.2811*** (–4.08)	–0.8749		
CAP_RISK			4.3676 (0.80)	0.7078				
SIZE	0.6173*** (4.07)	0.0973	0.6256*** (4.35)	0.1014	0.8425*** (5.84)	0.1396		
LA-LOANS	–0.3040** (–2.34)	–0.0479			–0.2107* (–1.65)	–0.0349		
TOWN	–0.7775* (–1.86)	–0.1226			0.3144 (1.04)	0.0521		
DISTRICT	0.7894* (1.92)	0.1245			–0.1577 (–0.57)	–0.0261		
INC	–1.5073* (–1.72)	–0.2376					–0.5519* (–1.75)	–0.0978
PEXP	5.2198*** (3.56)	0.8230	2.0120*** (3.24)	0.3260			1.1339** (2.02)	0.2008

(Continued page 62)

(Table A 1: Continued)

	LOGIT							
	(1)		(2)		(3)		(4)	
	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff.	Coef.	Marg. eff
DEBTS	0.9366***	0.1477	1.0197***	0.1652			1.1903***	0.2108
	(2.58)		(3.24)				(3.94)	
Constant	–14.8086***		–18.4685***		–18.0703***		–2.4609***	
	(–4.33)		(–5.64)		(–5.82)		(–5.75)	
Observations	581		581		581		581	
Pseudo R^2	0.198		0.150		0.138		0.064	
Log-Likelihood	–260.18		–275.55		–279.42		–303.44	
P-val. (LR test)	0.0000		0.0000		0.0000		0.0000	

Note: *, **, and *** indicate significance on the 10 %, 5 %, and 1 % level, respectively. z-values on the basis of robust standard errors are in parentheses. Time dummies are included but not reported. Indicated are both the total number of observations and those observations being uncensored (non-zero profit distributions). The log-likelihood ratio tests whether the log-likelihood in the unrestricted model (with explanatory variables) differs significantly in the restricted (with constant only) model. The log-likelihood is the relevant test value. The dependant variable is 1 for distributing and 0 for non-distributing savings banks. ROA refers to the savings bank's return on assets, CAP measures the bank's capital to total assets, RISK measures risk-weighted assets to total assets, CAP_RISK measures capital to risk-weighted assets, SIZE represents the natural logarithm of total assets and LA-LOANS measures loans granted to the relevant local authority (municipality and/or district), divided by total assets. INC measures the local authority's net income per inhabitant, DEBTS refers to the local authority's total debts per inhabitant, and PEXP measures the local authority's personnel expenses per inhabitant. TOWN and DISTRICT are dummy variables indicating whether the relevant local authority is a municipality or a district.

Table A2

Maximum Payouts According to Savings Banks Laws (1995–2001)

Country	*Condition*	*Max. Payout*
Baden-Württemberg	(Reserves/Total Assets) < 4 %	0 % of annual net profit
	(Reserves/Total Assets) < 7.5 %	25 % of annual net profit
	(Reserves/Total Assets) > 7.5 %	50 % of annual net profit
Hesse	(Reserves/Total Assets) < 4 %	0 % of balance sheet profit
	(Reserves/Total Assets) < 7.5 %	25 % of balance sheet profit
	(Reserves/Total Assets) > 7.5 %	50 % of balance sheet profit
Lower Saxony	(Reserves/Total Debt) < 3 %	0 % of balance sheet profit
	(Reserves/Total Debt) < 5 %	10 % of balance sheet profit
	(Reserves/Total Debt) < 7.5 %	25 % of balance sheet profit
	(Reserves/Total Debt) < 10 %	50 % of balance sheet profit
	(Reserves/Total Debt) > 10 %	75 % of balance sheet profit
Schleswig Holstein	(Reserves/Total Assets) < 3 %	0 % of annual net profit
	(Reserves/Total Assets) < 5 %	10 % of annual net profit
	(Reserves/Total Assets) > 5 %	25 % of annual net profit

Summary

Aspects of Payout Policy of German Savings Banks

The German savings banks' distribution of profits among their public owners (i.e. municipalities and districts) requires that legal criteria are met ensuring the banks' adequate funding via retained profits. In line with the legal framework, our analysis of savings banks in four federal states confirms that profitability and portfolio risk are important determinants of the savings banks' payout decision. Heavily indebted municipalities and districts, however, might have a strong interest in the savings banks' payouts to mitigate their financial distress. In fact, we find that the payout decision is also influenced by the public owners' interest. (G21)

Zusammenfassung

Aspekte der Ausschüttungspolitik deutscher Sparkassen

Die Ausschüttungen der deutschen Sparkassen an ihre Gewährträger (Städte und Kreise) werden streng gesetzlich reguliert, um eine angemessene Refinanzierung der Sparkassen über einbehaltene Gewinne zu gewährleisten. Unsere Untersuchung der deutschen Sparkassen in vier Bundesländern bestätigt, dass entsprechend den gesetzlichen Vorgaben die Profitabilität und das Portfoliorisiko der Sparkassen wichtige Bestimmungsgrößen der Ausschüttungsentscheidung sind. Stark verschuldete Gewährträger könnten darüber hinaus ein großes Interesse an den Ausschüttungen haben, um ihre Finanzsituation zu verbessern. Tatsächlich finden wir heraus, dass die Ausschüttungsentscheidung auch von den Interessen der Gewährträger beeinflusst wird.