Measuring the relationship between supervisory authorities and banks: An assessment of the German banking sector

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Abstract The successful implementation of a harmonised regulatory framework for the global banking system is still a long way off. This mainly results from (a) different traditions in banking regulation and supervision at the national level, (b) different national emphases on regulatory sub-goals such as efficiency or the protection and promotion of national financial markets, and (c) different institutional settings and conditions. In this context, studies on the banking industry's assessment of supervisory processes and instruments highlight how effectively and efficiently individual nation states are implementing international frameworks such as Basel II and the Capital Requirements Directive for Europe. In November 2005, the German Government commissioned an evaluation of the supervisory processes and instruments of the country's banking authorities, BaFin and Bundesbank. The study aimed to determine the options for further optimising supervision, reducing regulatory burden and bureaucracy, and otherwise restricting supervision. This paper presents the most important findings from the survey, analyses significant differences in assessments given by various banking groups, empirically evaluates significant drivers of banks' overall satisfaction with banking supervision, and drafts proposals for improving banking regulation and supervision in Germany. Finally, aspects of further research are discussed.

Keywords: *banking regulation, qualitative banking supervision, regulatory burden, credit sector, relationship quality, CHAID, Basel II*

INTRODUCTION

Contentious issues pertaining to the banking supervision performed by the German supervisory authorities — the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and the Deutsche Bundesbank (Bundesbank) — have in recent years been discussed by politicians, academics and representatives of all sectors of the banking industry. The main points of contention have been:

- the supervisory strategy (especially during the preparations for Basel II);
- individual supervisory processes and instruments (eg audits according to s. 44 of the German Banking Act);
- the allocation of supervisory responsibilities between BaFin and Bundesbank;
- communication between banks and supervisors; and
- financing BaFin.

More generally, due to the remarkable increase in the complexity of banking supervisory processes and instruments following the implementation of Basel II regulations into German banking law (and having chosen a modified and adequate supervisory strategy), it has been discussed whether excessive banking regulation and supervision in Germany might lead to a higher regulatory and bureaucratic burden, and hence distort the level playing field between German and foreign banks. Furthermore, there is ongoing debate as to whether the allocation of supervisory responsibilities between BaFin and Bundesbank may be an obstacle to efficient and effective banking supervision in Germany. When also considering the impact of the US subprime loan crisis on the risk expositions of various German banks (eg IKB Deutsche Industriebank AG and Sachsen LB), the issue becomes increasingly apposite. In particular, one wonders how these banks were able to become so involved in the risky business of securitised subprime loans despite being under direct supervision.

Providers of banking supervision in Germany have responded to the criticism with increased efforts to improve their ‘customer orientation’. Thus, during a press conference on 10th May, 2006 Jochen Sanio, President of BaFin, said:

> ‘If you will allow me to dream for a moment: This is the supervision of the future: banking supervision that is based on partnership which provides our “clients” with consulting services of the highest quality. Once we have installed these everywhere in a few years there will be no more bureaucracy discussions about BaFin.’ [authors’ translation][1]

It was against such a background in 2005 that the German Federal Ministry of Finance commissioned a study into the supervisory processes and instruments of the country's banking authorities.[2]

The main goal of this study was to measure the quality of the relationship between the supervisory authorities and the supervised banks from the perspective of the banking sector itself. It also sought to identify potential weak spots in banking supervision and develop more capable supervisory models in the future. It was hoped that the study would highlight how effectively and efficiently international banking regulatory frameworks such as Basel II or the Capital Requirements Directive for Europe were being implemented. Finally, it was intended to expose significant country-specific obstacles to harmonisation emerging from institutional settings and supervisory practices.

Prior to this survey, the only comparable national-level study was the biennial study conducted by Kredittilsynet, the Norwegian supervisory authority.[3,4] On a smaller scale, DSGV, the German Savings Bank Association, consulted its member banks about the quality of its supervisory processes and instruments in 2004.[5] The authors of the present paper also previously conducted a regional-level survey of a sample of German banks with regard to problems related to banking supervision.[6] Although the IMF, World Bank and, shortly, Committee of European Banking Supervisors (CEBS) have implemented financial assessment programmes to measure the convergence of international banking regulation, these surveys do not address the banking sector itself but rather central banks and national supervisors.

The present paper summarises the most important results of the German survey. From the entire set of statements, the paper considers only those answers that are (a) classified as notably positive or negative or (b) significantly different among banking groups, ie commercial banks (*Kreditbanken*), savings banks (*Sparkassen*), credit cooperatives (*Volks- und Raiffeisenbanken*) and others (see Table 1). The pre-selection was deemed appropriate as answers classified as differentiating or particularly negative

Table 1: Sample of selected banks and response rate according to bank group membership

Banking groups	Germany Total 2005	Sample of selected banks Absolute	Sample of selected banks Percent of total banks	Response rate Absolute	Response rate Percent of the sample
Credit cooperatives	1,291	395	30.6	251	63.5
Savings banks	457	184	40.3	115	62.5
Commercial banks	203	124	61.1	91	73.4
Others:					
Bausparkassen	25	25	100.0	13	52.0
Realkreditinstitute	23	23	100.0	18	78.3
Bürgschaftsbanken	24	24	100.0	13	54.1
Landesbanken	12	12	100.0	1)	1)
Banken mit Sonderaufgaben	19	19	100.0	12	63.2
Genossenschaftliche Zentralbanken	2	2	100.0	1)	1)
Total	2,056	808	39.3	523	64.7

1) NA due to data privacy

may represent arguments for an improvement in banking supervision in Germany.

The remainder of the paper is organised as follows. The next section presents the methodology. The following section discusses the main results of the German survey. The final section concludes with recommendations for optimising banking supervision in Germany and ideas for further research.

METHODOLOGY

The Bundesbank defines nine different banking groups within the German banking industry: *Kreditgenossenschaften*, *Sparkassen*, *Kreditbanken*, *Bausparkassen*, *Realkreditinstitute*, *Bürgschaftsbanken*, *Landesbanken*, *Banken mit Sonderaufgaben* and *Genossenschaftliche Zentralbanken*.[7] Ideally, all banks supervised by BaFin should have been covered by the evaluation study. However, because of political movements and the large number of small banks in Germany, notably credit cooperatives (*Kreditgenossenschaften*) and savings banks (*Sparkassen*), a random sample was taken from the groups of credit cooperatives, savings and commercial banks. With regard to the remaining six groups, the total number of banks was too small to draw a sufficiently random sample. Thus, all banks from these groups were included in the evaluation sample. In total, 808 banks (management level) were representatively selected (see Table 1).

A written questionnaire was used to interview the selected banks regarding various aspects of the supervisory function. The relevance of the questionnaire was ensured by *ex ante* technical discussions with representatives of various banking associations and the banks themselves. It is likely that this contributed significantly to the high response rate of 64.7 per cent (523 questionnaires) (see Table 1). In contrast, the response rate of the similar Norwegian survey in 2006 was relatively low at 34 per cent.

To interpret the results correctly, one must take into account that the relationship between the supervisory authorities and the interviewed banks is special, being as it originated from a sovereign act of administration. One should therefore expect that the banks may assess their 'service provider' state supervision with lower scores compared with assessments that 'ordinary' service providers would have received instead. Furthermore, the survey does not cover an important subsection of supervision that is even special for banking in Germany: as concerns aspects of banking supervision and regulation, credit cooperatives as well as savings banks usually appeal to their respective association 'Bundesverband der Deutschen Volksbanken und Raiffeisenbanken' (BVR) and 'Deutscher Sparkassen- und Giroverband' (DSGV) as member banks rather than an official supervisory authority. Both the BVR and the DSGV consult their member banks regarding regulatory concerns and make use of their own supervisory departments and instruments that may be likened to those used by official supervisory authorities (eg annual or special audits). Thus, these associations are important actors within the supervisory framework and, in addition, delegate members into BaFin's board of administration. Unfortunately, however, neither the BVR nor the DSGV were prepared to give any statements.

However, in only one case (assessments of special audits — see below and Appendix, Table A8) associations have been included as objects of evaluation.

Central to the survey were previous experiences of banking supervision and the resulting appreciation of supervisory processes and instruments by banks. The study was thus performed descriptively and reflects a subjective assessment of the German banking industry. Although this paper also presents results from 'other banks', it does not comment on these results but rather focuses on commercial, savings banks and credit cooperatives as the three main banking groups in Germany. In some cases, the paper directly refers to the survey's original dataset to prove the results in detail. For most cases it also refers to the authors' own statistical measures to explain significant differences more clearly. As banks were most often faced with statements that had to be rated on a scale from 1 to 5, each grade of this scale is transformed into an index value, ranging from 0 points for the value of '1', to 100 points for the value of '5'; 'no assessments' was not considered for linear transformation. These compressed index values are used to build two statistical measures, namely the mean of index values and its standard deviation (see Appendix). Within the 2006 Norwegian survey, an overall score greater than 70 index points was considered 'excellent'. It is recommended that 'results should however in all cases exceed an index value of 60'.[4]

An initial issue for the survey was the expectation that the concerns and experiences of the banks being interviewed might characteristically differ and hence offer a variety of possible interpretations. Thus, to test for differences in mean values and other attributes *between* different banking groups, this study also applies the chi-squared automatic interaction detection (CHAID) algorithm provided by Kass.[8] The study also applies the CHAID algorithm to grow a regression tree revealing statistically significant drivers of the banks' overall satisfaction concerning banking supervision *across* all banking groups (see Figure 1). For further reading on CHAID, see Kaltofen *et al.*[9]

Weighted calculations are applied for all cases where the statements concern the banking market as a whole. The weighting factor refers to the banks' affiliation to a certain banking group and reconstructs the proportionality of the random sample of 808 banks in relation to the total number of 2,056 banks in Germany (see Table 1). Hence, if the classification criterion is the affiliation to a certain banking group, the mean values and standard deviations do not differ from each other regardless of whether or not they are weighted. Thus, weighting is dispensable in these cases.

MAIN RESULTS OF THE GERMAN SURVEY

Supervisory strategy

In terms of supervisory matters, official authorities such as BaFin and Bundesbank have a key role for commercial banks, whereas for savings banks and credit cooperatives it is the respective association. Correspondingly, the majority of savings banks and credit cooperatives (approximately 90 per cent in each banking group) report that their respective association is the 'first contact' in respect of banking supervision. Due to the low number of assessments, it is thus difficult to submit an objective appreciation of the supervisory strategy for these banking groups.

The majority of banks providing an assessment suggest that the strategy of the supervisory authorities is clear and transparent with no significant differences between the different banking groups (see Appendix, Table A1). Regarding the main task of the supervisory authorities, namely controlling for and limiting the financial risks within the banking market, commercial banks, more than credit cooperatives and savings banks, stress the authorities' focus on systemic risk. Accordingly, the authorities' focus on individual bank risk is less transparent for credit cooperatives, as underlined during *ex ante* technical discussions with representatives from smaller banks. The idea that supervisory authorities may exert influence on international regulatory issues in favour of the German banking sector is seen negatively and, again, is less observed by credit cooperatives.

Qualitative banking supervision (MaRisk)

In late 2005, BaFin announced a framework of minimum requirements concerning internal risk management within the banking sector (*Mindestanforderungen an das Risikomanagement*, MaRisk) to transform the contents of Pillar 2 (the Supervisory Review and Evaluation Process, and Internal Capital Adequacy Assessment Process) of Basel II into German banking law. The implementation of MaRisk as an instrument of higher-level 'qualitative' banking supervision is controversially debated in Germany to this day. In this context, the main points of contention have been the transparency of the MaRisk framework, the specificity of MaRisk regulations, the homogeneity of supervisory action according to these regulations, and the extent of possible intervention into the banks' rights of disposition.[10]

Most banks in the sample were willing to comment on the clarity of MaRisk regulations with respect to different risk complexes (see Appendix, Table A2). With regard to regulations focusing on a higher level of qualitative banking supervision within the MaRisk framework, banks from all groups comment that regulations are largely, but not completely, distinct across all bank-specific risk complexes. Regulations concerning banks' credit risk from making loans are considered to be most clear in relation to other risks. This is perhaps not surprising as detailed regulations on managing credit risks were already implemented within the earlier Basel Capital Accord (Basel I). In contrast, MaRisk regulations concerning banks' operational risk are less clear-cut. This particularly holds for smaller banks, such as credit cooperatives and savings banks, and thus underlines a need to refine and specify MaRisk with respect to this risk category. The results might be due to the fact that Basel I did not provide for the management of operational risk and, hence, supervisors (as well as the banks themselves) are not as familiar with this risk complex as they are with other risk categories.

Margins possibly arising following the implementation of MaRisk regulations are considered to be rather low across all bank-specific risk complexes (see Appendix, Table A3). However, with respect to the implementation of an adequate risk management organisation and internal capital adequacy process, credit cooperatives feel much more constrained than other banks. Despite this, most bank managers hope that the implementation of 'qualitative requirements' within the MaRisk framework will provide them with sufficient freedom to act. Thus, the majority of bank managers from all banking groups consider more qualitative banking supervision to be an opportunity rather than a risk; this especially holds for commercial banks and savings banks but less for credit cooperatives (see Table 2).

Supervisory instruments

Supervisory dialogues

Germany's supervisory authorities have used (predominantly onsite) supervisory dialogues with almost all banks. Taking into account the evaluation of the supervisory strategy and the appreciation of MaRisk regulations as presented above (also see Appendix), the results suggest that banks' assessments of these issues are positively correlated with the frequency of supervisory dialogues. As Table 3 indicates, credit cooperatives noticeably received the lowest frequency of supervisory dialogues over the period 2002–06. Simultaneously, the supervisory strategy (especially the authorities' focus on individual bank risk) and regulations on qualitative supervision in sum are less transparent for this banking group. One can therefore conclude that a more frequent dialogue between supervisors and bank managers improves banks' insight into supervisory requirements.

Table 3: Average number of supervisory dialogues (2002–2006)

Banking groups	Supervisory dialogues
Commercial banks	5.39
Credit cooperatives	1.98
Savings banks	2.45
Others	2.71
Total (average)	2.50

The most frequent topics of supervisory dialogue have been individual risk complexes, their management and the overall risk position of banks. Further important issues have been the development of current business units and the bank's cost–income ratio. In contrast, other strategic aspects, eg the bank's competitive environment, have been discussed less frequently. Individual banks' organisational structure (eg outsourcing) or staff (eg quality of board members) have rarely been the subject of supervisory dialogues.

Supervisory site dialogues are evaluated very positively in many aspects by all banking groups (see Appendix, Table A4). Banks comment that supervisory dialogues cover important aspects of auditing, which is (on a very

Table 2: Assessment of qualitative supervision

	(1) Comm. banks		(2) Credit coop.		(3) Savings banks		(4) Others		CHAID	
	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent	pools	p
Chance	68	80.0	152	68.2	80	80.0	56	87.5	1/3/4; 2	0.0037
Risk	17	20.0	71	31.8	20	20.0	8	12.5		
Total	85	100.0	223	100.0	100	100.0	64	100.0		

CHAID-parameters: $\alpha_{merge} = 5\%$; $\alpha_{split} = 5\%$; Bonferroni-adjusted p-values (Chi-square statistics).

high level) less clear for credit cooperatives. Furthermore, banks stress that dialogues have been clearly structured, performed in a cooperative manner and that supervisors have been amenable to banks' concerns. Moreover, banks emphasise that supervisory authorities have been familiar with the specific features of individual banks' business segments and the specifics of the banks themselves. However, with regard to costs and benefits emerging from supervisory dialogues, banks' assessments change and differ significantly between the various banking groups. Thus, commercial banks observe lower costs and higher benefits from supervisory dialogues than credit cooperatives and savings banks. This can be explained by the fact that credit cooperatives and savings banks have to bear a relatively higher bureaucratic burden as they are supervised by both their respective association *and* official supervisory authorities.

Special audits in accordance with the German Banking Act

Besides conducting supervisory dialogues and requesting financial information on a regular basis, BaFin may additionally carry out onsite supervisory audits (so-called 'special audits') according to s. 44 (1) of the German Banking Act. Since its foundation in 2002, BaFin has used this instrument in seven out of ten banks — least often for credit cooperatives, whereas loan exposure has predominantly been audited (see Table 4). However, compared with all other banks, loan exposure audits were performed most frequently at credit cooperatives (76.6 per cent).

Banks across all banking groups confirm that special audits concerning loan exposures do not significantly increase their level of risk aversion when making loans (see Appendix, Table A5). This corresponds with results from *ex ante* technical discussions, where most banks commented that a cautious risk policy was pursued anyway, independent of supervisory auditing.

BaFin may perform special audits itself, utilise the Bundesbank, or transfer its mandate to third parties, such as certified public accountants, accountancy firms or the auditing bodies of banking associations (see Table 5). Given this freedom, BaFin has regularly awarded the transfer of mandates on a public

Table 4: Objects of special audits

Objects	Comm. banks Absolute	Comm. banks Percent	Credit coop. Absolute	Credit coop. Percent	Savings banks Absolute	Savings banks Percent	Others Absolute	Others Percent
Loan exposure	25	33.3	164	76.6	44	41.9	19	30.6
MaRisk	7	9.3	5	2.3	3	2.9	4	6.5
Requirements for credit business	15	20.0	31	14.5	19	18.1	14	22.6
Requirements for commercial transactions	15	20.0	10	4.7	21	20.0	14	22.6
Money-laundering	12	16.0	0	0.0	5	4.8	2	3.2
Organisation	29	38.7	35	16.4	11	10.5	19	30.6
Total	75	100.0	214	100.0	105	100.0	62	100.0

Multiple specifications allowed.

Table 5: Special audits in accordance with performing institutions

	Comm. banks		Credit coop.		Savings banks		Others	
	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent
BaFin	1	1.4	2	0.9	2	1.9	3	4.8
Bundesbank	19	26.0	22	10.2	32	30.2	13	21.0
Banking Associations	1	1.4	5	2.3	25	23.6	0	0.0
Certified Public Accountants	47	64.4	184	85.6	46	43.4	43	69.4
BaFin with Bundesbank, Banking association or CPA	5	6.8	2	0.9	1	0.9	3	4.8
Total	73	100.0	215	100.0	106	100.0	62	100.0

tender basis. As shown in Table 5, BaFin rarely performs special audits itself, whereas the Bundesbank and certified public accountants in particular are utilised for this supervisory task. Interestingly, and perhaps contrary to common belief, the majority of banks are audited by certified accountants, with credit cooperatives audited most often by this party (85.6 per cent).

Given the mandatory nature of banking audits, the banks' assessments concerning special audits are largely positive. On the whole, banks agree that the special audits comply with the underlying auditing mandate as well as the *ex ante* requirements for clarity of information (see Appendix, Table A6). Furthermore, banks across all banking groups comment that auditors have been fair and competent and that there has been a free flow of information between banks and auditors. However, banks suggest that auditors are less familiar with individual bank's specifics. With regard to the adequacy of time spent on special auditing, credit cooperatives are most critical. Moreover, as with supervisory dialogues, banks across all banking groups observe higher costs and comparably lower benefits from special audits (see Appendix, Table A7). In particular, benefits from auditing are at least anticipated by credit cooperatives.

As shown by the results in the Appendix (Table A8), the same issue is associated with the type of auditor on site. It is noteworthy that auditors from BaFin/Bundesbank achieve the highest values in 7 out of 11 assessment categories. Within these categories they are rated even higher than auditors from banking associations. In this context, the largest differences are seen with regard to the auditors' acquaintance with the bank/the bank's business specifics and the auditor's expertise. Consequently, if auditors from BaFin and Bundesbank are involved, then the benefits of special audits are considered much higher than the costs. In contrast, the benefits of special audits are considered lower than costs if the onsite auditing role is performed by banking associations or certified public accountants.

Feedback concerning auditing and supervisory action taken by BaFin as a consequence of unsatisfactory audit results is mainly classified as appropriate by German banks. Considering the mandatory nature of banking supervision, assessments concerning the timeframe between auditing and giving feedback as well as the content and form of the feedback are largely positive (see DIW: Tables 4-16, 4-28, 4-29[2]). Only 10 per cent of all banks interviewed consider supervisory feedback and action as inadequate. In these cases, an excessively long period between auditing and giving feedback was criticised as well as an inappropriate feedback style compared with the degree of regulatory breaches by banks.

Supervisory authorities' personnel

To begin with, nearly half of all banks interviewed (notably credit cooperatives and savings banks) did not feel sufficiently confident to judge BaFin's and Bundesbank's personnel (see Appendix, Tables A9 and A10). The reason for this lower response rate might be due to the fact that credit cooperatives and savings banks rarely — if at all — seek active communication with the official supervisory authorities but rather with respective banking associations.

Those banks providing an assessment describe their experience with supervisory personnel as generally positive. However, on all assessment categories, satisfaction with Bundesbank personnel is consistently much higher than satisfaction with BaFin personnel. In particular, banks from all banking groups underline that Bundesbank's supervisors change less often, are more competent, have a better understanding of individual banks' business models, act more pragmatically and have a higher standard of practical knowledge (see Appendix, Table A9 and A10).

Interaction between supervisory authorities

The allocation of supervisory responsibilities between BaFin and Bundesbank is seen as critical by all banking groups (see Appendix, Table A11) and is less transparent for credit cooperatives. There is however dissent as coordination between both authorities is mainly observed as close. The contrast of a less transparent allocation of responsibilities on the one hand and a close cooperation between the authorities on the other may indicate that Germany's supervisory authorities are perceived as a 'black box' by supervised banks. Again, this perception is notably more frequent among credit cooperatives.

Financing BaFin

The controversial manner in which BaFin is financed is a matter of public debate. It is thus a little surprising that almost 20 per cent of banks in the sample make no comment on whether the principle of 'pay-as-you-go financing' has proven worthwhile, and whether the current system of making the German banking sector solely responsible for financing BaFin should be replaced with an alternative solution (see Appendix, Table A12). The individual assessments given by banks are obviously influenced by bank group membership. Thus, savings banks and credit cooperatives do not approve of the 'pay-as-you-go financing' whereas commercial banks do. Moreover, savings banks and credit cooperatives feel that their financial contribution is not adequate and tend to favour the abolition of the present system of funding BaFin, although they do not provide any alternative suggestions. Only a few banks support a cost-by-cause principle. Following *ex ante* technical discussions showing that the bulk of BaFin's operating costs stem from activities outside of its key supervisory role, the banks tend to agree that there is a clear argument for BaFin to be subsidised from the public purse.

Bureaucratic burden

Most banks have felt significant increases in the bureaucratic burden since the founding of BaFin in 2002. However, there are striking differences between assessments across different banking groups, for example, a deviation of approximately 30 percentage points between the assessment of savings banks (93.8 per cent; upper limit) and commercial banks (64.4 per cent; lower limit; see Table 6). No evidence was found to suggest that these differences are due to bank size. Instead, as mentioned above, savings banks and credit cooperatives are additionally supervised by their competent associations and thus have to bear a relatively higher bureaucratic burden.

Banks across all banking groups comment that regulations regarding money laundering involve the most bureaucracy (minimum 73.8 per cent of commercial banks and maximum 93.8 per cent of savings banks; see Table 7). One might conclude that banks are frustrated by such regulation as they have to act as agents on behalf of the state to combat crime without considerable compensation. Bureaucracy due to supervisory disclosure requirements — the core supervisory instrument in order to prevent financial systemic fragility — is at second place (minimum 40.7 per cent of savings banks and maximum 70.2 per cent of commercial banks). Left far behind is the government's right to screen banks' customer accounts — a regulatory function provided in the legislation to prevent tax evasion.

These findings correspond with a study by IW Consult[11] that was commissioned by the coalition of all five German bank associations (*Zentraler Kreditausschuss*). According to this survey, the largest bureaucratic burdens in banking result from preventing and

Table 6: Assessment of change in bureaucratic burden since 2002

Bureaucratic burden	(1) Comm. banks Absolute	Percent	(2) Credit coop. Absolute	Percent	(3) Savings banks Absolute	Percent	(4) Others Absolute	Percent	CHAID pools	p
Decreased	3	3.4	0	0.0	0	0.0	1	1.5	1; 2/4; 3	0.0013
Increased	56	64.4	210	84.7	106	93.8	52	80.0		
Steady	28	32.2	38	15.3	7	6.2	12	18.5		
Total	87	100.0	248	100.0	113	100.0	65	100.0		

Table 7: Regulations inducing highest bureaucratic burden

Regulations	Comm. banks Absolute	Percent	Credit coop. Absolute	Percent	Savings banks Absolute	Percent	Others Absolute	Percent	CHAID pools	p
(1) Disclosure requirements	59	70.2	118	48.2	46	40.7	54	85.7	1; 2/3; 4	0.0000
(2) Screening accounts	28	33.3	89	36.3	46	40.7	12	19.0	1/2/3; 4	0.0378
(3) Money-laundering	62	73.8	221	90.2	106	93.8	29	46.0	1; 2/3; 4	0.0000

Multiple specifications allowed.

combating money laundering (€775m pa), the handling of capital gains tax (€628m pa), and from notification requirements for the purposes of financial statistics (€254m pa).[11]

The above assessments highlight distinct differences among the various banking groups. In particular, savings banks and credit cooperatives perceive requirements arising from money-laundering prevention as the greatest burden. In contrast, larger commercial banks with cross-border activities particularly complain about supervisory disclosure requirements, which might be due to the increased bureaucratic burden of international banking, which is accompanied by reporting requirements in various formats from a multitude of supervisory authorities.

Overall satisfaction with banking supervision

Overall satisfaction with banking supervision averages 51.25 points and is hence very close to the middle of the spectrum between 'very dissatisfied' (denoted with '0') and 'very satisfied' (denoted with '100') (see Table 8).

Given the bulk of criticism voiced during *ex ante* technical discussions and within the public debate, this result is fair. However, with overall satisfaction showing an average index value of 51.25 points, it underperforms the index values reached in the assessment of both supervisory authorities' personnel and special audits (see earlier). Notice however, that due to different data interpretation techniques, the received mean index values in Table 8 and Figure 1 differ slightly from each other. Values across different banking groups do not vary greatly except for commercial banks, which obtain a significantly higher average value of 59.44 points.

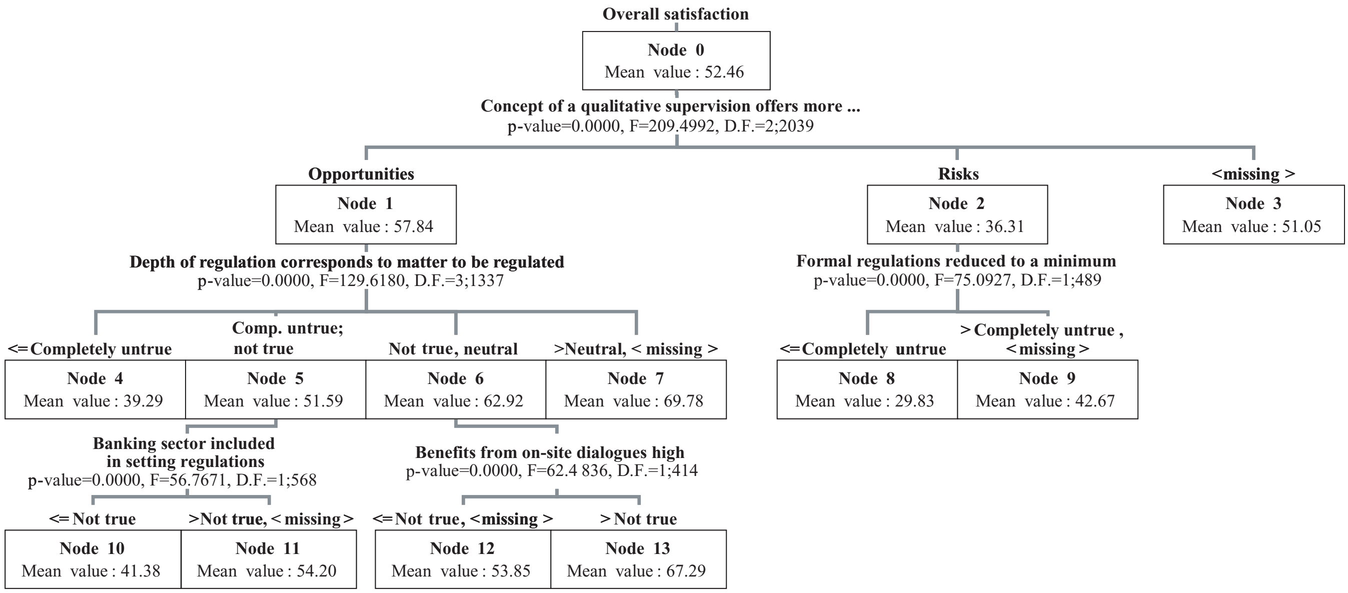
Furthermore, the majority of commercial banks and credit cooperatives perceive quality to be unchanged, whereas the majority of savings banks observe an increased quality of banking supervision for the period 2002–06 (see Table 9).

In addition, the CHAID algorithm is applied to this assessment category to empirically evaluate statistically significant drivers of banks' overall satisfaction concerning banking supervision (see Figure 1). As a general result, the empirical analysis indicates that the regulatory burden as measured by the predictor variables 'depth of regulations corresponds to the matter to be regulated' and 'formal regulations are reduced to a minimum' is a significant driver (predictor) of overall satisfaction concerning banking supervision in Germany. This especially holds for savings banks and credit cooperatives, which criticise the bureaucratic burden

Table 8: Averaged overall satisfaction with banking supervision

Banking groups	Averaged value	CHAID pools	p
(1) Commercial banks	59.44	1/4; 2/3	0.0000
(2) Credit cooperatives	49.50		
(3) Savings banks	51.56		
(4) Others	55.38		
Total (weighted)	51.25		

Spectrum of the scale reaches from 0 for 'very dissatisfied' to 100 for 'very satisfied'.



CHAID parameters: α_{merge}=5%, α_{split}=5%, Bonferroni-adjusted p-values (F-statistics) weighted.

Figure 1: Drivers of overall satisfaction with banking supervision

Table 9: Assessment of the change of banking supervision's quality (2002–2006)

Quality	(1) Comm. banks Absolute	Percent	(2) Credit coop. Absolute	Percent	(3) Savings banks Absolute	Percent	(4) Others Absolute	Percent	CHAID pools	p
Increased	37	43.0	92	37.1	56	52.3	34	54.0	1/2;3/4	0.0085
Steady	43	50.0	143	57.7	48	44.9	28	44.4		
Decreased	6	7.0	13	5.2	3	2.8	1	1.6		
Total	86	100.0	248	100.0	107	100.0	63	100.0		

of anti-money-laundering measures as well as the excessive extent and depth of regulatory interventions (see earlier).

The findings also suggest that the strongest driver of overall satisfaction is best described by the predictor variable 'bank manager's attitude towards a future concept of qualitative banking supervision'. The individual manager's attitude towards 'the business of banking' *per se* provides a significantly stronger influence on the assessment and perception of banking supervision than the manager's experience with supervisory processes, instruments and auditors.

CONCLUDING REMARKS

Optimising banking regulation and supervision in Germany

Taking into account the specific character of the relationship between German banks and supervisory authorities, supervisory bodies receive a considerably better assessment than one might expect given the public debate. Moreover, quality judgments given by the sampled banks are better than assessments they themselves receive in their own customer surveys.[12] However, any general conclusion must be drawn with caution and political recommendations have to be given with care due to the unusual system of banking and banking supervision in Germany. One must bear in mind that the German banking sector comprises three different banking groups with different precepts in banking and hence different attitudes towards banking regulation and supervision. Furthermore, in addition to the official authorities, the respective associations for savings banks and credit cooperatives also perform a supervisory role for their members. These facts could distort the measurement of the quality of the relationship between supervisory authorities and banks in Germany. Hence, further cross-country studies could help obtain a standard for comparison. Nonetheless, there is still room for improvement.

Reducing banking supervision to its origins

The remit of the supervisory authorities did not originally extend to preventing money laundering and gathering information on customer accounts. However, these roles have significantly increased the bureaucratic burden for banks and influence their assessments of supervisory instruments. Thus, to improve the situation for banks, two possible solutions lend themselves: either banks are compensated for the additional work, or banking supervision is reduced to its core task, ie enforcing depositors' rights and preventing systemic fragility.

Deregulation/limiting bureaucracy

The huge supervisory effort necessary to implement Basel II has been variously criticised, including by the supervisory authorities themselves. For this reason, more attention should be given to the instruments of market control and discipline which, under certain conditions, could in part substitute for state regulation. This has become even more urgent now that in the light of the global subprime crisis the discussion regarding a more severe banking regulation has begun.

Increasing transparency and communication

Keeping the survey's results in mind, efficient banking supervision requires banks to understand all aspects of the national supervisory strategy (especially the new concept of 'qualitative supervision'). Moreover, the benefits from individual supervisory processes (eg risk-adjusted audits, retaining the principle of proportionality, handling the control and monitoring of banks' operational risks), and from onsite dialogues and special audits in particular, should be clarified more intensively.

Supervisory responsibility

One might ask whether the 'supervisory triangle' consisting of auditors from the bank associations, BaFin and Bundesbank (and the certified public accountants working on their behalf) has been sufficiently efficient and effective in monitoring and controlling banks. While policy makers in Germany still recommend that banking supervision should be carried out by both the Deutsche Bundesbank as well as the BaFin, the explicit definition of responsibilities and coordination processes between supervisory authorities becomes increasingly important.[13]

Rethinking BaFin's governance

Although the matter is extensively discussed in political circles, the results from the survey do not suggest any need to reform BaFin's organisational structure. Nonetheless, political influence within BaFin should not be increased as 11 of its 21 board members also hold a political mandate. Instead, more independent expertise is required. Accordingly, this paper rejects the idea of subsidising BaFin through tax revenue as this would necessarily increase the state's influence over bank supervisory authorities.

Further research

Aside from a Norwegian survey, this evaluation is the first study to provide a representative assessment of supervisory processes and instruments by the banking sector itself. Studies of this type should be conducted not only in Germany, but also at the European and global level, for the three reasons explored below.

First, the implementation of a harmonised international supervisory framework will only succeed if supervisory authorities around the globe strive for related goals. However, historical and hence different traditions in banking regulation as well as different emphases regarding regulatory sub-goals (such as efficiency goals or protection and promotion of national financial markets) may distort the harmonisation process. Hence, the most important obstacles to harmonisation emerging from different institutional settings and supervisory practices have to be evaluated before starting any harmonisation. Although financial assessment programmes to measure the degree of convergence in international banking regulation are being implemented by the IMF, World Bank and, shortly, CEBS, these surveys do not as such address the banking sector itself but rather central bankers and national supervisors. This paper suggests that studies like the survey at hand help highlight the obstacles to harmonisation as they not only reveal the different institutional settings but also the different country-specific traditions in banking supervision.

Secondly, in September 2004, the European finance ministers invited the European Commission to examine possible explanations concerning the relatively low level of cross-border mergers and acquisitions between financial institutions in Europe. Next to poor expectations regarding cost savings and increased revenue, banks highlighted the misuse of supervisory power to block cross-border mergers as a possible obstacle to merger activity. The Commission has already taken initial steps to propose legislative changes, aiming at improving and clarifying the decision-making process of supervisory authorities. Nevertheless, by revealing country-specific supervisory traditions, studies like the German survey may help to identify why and how national supervisory authorities impede national merger activity.

Thirdly, recent empirical work has addressed the question of if and how regulatory structures in different countries may affect banks' performance, soundness or systemic stability in general. When controlling for the country's institutional embodiment of banking supervision, relevant empirical studies usually provide grouped supervision variables that consist of sub-variables like 'supervisory power', 'independence of the supervisory authority', 'tenure of supervisors' and others. In this context it could be helpful to generate further sub-variables using the results of assessment studies as they are presented within the German survey. As these sub-variables would proxy the banks' appreciation of supervision, the effects of different supervisory structures on banks' performance, soundness or systemic stability in general might be explained more comprehensively.

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Appendix

Table A: Main results of the German survey

Table A1: Assessment of the supervisory strategy

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Clear and transparent supervisory strategy	82	64.94	21.82	205	61.34	25.41	85	64.12	22.97	54	65.74	20.77	—	0.9137	1,665	62.59	24.29
Authorities focus on systemic risk	79	62.97	24.63	206	50.73	29.52	86	54.36	28.75	56	61.16	24.27	1/4; 2/3	0.0025	1,670	53.32	28.84
Authorities focus on individual bank risk	83	56.02	26.93	214	44.74	30.72	93	55.38	26.54	60	56.25	28.97	1/3/4; 2	0.0004	1,755	48.80	29.77
'Prompt Corrective Action' in time (preventive regulation)	68	55.15	25.76	170	51.62	25.39	62	53.63	23.01	46	58.15	19.04	—	1.0000	1,348	52.73	24.69
Positive influence on international regulatory issues	64	47.66	26.99	163	32.67	27.55	73	41.10	29.28	51	56.37	23.37	1/3; 2; 4	0.0000	1,354	37.48	28.40

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.
For all assessment categories: CHAID-parameters: α_{merge} = 5%; α_{split} = 5%; Bonferroni-adjusted p-values (F-statistics).

Table A2: Assessment of the clarity of regulations on qualitative supervision (MaRisk)

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Management of credit risks	84	71.73	17.69	246	64.74	21.76	110	67.27	19.08	64	67.58	20.26	—	0.1108	1,997	66.10	20.84
Management of market risks	87	68.68	18.37	246	60.67	22.14	110	64.77	19.83	60	66.67	20.92	1/3/4; 2	0.0122	1,996	62.64	21.38
Management of operational risks	88	53.41	25.48	243	46.19	27.15	110	49.77	23.34	63	57.54	23.17	1/4; 2/3	0.0124	1,989	48.31	26.11
Management of liquidity risks	84	65.18	20.54	246	60.16	25.22	109	56.88	22.01	62	60.48	21.01	—	0.2597	1,990	59.97	23.96
Internal capital adequacy	87	58.05	22.71	246	62.30	21.99	110	61.36	20.50	64	56.64	23.67	—	0.2326	2,004	61.43	21.82
Internal risk management	88	63.07	20.40	245	62.76	22.02	108	63.66	18.84	63	62.70	23.28	—	1.0000	1,991	63.04	21.19

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A3: Assessment of margins with regard to the implementation of MaRisk regulations

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Management of credit risk	85	50.29	19.86	244	46.62	21.43	110	49.09	19.43	63	55.95	21.40	1/2/3; 4	0.0307	1,988	48.02	20.93
Management of market risk	85	50.88	19.84	242	46.80	20.31	110	47.50	19.73	58	53.88	18.02	—	0.0703	1,968	47.73	20.07
Management of operational risk	86	57.27	21.31	227	47.25	23.41	105	55.95	19.15	61	61.48	20.70	1/3/4; 2	0.0000	1,879	50.98	22.62
Management of liquidity risk	85	47.94	21.89	239	52.20	22.64	103	54.37	19.31	62	58.47	19.70	—	0.1731	1,932	52.61	21.81
Internal capital adequacy	86	56.69	20.45	244	49.59	20.78	108	53.47	18.55	62	60.89	20.05	1/3; 2; 4	0.0008	1,980	51.71	20.43
Internal risk management	88	51.42	20.88	242	46.38	21.48	110	50.68	18.38	61	57.79	19.65	1/3; 2; 4	0.0017	1,981	48.44	20.84

Scale from 0 for 'very low', 25 for 'low', 50 for 'neutral', 75 for 'high' and 100 for 'very high'.

Table A4: Assessment of supervisory dialogues

	(1) Comm. Banks			(2) Credit Coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Covering important issues	85	78.53	25.92	209	72.25	26.66	107	81.54	19.22	63	78.17	23.97	1/3/4; 2	0.0087	1,795	75.45	25.08
Clear structured	85	72.94	24.76	210	78.69	23.10	108	77.78	21.44	63	75.79	21.98	—	0.4473	1,804	77.72	22.81
Open for banks' concerns	85	78.24	23.40	211	76.78	23.52	108	77.55	22.13	63	76.98	21.67	—	1.0000	1,809	77.13	22.99
Supervisors are familiar with the bank's business	86	74.71	24.70	211	76.54	21.28	107	75.47	19.11	62	71.77	21.94	—	1.0000	1,806	75.85	21.17
Supervisors are familiar with the bank's specificity	86	74.71	23.17	210	73.93	23.37	107	74.53	20.60	62	71.77	22.40	—	1.0000	1,801	74.04	22.60
Onsite dialogues are cooperative	86	83.43	21.56	209	84.69	22.84	108	83.80	20.60	63	81.35	23.75	—	1.0000	1,801	84.16	22.17
Costs from onsite dialogues are low	85	60.59	25.11	210	45.24	28.01	107	43.93	26.34	63	59.92	27.51	1/4; 2/3	0.0000	1,800	47.34	27.78
Benefits from onsite dialogues are high	86	55.23	26.88	208	35.34	26.03	105	38.57	21.10	61	47.95	21.06	1/4; 2/3	0.0000	1,781	38.91	25.54

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A (continued)

Table A5: Influence of special audits on risk aversion

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Influence of special audits on credit transactions	72	61.11	27.16	233	64.48	31.69	101	57.92	28.05	61	72.13	21.94	—	0.0985	1,862	63.14	30.22

Scale from 0 for 'fully', 25 for 'largely', 50 for 'partly', 75 for 'largely not' and 100 for 'fully not'.

Table A6: Assessment of special audits

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Limited to auditing mandate	69	85.14	21.57	209	86.48	23.25	101	91.09	15.65	54	79.63	25.73	—	0.1126	1,722	87.10	21.78
Adequacy of timeframe	69	65.58	26.46	204	58.58	30.99	97	68.81	29.32	53	67.45	29.25	1/3/4; 2	0.0154	1,678	62.00	30.37
Clear information requirements *ex ante*	65	74.62	25.58	201	74.50	28.61	97	78.35	25.68	53	77.36	27.41	—	1.0000	1,654	75.51	27.59
Auditors are familiar with specifics of bank's business units	68	52.21	26.88	204	54.66	28.77	99	67.42	30.19	55	59.55	27.00	1/2/4; 3	0.0012	1,688	57.65	29.29
Auditors are familiar with the bank's specifics	68	48.53	26.93	204	47.92	29.44	96	55.99	31.57	55	51.82	27.99	—	0.2248	1,676	49.94	29.75
Auditors are competent	68	77.57	21.66	207	71.01	28.18	101	78.96	22.29	54	71.76	24.30	1/3; 2/4	0.0288	1,710	73.55	26.29
Unrestrained communication with auditors	68	76.47	25.87	209	69.86	29.73	101	78.47	23.19	55	78.18	25.93	1/3/4; 2	0.0180	1,722	72.89	27.97
Auditing issues discussed *ex ante*	68	68.75	28.45	209	62.20	29.93	101	72.03	27.90	54	74.54	26.37	1/3/4; 2	0.0051	1,721	65.73	29.42
Fairly assessment by auditors	65	71.54	27.91	205	69.51	28.39	96	76.30	26.00	53	73.11	23.94	—	0.4754	1,672	71.45	27.63

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A7: Assessment of costs and benefits from special audits

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Costs from auditing are low	69	30.80	23.54	208	25.72	26.80	100	27.25	23.33	55	30.00	25.18	—	0.8163	1,715	26.76	25.63
Benefits from auditing are high	69	43.12	27.75	207	24.64	27.37	97	32.22	23.09	53	41.04	25.52	1/4; 2; 3	0.0000	1,695	28.87	27.02

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A8: Assessment of special audits according to type of auditor on site*

	(1) BaFin/Bundesbank			(2) Banking assocs.			(3) CPA firm			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Limited to auditing mandate	345	89.93	17.74	120	86.50	22.90	1252	86.49	22.53	1; 2/3	0.0254	1,717	87.18	21.71
Adequacy of timeframe	337	67.16	29.71	120	73.11	31.68	1216	59.55	29.95	1/2; 3	0.0000	1,673	62.05	30.32
Clear information requirements *ex ante*	336	87.74	15.98	112	69.21	27.07	1201	72.89	29.09	1; 2/3	0.0000	1,649	75.67	27.49
Auditors are familiar with specifics of bank's business units	337	74.98	21.98	120	83.41	25.54	1225	50.53	28.00	1; 2; 3	0.0000	1,682	57.77	29.29
Auditors are familiar with the bank's specifics	333	70.91	21.44	116	74.15	28.53	1221	42.05	27.81	1/2; 3	0.0000	1,669	50.03	29.78
Auditors are competent	349	86.06	15.84	120	83.38	24.35	1235	69.27	27.33	1/2; 3	0.0000	1,704	73.70	26.19
Unrestrained communication with auditors	349	83.16	19.26	117	80.74	28.07	1250	69.46	29.08	1/2; 3	0.0000	1,716	73.02	27.90
Auditing issues discussed *ex ante*	348	79.46	18.79	114	72.23	31.55	1253	61.38	30.41	1; 2; 3	0.0000	1,715	65.77	29.46
Fairly assessment by auditors	335	78.06	23.23	116	75.62	29.61	1216	69.42	28.14	1/2; 3	0.0000	1,666	71.59	27.55
Costs from auditing are low	349	31.33	25.82	112	31.68	25.06	1249	25.20	25.46	1/2; 3	0.0000	1,709	26.87	25.64
Benefits from auditing are high	342	47.21	24.16	102	28.64	22.71	1245	23.96	25.91	1; 2/3	0.0000	1,690	28.96	27.01

* Analysis based on weighted total of banks.

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A (continued)

Table A9: Assessment of supervisory authorities' personnel

BaFin	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
… are easy to identify	80	74.69	26.23	101	62.87	29.92	65	69.23	25.68	61	72.13	27.42	1/3/4; 2	0.0398	1,056	67.30	28.32
… rarely change	82	65.24	25.38	63	65.48	25.57	40	64.38	26.49	55	60.00	25.28	—	1.0000	755	64.61	25.45
… are experts in their field	83	73.49	20.79	91	72.25	25.67	55	70.91	19.70	60	72.08	23.06	—	1.0000	969	72.24	23.06
… understand our business model	85	65.00	24.46	99	63.38	26.32	48	66.67	23.25	57	67.54	24.07	—	1.0000	983	64.82	25.08
… are pragmatic	85	56.76	27.65	94	50.53	30.00	59	51.27	26.02	57	53.51	28.91	—	1.0000	1,001	52.34	28.51
… behave reasonably	86	76.45	22.15	98	67.86	29.16	63	73.02	22.13	57	67.11	27.61	—	0.0840	1,040	70.69	26.28
… react quickly	82	56.71	29.67	96	60.94	27.82	48	53.13	28.07	59	50.85	27.06	—	0.2802	964	57.76	28.21
… have sound practical knowledge	82	51.83	27.44	90	52.78	29.61	55	51.82	27.58	56	50.89	22.85	—	1.0000	956	52.29	28.03

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A10: Assessment of supervisory authorities' personnel

Bundesbank	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
… are easy to identify	86	79.94	19.10	157	73.73	22.96	80	82.19	18.74	62	76.21	26.17	1/3; 2/4	0.0252	1,419	76.68	22.01
… rarely change	86	75.29	18.19	109	69.27	21.95	61	77.46	22.22	57	71.49	25.20	—	0.0873	1,088	72.35	21.80
… are experts in their field	86	82.56	15.37	173	79.77	18.15	82	82.32	17.78	62	75.81	23.07	—	0.3225	1,510	80.48	18.05
… understand our business model	87	73.56	19.20	164	74.85	20.44	75	78.33	17.11	60	69.17	22.72	—	0.2038	1,435	75.05	19.84
… are pragmatic	85	67.06	21.89	158	65.35	24.23	80	61.88	24.51	61	61.48	24.82	—	0.6536	1,421	64.57	24.01
… behave reasonably	87	78.45	19.50	167	79.94	19.64	85	82.65	17.26	61	78.28	21.15	—	1.0000	1,492	80.25	19.16
… react quickly	84	74.11	21.06	154	66.72	24.09	74	66.55	21.21	63	65.48	26.35	—	0.0548	1,377	67.65	23.33
… have sound practical knowledge	87	70.11	21.51	161	65.53	24.52	76	66.78	24.63	61	59.02	21.91	—	0.1030	1,425	66.04	24.00

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A11: Assessment of the interaction between supervisory authorities

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Transparent allocation of supervisory responsibilities	85	44.71	23.81	184	30.84	25.13	80	48.13	25.40	55	45.91	24.42	1/3/4; 2	0.0000	1,545	36.91	26.09
Adequate allocation of supervisory responsibilities	54	53.70	21.39	47	47.34	26.19	21	47.62	17.51	31	45.97	18.37	—	0.4934	993	40.93	25.26
Close coordination between both authorities	73	69.52	22.92	90	51.67	26.71	39	67.95	22.90	35	63.57	23.75	1/3/4; 2	0.0000	836	58.97	26.29
Coordination within BaFin optimal	62	46.77	23.30	121	36.78	25.83	42	49.40	21.73	41	46.34	24.72	1/3/4; 2	0.0033	495	48.76	23.05

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.

Table A12: Financing BaFin

	(1) Comm. banks			(2) Credit coop.			(3) Savings banks			(4) Others			CHAID		Total (weighted)		
	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	n	mean	st. dev.	pools	p	n	mean	st. dev.
Pay-as-you-go financing has proven	76	62.83	28.72	200	34.13	32.69	92	27.99	27.70	47	50.00	29.02	1; 2/3; 4	0.0000	1,643	36.43	32.54
Own amount of financing is adequate	80	56.88	27.26	218	32.00	30.73	93	31.72	26.87	57	47.37	27.42	1; 2/3; 4	0.0000	1,764	35.26	30.43
Substitution of 'full financing' by an alternative financing structure	72	46.88	39.57	196	76.40	35.10	92	86.14	26.04	45	62.78	36.39	1; 2; 3; 4	0.0000	1,609	75.10	35.34

Scale from 0 for 'completely untrue', 25 for 'untrue', 50 for 'neutral', 75 for 'true' and 100 for 'completely true'.