CHAPTER 7

SUMMARY, CONCLUSIONS, AND FURTHER RESEARCH

7.1 Theoretical Model and Main Findings

The theoretical model underlying this study can briefly be summarized as follows:

Certain activities in organizations can be characterized as risk mitigating or risky. Those organizations that engage in risk mitigating activities will experience less failure than those organizations that engage in risky activities.

This theoretical model was developed using a grounded theory approach which looked at five cases of catastrophic failure: the Bhopal chemical spill, the Chernobyl nuclear explosion, the Exxon Valdez oil spill, the explosion of the space shuttle Challenger, and the mis-grinding of the mirror for the Hubble Telescope.

The five cases were used to develop a set of five risk "factors". In the five cases studied, these risk factors all contributed to catastrophic failure. The risk factors identified from the cases were as follows:

1. **Process Auditing:** Process auditing is an established system for ongoing checks designed to spot expected as well as unexpected safety problems. Safety drills are included in this category as is equipment testing. Followups on problems revealed in prior audits are a critical part of this risk factor as well.

2. **Reward System:** The reward system is the payoff that an individual or an organization gets for behaving in one way or another. In this case, we are concerned with risky behavior. As is generally recognized, the reward system within an organization tends to have a powerful influence on the behavior of individuals within it. Similarly, the reward system that exists interorganizationally also influences the behavior of

organizations.

3. Degradation of Quality and/or Inferior Quality: Degradation of quality and/or inferior quality refers to the essential quality of the system involved as compared to a referent system that is generally regarded as the standard for quality.

4. Perception of Risk: The perception of risk involves two elements of risk: (1) Whether or not there was any knowledge that risk existed at all, and (2) If there was knowledge that risk existed, the extent to which it was acknowledged appropriately or minimized.

5. Command and Control: The command and control factor is borrowed from Roberts (1989, 1988, 1992). Roberts outlined command and control elements as separate factors, but I am combining them here and listing her separate factors as subfactors in my broader model. The command and control elements are:

1. Migrating decision making (the person with the most expertise makes the decision).
2. Redundancy (people and/or hardware), i.e. backup systems exist.
3. Senior managers who can see the "big picture", i.e. they don't micromanage.
4. Formal rules and procedures. A definite existence of hierarchy but not necessarily bureaucracy in the negative sense.

After identifying the risk factors that comprised the theoretical model, a set of five hypotheses was developed. The hypotheses are as follows:

Hypothesis 1: Risk mitigating organizations will have extensive process auditing procedures. Non-risk mitigating organizations will not have good process auditing procedures.

Hypothesis 2: Risk-mitigating organizations will have reward systems that encourage risk-mitigating behavior on the part of the organization and/or its members. Non-risk mitigating organizations will have reward systems that reward or promote risky behavior on the part of the organization and/or its members.

Hypothesis 3: Risk-mitigating organizations will have quality standards that meet or exceed the referrent standard of quality. Non-risk mitigating

organizations will have quality standards that do not meet the referrent quality standard.

Hypothesis 4: Risk mitigating organizations will correctly assess the risk associated with the given problem or situation. Non-risk mitigating organizations will not correctly assess the risk within a given problem or situation; such failure may be due to lack of knowledge about risk or mis-estimation of risk.

Hypothesis 5: (from Roberts, 1992). Risk mitigating organizations will have a strong command and control system consisting of the four following elements:

1. Migrating Decision Making
2. Redundancy
3. Senior Management has the "big picture"
4. Formal Rules and Procedures

Non-risk mitigating organizations will have command and control systems that lack some or all of the above four elements.

7.2 Model Testing

The model was tested by finding a set of organizations that fit the following parameters: risk of failure was high; comparative analysis was possible (failing and successful organizations could be compared against one another); and technological complexity was low.

The commercial lending divisions of banks were chosen for the study because they fit the parameters and because I felt that I could gain access to these organizations. Ultimately ten banks were included in the study. Four banks were in distress and the other six were financially strong.

Two studies were devised to test the hypotheses. The first was a qualitative study which utilized interviews at all of the subject banks. The second study was a quantitative survey which was conducted by distributing

surveys to the line lending officers in all of the subject banks.

7.3 Qualitative Findings

The results from the qualitative analysis show general support for all five of the original hypotheses. However, there is an imperfect fit between the model and the data. In particular, there is one bank, Bank E, which the model predicted should be in trouble, yet is a healthy bank.

Despite some discrepancies, I argue that the evidence from the qualitative study is strong enough to confirm the five hypotheses. I feel that if we look solely at the qualitative analysis, we would be inclined to accept the theoretical model.

7.4 Quantitative Study

The results of the quantitative study are more ambiguous than those of the qualitative study. One "problem" in analyzing the quantitative data gathered from the questionnaires centered around the use of the control variables and this is discussed in chapter six.

Briefly, in a full model where bank size is used as one of the control variables, size explains nearly all of the variance, and swamps out the other variables. In the first full model where size is incorporated, only two of the risk factors, process auditing and standard of quality, are significant and the portion of variance that they explain is very small.

However, although using control variables to account for differences

among the banks is important, bank size proved to be a problem variable because it reflects sampling bias. Large banks were reluctant to join my study at all, and only healthy large banks were willing to do so. Quite a few unhealthy large banks were contacted; a few even consented to participating initially and then later backed out of the study. As a result, the relationship between size and performance is to a great extent a sampling artifact.

If size is left out of the model as a control variable, but other control variables are left in, such as the personal characteristics of the bank officers, a different full model emerges. In the second full model, all of the factor variables (process auditing, risk perception, standard of quality and reward system) are significant. Thus, hypotheses 1, 2 and 3 can be supported if this second full model is used. Hypothesis 4 must be rejected because, while the coefficient is significant, the sign is opposite to what was predicted.

However, combined, these variables explain only about 9% of the total variance. I had hoped that a more powerful model would have emerged. Even so, it is possible that flaws in the instrument were responsible in some part for this outcome. This was an untested instrument and if I were to study more banks, I would definitely refine the questionnaire based on the way in which people responded to various items. For example, questions 29 and 30 (see Appendix B), were intended to measure risk perception. However, the "correct" answer to these two questions was obvious to a great number of the respondents. (This is evidenced by the fact that these two questions had the

lowest standard deviations of any questions on the survey).

Another problem in using the questionnaires was that they asked officers about the state of their bank "today". Since all of these banks have survived (despite the fact that some are still in trouble), that means that some amount of reform (perhaps along the risk dimensions I think are important) has already occured. In addition, particularly in the troubled banks, many of the loan officers who created the problems have left, and the new loan officers, the "reformers" have a very different perspective. Their answers may reflect not just how the bank operates but how it "should" operate.

In any case, because the questionnaires asked about current practices rather than information about past practices, we should have seen relatively little variance in the answers between "good" and "bad" banks. The fact that we found variance leads to questions about how much reform has taken place in the distressed banks. Has the FDIC been tough enough, and is it being tough about the right things? Is my study capturing risk factors that the FDIC is not capturing in its bank reviews?

7.5 Integrating the Findings

I feel that the findings from the qualitative study should be given more weight because they are based on a historical framework. This is unlike the quantitative study which only tells us about current practices.

The qualitative study gave me access to each bank's past as well as current practices. This was important because past practices varied widely

among the banks. Some engaged in risk-mitigating practices and others engaged in ones that were risky. It is the past practices which are documented in the qualitative analysis, particularly with respect to the troubled banks. The underlying research question in the qualitative study was: "What past behaviors accounted for a given bank's current state?".

This emphasis on historical behavior was important since loan portfolios do not go bad overnight. In addition, in today's environment, troubled banks are allowed to survive only if they make major reforms to their practices (and even that is not a guarantee of survival). All of the troubled banks in my study had made such reforms, as reported to me in the interviews. Thus, from the perspective of the qualitative study, current practices were relatively similar across banks (with the exception of Bank E, a healthy bank that has some risky current practices).

By way of contrast, the survey captured only current practices and weighed them against performance. Thus, if the banks had in fact all reformed their practices, we should have seen little variance in performance explained by the four factor variables. The fact that some variance still appeared suggests that internal reform and change is difficult and does not happen overnight in any organization. Finally, the emergence of variance suggests that there may be other risk factors that the FDIC and other bank regulators would want to consider in the monitoring of bank health.

7.6 Future Research Agenda

One lesson that clearly emerges from the above discussion is that the temporal issue is a critical one in studying performance. In building the original model for this study, I relied on historical analyses of catastrophic failures. The qualitative analysis in this dissertation utilized the same type of analysis in a comparative fashion.

When data that were based on the current practices of organizations were introduced, the analysis became less clear and less able to support the model. There are at least several ways in which this problem might be addressed in future work.

One way would be to look at a similar set of organizations which do not have the constraint of being regulated, or which are relatively more loosely regulated than banks. (It was only the threat of closure by federal regulators that forced the poorly performing banks to reform their practices).

For example, consider a given retail industry. Profit margins in retail are typically thin due to intense competition. Profit margins can easily be eroded even further by "shrinkage". (Shrinkage is the loss of inventory through various means--damage, employee theft and customer theft). If shrinkage is sufficiently large, it can threaten an organization's survival by destroying it's profits. One could look at shrinkage rates across a set of firms in a given retail industry and see how the model proposed in this paper fit or didn't fit. In such a study, current practices data would probably be sufficient and historical data

might not be important at all. The methodology for collecting the data could be surveys, interviews, or some combination of the two.

Another method could be used when the problem faced is similar to the one presented in this paper--the case when temporal elements are important and historical data must be collected. In some cases, it might be appropriate to administer a survey instrument repeatedly over time to track the changes in performance or outcome variable along with changes in the risk factors set up to operationalize the model laid out in this paper.

Finally, the future research agenda should be one in which studies will be conducted in a wide range of industries (like the retail example given above) to test the robustness of the model. As noted earler on in this paper, the only criteria for selecting organizations were: 1) They be in an industry which had high risk of some type (the potential for litigation alone places almost all organizations in this category); 2) The industry had to be comprised of firms which were succeeding and failing on some measure, allowing for comparative analysis; 3) The firms had to be low in technological complexity.

The second criterion and third criterion were selected because they differentiated my work from previous work in this area. I expected that because research along these two criteria had not been done before that my research in this area would represent my contribution to the field in the area of risk analysis and risk management.

As a final note, an optimal study would include as many organizations as

possible within a given industry, although getting large numbers is difficult. With regard to methodology, interviews are time consuming and more difficult than surveys, but provide rich data. And, as noted in this study, interviews sometimes provide data that are critical to making conclusions about the outcome of the study. Surveys provide a way to reach a large number of individuals within an organization, and a way to take the organizational "pulse". However, it would be my preference in any study to back up surveys with at least a few interviews to be sure that radically different views were not emerging from the two sources.

7.7 Chapter Summary

This chapter has summarized the findings of both the qualitative and quantitative studies. The results of the two studies have been compared and integrated. Problems that emerged in the quantitative study were also discussed.

Conclusions about the differences in the two sets of findings were discussed, and the importance of temporal measures was emphasized. It was pointed out that temporal differences probably accounted for much of the difference in results between the two studies.

Furthermore, a future research agenda was established. Ways in which to handle temporal problems were discussed. Also discussed were the ways in which the model laid out in this paper could be tested in a wide variety of organizations using various methodologies.

Finally, I believe that I made a significant contribution to the area of

research on risk mitigation in organizations. Specifically, I developed a broader and richer model than had been previously been used in this type of work. And, I tested it in two new areas. I looked at firms that were both succeeding and failing within the same industry, accomplishing a type of comparative analysis which had not been done before. Furthermore, I looked at firms which were low in technological complexity and showed how concepts that applied to managing risk in high-tech situations could be generalized to other settings.

APPENDIX A: SUMMARIES OF INDIVIDUAL BANKS

BANK A -- Summary

Bank A is a very large bank (asset size in excess of $ 20 billion). Its lending activities are wide ranging in scope, but this study looked only at its corporate lending activities which are statewide. Corporate lending to borrowers with $10 to $100 million in sales is done at corporate lending offices in various locations throughout the state.

Bank A has a conservative lending policy, due in part to previous problems in its loan portfolio. Right now, Bank A is trying hard to grow revenues, and build the balance sheet (add assets--i.e. loans) but not at the expense of quality. Loan risk is an extremely important factor.

The bank has a rating system for loans based on an 8 point scale. This rating is important and officers are expected to follow accounts closely, and change the risk rating if there is any deterioration in the borrower's condition. Failure to do so can result in penalties.

There is a centralized loan documentation center. However, when the documents are returned to the officer, it is up to him/her to be sure that they are correct before they are signed by the customer.

Credit approval is kept separate from the administration of the line lending units. All lending authority and exception pricing authority belong to credit administration, a staff function.

Credit exam comes to each unit roughly once a year. If more than 5% of the loan ratings are too high than the entire lending unit is punished. There is an extreme emphasis on downgrading credit as soon as it is appropriate to do so.

Management appears to have the big picture in this organization. The strategy is good. Management understands the risks, and risk drives the strategy.

Rewards are tied to loan production. The incentive plan is tied to credit quality as well as marketing and sales (of both loans and deposits). Officers also get credit for referrals made to other bank departments like personal banking, small business etc. However, new loans is about 25% of the performance measure.

Loan officers have very limited lending authority. Most loans are well in excess of the loan limits. The unit manager has significant authority, but any credit decision that he makes is reviewed within 30 days by credit administration. If the reviewer decides that the decision was flawed, a written letter is sent to the unit manager. If warranted, the unit manager's lending authority can be lowered or stripped by credit administration.

The bank has a fairly rigid set of rules and procedures. Several interviewees called the rule books "bibles". Bank officers consult the rule books frequently in the course of their day to day work.

Bank B -- Summary

Bank B is very large bank (asset size in excess of $20 billion). Like Bank A, its lending activities are varied. However, in this study, I looked only at its corporate lending and commercial real estate lending activities. These activities are conducted in lending units located statewide. The typical borrower has roughly $10 to $100 million in sales, and the loan size is in excess of $1 million.

The bank is relatively conservative in its lending policies and is not willing to take any "calculated" risks. The bank wants to avoid losses at all costs. It is important to the bank to also avoid non-accrual loans and classified loans.

At the present time, the bank does have some problems in its commercial real estate loan portfolio. These problems are due in some part to the recession in California.

Loan officers have no lending authority. Lending authority is mainly concentrated in the hands of the credit administrators (staff officers), not on the line. There is no loan committee for approving the maximum size loans; that is done by a single person.

The bank has a system of documentation centers (now being concentrated into a single center). The centers spread the financial statements of the borrowers and monitor for compliance on loan convenants.

The bank has three manuals. One is the credit policy manual which has just seven pages describing exceptions to loan policy. The second manual is the underwritng guidelines (25 pages) describing loan to value ratios, collateral guidelines etc. The third manual is the commercial loan manual, which is highly detailed and very thick. This manual is used by the clerks at the documentation centers.

Information flows well from the bottom to the top of this organizaton. Officers are encouraged to bring problems forward as soon as possible.

The reward system is structured so that there is an indirect tie between an officer's bonus and loan production (the bonus can be up to 20% of an officer's base pay). Officers are given goals for new business, loan generation, and credit quality. Officers are fired if there is evidence of gross malfeasance when a loan goes bad.

Exception tracking is extremely important. In 1990, the regulators came in and found fault with the exception tracking system (there was none). There were too many violations of policy. Now, all exceptions are carefully tracked. If anything, the loan files now tend to be overdocumented.

The chairman of the bank is very much a hands-on manager. He personally reviews all loans in excess of $1 million.

Credit exam visits each office once a year. They are quite thorough, exmanining about 60% of the portfolio. They look mainly at the merits of the credit itself.

The bank's policy is to hire college grads and MBA's. New hires undergo a training program of nine months. Of this, six months is classroom training. This is very costly--the bank estimates that after five years it retains about 20% of those people. However, it is an effective tool in instilling the culture of the organization. Continuing education is now required as well. Officers are required to do 25 hours each year.

BANK C -- Summary

Bank C is a fairly large bank (asset size is in excess of $3 billion). Its commercial lending activity is based out of commercial lending centers located statewide. The average loan size is in excess of $1 million, and the bank is now trying to eliminate loans in its portfolio that are less than $1.5 million in size (in an effort to increase account profitability).

The bank can be characterized as very conservative in its lending policies at the present time. However, several years ago, its policies were more liberal, and some problem loans remain in the portfolio as a result.

The current focus is on quality loans and on profitability. Loans below a certain amount must be charged Prime plus 3%, to hit the profitability target. Also relationships have a target minimum annual net income that they must reach.

Loan officers have no lending authority. Loan authority is centered in loan administration (a staff function). Loan approvals up to a certain dollar amount are approved by the Loan Administration Officer. Beyond that limit, loans must go to Loan Committee. Loans over a certain amount must also be approved by the Bank's board of directors.

Officers are compensated with straight salary. There is no bonus system. Merit increases are based on an annual set of objectives (management-by objective system), which include a variety of criteria such as loan quality, relationship management etc as well as loan production.

The bank has a number of manuals and rules which are closely followed. Rules and procedures are an important part of the culture in this bank. The bank has even implemented automated call tracking reporting--all calls on prospects, or existing customers (in person, or by phone), must be documented.

Credit examination visits each unit about once every twelve months. The examination team looks at all aspects of the credit file -- compliance issues, documentation, credit terms and conditions. Almost 100% of the portfolio is surveyed at each exam.

Training is done in-house. Many lenders are hired from other banks, so they are experienced. However, classes are conducted regularly to keep them up to date.

One comment made by several officers interviewed was the perception

that the bank was top heavy. The officers felt that the bank could eliminate some of the "bureaucracy" at the top which was excessive for a bank of this size, and run "leaner" and more efficiently.

BANK D -- Summary

Bank D is a medium sized bank (asset size in excess of $900 million). The bank is involved in both commercial and retail banking operations. Its branches are all located within the Southern California area. Commercial lending is conducted at several locations, including the branches.

Currently, the bank has MOU (Memo-of-Understanding) status with the FDIC. That status is due to the bank's high level of non-performing or classified loans as well as the high level of "volatile" deposits on the liability side of its balance sheet (the bank has specialized for a number of years in catering to escrow companies and handling their deposits).

At the present time, the bank must maintain its Tier 1 capital at 6.5%, and must get the approval of the FDIC to pay out dividends. It is also required to substantially reduce its classified assets by June of 1994 and reduce its dependence on volatile liabilities (brokered deposits).

The bank's classified loans are due in part to the recession and due in part to faulty underwriting standards. The bank has an enormous real estate exposure. This constitutes the bulk of the classified loans.

Many of the real estate loans were not based on cash flow, but were 100% collateral dependent. It appears that no sensitivity analysis was conducted at the outset of the loan. Thus, when property values fell and the loans began to exceed the values of the properties, borrowers began to walk away from the loans.

The bank has gotten increasing conservative with respect to new deals. However, diversification in the portfolio is still a problem. The bulk of the loans are in the $1.5 to $2 million range, and the bank's profits run about $1 million per quarter. A few bad loans could seriously erode profits.

The bank uses a computerized tickler system for documentation. Documentaton is standardized and the bank uses loan agreement on all lines of credit. At the present time, however, credit policy exceptions are not systematically tracked.

The bank is just now coming out with a new policy manual. Right now there is an old policy manual, but it is not used very much. People seem to make a lot of exceptions to bank policy and/or rely on informal rules.

The reward system is not centered around meeting loan goals. There is

no bonus for making new loans. The merit increase is based on portfolio management (renewing lines of credit on time etc.)

Several officers pointed out that the bank did not punish people who made bad loans. It was clear that several people felt that this was a deficiency of the bank.

BANK E -- Summary

Bank E is a countywide bank located in a geographically isolated area. It is a medium sized bank (asset size in excess of $900 million). The bank faces little competition from the "majors" (the large banks in the state), and its local rivals are in financial trouble. As a consequence, Bank E is able to skim the "cream" from the available loan portfolio. It follows a low risk, low yield strategy. Its average loan size is less than $1 million, and it charges accordingly (Prime plus 2% or more).

Documentation is handled by the central loan department. However, the bank does not generally use loan agreement on its loans.

Until recently loan administration and credit examination were not distinct entities. The loan administrator was supposed to function as the credit examiner. Recently, a credit exam department was set up and they are now establishing a regular review schedule etc. They expect to review units and portions of the portfolio on an annual basis.

The bank has written rules and procedures but the loan officers do not follow them. Instead, informal guidelines are used. One officer that I talked to told me that he didn't even know where his manual was, and that when he received updates he just threw them in the trash.

One advantage that the bank has is that its lending is based on "relationships". Many borrowers are very well known to the bank and have been customers for many years. Because the bank's territory is small, it is also relatively easy for the bank to learn which potential borrowers to avoid.

The bank also has high loan authority limits for line officers (especially given its size). While the larger banks in this study give no loan authority to line officers, Bank E gives some line lending officers loan authority of as much as $300 thousand.

Loan approval is centered on the line. However, loans above a certain limit must go to the loan committee which meets weekly. The loan committee is really the board of directors and virtually all of them are non-bankers. This is creating conflict at the present time. Some officers within the bank feel that the loan committee is too conservative.

BANK F -- Summary

This bank is a moderate sized bank (asset size of over $600 million). It is located in a single location and caters exclusively to commercial clients and wealthy individuals. Many small and medium banks consider it a "model" bank. Its name was mentioned frequently by officers at other banks during this survey as a real quality bank.

The bank's lending policies are extremely conservative. Until recently, in fact, the bank did relatively little lending and focused its activities mainly on gathering deposits. The average loan size is about $300 thousand. The bank does not use lines of credit but does most lending on 90 day notes (this is an unusual practice).

Lending authority is vested in the line lending officers. Vice Presidents have substantial loan authority, although any new loans require a second signature. Two Senior Vice Presidents can make a loan up to the legal lending limit of the bank.

Credit exam is done continuously. The sole credit examination officer grades the overall portfolio each month. He looks at every new credit made each month. Also, documentation is sampled on a periodic basis.

The bank has a credit manual with written rules. The manual is not as extensive as that at some other banks, because the bank prefers to make unsecured loans. The bank prefers loans backed up by a personal guarantee than those with collateral. Following the written rules is critical.

Documentation is handled centrally by the bank's note department. However, it is up to the loan officers to follow the loan covenants themselves on a manual basis. Credit exam is responsible for following all loan policy exceptions.

The reward system is only partly tied to loan production. Officers are given goals for loans, deposits, account maintenance and credit quality. They are rewarded for quality. At the end of the year, the bonus can be as much as 20% of base salary.

BANK G -- Summary

Bank G is a countywide bank. It is a mid-sized bank (over $700 million in assets). At the present time, Bank G is characterized as a troubled bank because it has received a "cease and desist" (C&D) order from the FDIC. This order restricts its ability to make new loans.

Bank G got into trouble through its past policies. Two policies were particularly instrumental in contributing to its problems. In the late 1980's, the senior management of the bank decided that it wanted to grow the bank substantially. Also, the reward system in the bank was based on the number of new loans booked without regard for quality. In addition, there was no real punishment system for booking loans that subsequently turned into problem loans.

The bank pushed heavily into marginal areas of lending such as construction real estate, which collapsed when the recession hit. Also, many of the borrowers had a "higher risk profile". In essence, at that point the bank was willing to take a calculated risk. The typical customer was an entrepreneurial company, a sole proprietorship, perhaps new in business, etc. The bank had no system for quantifying risk (although now it uses a system similar to the Fed. system).

Officers in the field had high lending limits. Some had limits as high as $1 million, which is very high for a bank of this size. Now, all loans over $100 thousand must go to the credit review committee and must be looked at by senior lenders.

The bank's current emphsis is on controlling risk. The bank is no longer willing to trade off risk for return. The bank revised its lending manual in December, 1992. Officers can be fired if they don't follow the rules in the manual. This is in contrast to the old rules and policies which were much more informal.

One problem still existing is the lack of a computerized tickler system for tracking exceptions, loan convenants etc. At present, everything is tracked manually, and this means that some things get missed.

The bank uses a centralized note department and loan documents are all prepared on standardized forms.

Credit examination now visits units once a year. They give no advance notice of their visits. They look at most of the portfolio in each unit, and

mostly look at credit quality.

Officers are required to monitor loans and notify senior management as soon as deterioration is detected. Failure to do so can result in punishment.

BANK H -- Summary

Bank H is a small bank (over $300 million in asset size). The bank is currently operating under a cease and desist order (C & D) issued by the FDIC. The bank's commercial lending is all done out of one location.

In the past, the bank got heavily involved in real estate and entertainment lending. It was also willing to take "calculated risks", trading off risk for return. The bank was lax in performing a complete analysis on propsective loans, particularly with regard to cash flows and sources of repayment. Collateral on many loans was poor--consisting of second or even third trust deeds. Many loans were based on the "character" of the borrower rather than the borrower's financial strength.

At the present time, the bank is committed to improving its position and to getting the C & D order lifted. It has gone through a complete turnover in top management--a new CEO and COO were brought in to clean up the bank, and many new changes were implemented.

In the past there was an informal policy and procedures system. The bank now has a written policy and procedures manual and loan officers must follow the rules. Any exceptions to the rules must be noted on the loan approval document.

Line officers have no loan authority and most loans require the approval of the bank's senior lenders (two must sign together). Over a certain limit, loans must go to the bank's board of directors (composed of non-lenders) for approval.

Lending officers are well compensated, but their rewards are not clearly tied to loan production. Bonuses are available for top performance in any facet of the job.

The bank does not have its own credit exam team. Instead, it hires an outside auditing firm to come in and examine both the loans and the documentation. This outside firm will visit the bank twice this year, and look at about 95% of the entire portfolio.

The bank uses a computerized tickler system to track covenants and exceptions. It also uses standardized loan agreements and documents.

BANK I -- Summary

Bank I is a small bank (asset size in excess of $100 million). Bank I is a single branch bank. At the present time, it is operating under a memo-of-understanding (MOU) issued by the FDIC.

The bank's current poor financial position is the result of its past practices. In the past, the bank was willing to take "calculated" risks, trading off risk for more yield. The bank was involved in a very aggressive effort to build the portfolio. By doing unique or "creative" deals, the bank was able to grow its loan portfolio by 10-15% annually.

The bank also made a lot of real estate loans that it knew were risky going in. And, unfortunately, the bank did not forsee the economic downturn. As a consequence, many of the charge-offs now are real estate related.

In the past, the reward system tied bonuses and raises to loan production. Also, there was no punishment system for making bad loans.

At the present time, the bank is trying to make substantial reforms. The bank has become very conservative in its lending practices and now considers risk to be more important than yield.

The credit culture of the bank has also been upgraded. The bank has a lending manual, and officers are required to closely follow the rules. Exceptions to policy must be noted on the loan approval papers.

Loan authority is concentrated in the hands of senior lenders. Loans up to a certain dollar amount can be approved by two senior officers. After that, loans must go to the officers loan committee. Loans of a still larger amount must go to the directors loan committee made up of the board of directors (all non-bankers with the exception of the bank's president).

Credit exam is done by an outside team that is now looking at every new loan every quarter. The rest of the portfolio is sampled randomly and about 60% gets reviewed.

BANK J -- Summary

Bank J is a small bank (asset size in excess of $ 100 million). It is a "local" bank located in a suburban area with several branches. It provides both retail and commercial banking services to its local community.

Bank J's lending policies are extremely conservative. Bank J is not willing to trade additional risk for any possible additional return on a loan. Many loans are secured by real estate and/or continuing guarantees.

Bank J does not use a formal pricing system. Several officers mentioned that they felt one was needed. The target yield at Bank J is Prime plus 3%. (Note, this yield can be met in several ways: charging the customer P+3, or by charging the customer a lower rate and giving the customer credit for checking account balances left in the bank etc.). Pricing is also based on the term involved.

Line lending officers have no loan authority. Branch managers have very small loan authorities. Nearly all loan authority is vested in the senior credit administrator for the bank who approves about 80-90% of all loans. Loans that are above his limits go to the president of the bank and the directors loan committee.

The bank uses a computerized tickler system to keep track of documentation and financial statements. The bank is now using loan agreements and guarantees on most loans; definitely on all revolving lines of credit. Loan documents are standardized and prepared by Laser Pro.

The bank does have a lending guide, but it is not used very much. It is not part of the formal culture. The rules about lending tend to be more INFORMAL.

Senior management encourages people to bring problems forward as quickly as possible. Information flows well both up and down the organization.

There is no reward system for loan productivity on the part of loan officers. Branch managers are compensated for on a composite basis, including loan productivity. There is pressure to make loans, but the bank wants only good loans.

Officers are counseled about bad loans. If there is a pattern of bad loans that is occuring, that is unacceptable. After a loan is charged off, it is talked about at the managers' meeting (held monthly).

Credit review is an AUDIT function that goes to each unit once a year to look at credit operations only. It looks at 35-50% of the portfolio. It looks for documentaton errors (UCC filings etc.). Credit exam (reviewing for credit quality) is not a separate but an ongoing function. The credit administrator for home equity and real estate functions as the credit examination officer for commercial lending.

The bank does very little training. Most of the lending staff is well trained because they have had experience in one or more other banks.

APPENDIX B --
Questionnaire Items Categorized by Independent Variable.

The questions on the questionnaire were intended to operationalize the independent variables as follows:

PROCESS AUDITING:

Q10. The bank makes it hard for officers to cover-up or hide problem loans.

Q11. The quality of the bank's credit exam officers is high.

Q12. I feel that credit exam is overly thorough in looking for problem loans.

Q13. The credit examiners often miss problem loans in the portfolio.

Q14. I peronally know about a problm loan that has not yet been correctly identified as a problem.

Q15. Credit exam generally does a good job of identifying problem loans.

Q24. Credit administration is actively involved in following problem loans in the portfolio.

Q25. Credit administration is too quick to classify and/or downgrade problem loans.

Q26. Credit administration does a good job of managing the bank's portfolio.

Q27. Credit administration does not have a clear picture of the riskiness of the bank's loan portfolio.

Q37. Overall, this bank does a good job of controlling credit risk in the portfolio.

REWARD SYSTEM:

Q7. Loan officers who make bad loans are usually punished.

Q8. The bank creates an incentive for officers to cover-up or hide problem loans.

Q9. I am rewarded for taking quick action on a potential problem loan.

Q22. If my superior finds out about a problem loan before I have told him/her, I will suffer negative consequences.

Q32. My rewards (bonuses, promotions and/or merit increases) depend on the total dollar amount of new loans that I make.

Q33. My rewards are based primarily on how well I manage the loans within my portfolio.

Q34. My rewards are based primarily on both the quality and quantity of new loans that I make each year.

QUALITY OF OPERATIONS RELATIVE TO INDUSTRY

Q1. Overall, the quality of the commercial loan portfolio in this bank is very good.

Q2. Overall, the quality of the commercial loan in my unit is very good.

Q16. Compared to our competitors, our bank generally has a more agressive approach to lending.

Q18. Compared to our competitors, our bank generally has a more conservative approach to lending.

Q23. Credit administration is too conservative in approving new loans.

RISK PERCEPTION

Q17. Our bank is more concerned about loan profitability than risk.

Q19. The risk rating system we use is accurate in assessing the risk of any given loan.

Q20. Our bank has a maximum loan size that is less than our legal lending limit.

Q21. In dealing with large loans, our bank prefers to share the risk by structuring a participation with other banks.

Q28. Our bank would prefer to have ten moderately sized loans with average default risk than a single large loan for the same total dollar amount and the same default risk.

Q29. Loan A is for $10 million and has a default risk of 2%; if the loan pays of, the bank gets profits of $300,000, otherwise it loses the entire $10 million. Loan B is also for $10,000,000 and it has a default risk of 1%; if the loan pays off the bank gets profits of $100,000, otherwise it loses $10 million. Our bank would prefer Loan A to Loan B.

Q30. In the scenario described in question 29 above, our bank would prefer Loan B to Loan A.

Q31. Our bank uses "worst case" scenarios in evaluating new loans or renewals.

COMMAND AND CONTROL SYSTEM

Q3. My direct superior wants to know about a potential loan as soon as possible.

Q4. I find it easy to communicate my concerns about a problem loan to my direct superior.

Q5. My direct superior does not want to hear about problem loans.

Q6. Bad news about problem loans often gets lost in the layers of management here.

Q35. Once a loan has been booked, it is extremely rare to find documentation errors.

Q36. Loan documentation errors sometimes impair the collection of loans at this bank.

(Note, Q35 and Q36 are part of command and control because they relate to the ability of individuals within the organization to follow rules and/or the existence of rules to prevent documentation errors).

Appendix C -- Means, Standard Deviations and Correlations of all Questionnaire Items

Var	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Q1	5.98	1.28																		
Q2	6.02	1.44	.71**																	
Q3	6.87	0.53	.14***	0.07																
Q4	6.60	0.82	0.07	.08*	.26***															
Q5	1.24	0.86	-.12**	-.08*	-.27***	-0.33														
Q6	1.56	1.34	-.12**	-.18***	-.11**	.16***	.23***													
Q7	3.79	1.74	.16***	.12**	.12**	0.01	0.00	0.02												
Q8	1.56	1.34	-.15***	-.09*	-0.02	-.09*	.11*	.31***	0.02											
Q9	6.00	1.83	.12**	0.08	.15***	.18***	-0.04	-0.02	.11*	-0.08										
Q10	5.74	1.40	.17***	.15***	0.05	.10*	-0.02	-.13**	.13**	-.16***	.21***									
Q11	6.13	1.48	.22***	.19***	.11**	.12**	-0.04	0.08	0.06	-.12**	.16***	.30***								
Q12	4.52	1.79	.13**	.10*	0.03	0.03	0.01	.10*	.10*	0.05	0.02	.10*	0.03							
Q13	2.64	1.60	-.20***	-.15***	-.10*	-.13**	.14**	-0.07	-0.07	.21***	-0.03	-.18***	-.35***	-0.08						
Q14	1.53	1.26	-.09*	-.12**	-0.07	-.16***	0.07	0.02	0.02	.21***	-.10*	-.10*	-.13**	0.00	.27***					
Q15	5.36	1.47	.18***	.16***	.12**	.12**	-.12**	0.08	0.08	-.13**	-.15***	.18***	.46***	0.04	-.33***	-.12**				
Q16	2.79	1.65	-.18***	-.13**	-0.02	-0.02	0.04	0.03	0.03	.14**	0.03	0.02	0.05	0.01	.09*	.13**	-.01			
Q17	2.10	1.48	-.25***	-.18***	-.12**	-.12**	.12**	.18***	-0.05	.22***	.14**	-.12**	-0.06	0.04	.22***	.14**	-.11*	.24***		
Q18	5.85	1.30	.32***	.23***	0.06	0.11	-0.05	-0.01	0.04	-.13**	0.02	0.07	0.04	.13**	-.12**	-.11*	0.07	-.55***	-.24***	
Q19	5.64	1.42	.19***	.11**	.10*	.15***	-.14***	.13**	0.08	-.10*	.14**	.12**	.25***	-0.01	-.23**	-.10*	.22***	-0.05	-.12**	.15***
Q20	5.82	1.91	-0.06	-.08	0.04	0.01	0.00	0.00	-0.07	-0.01	0.02	-.01	0.02	-.13***	0.03	-0.07	0.01	-0.02	0.07	-.09*
Q21	6.13	1.92	.17***	.14***	.18***	0.06	-0.04	-.04	0.07	-0.07	.14**	0.08	0.01	.09*	-0.08	-.11*	0.02	-.11*	-.12**	.13**
Q22	5.29	1.86	.09*	.09*	.12**	-0.06	-0.01	0.00	.30***	0.08	.12**	0.08	-0.07	0.04	0.00	-0.03	-0.02	-.12**	-0.03	.11**
Q23	4.84	1.65	0.07	.14***	-.03	-0.03	0.03	0.06	0.00	.10*	-0.05	0.00	-.13**	.22***	0.06	0.03	-0.07	-.23***	-0.01	.24**
Q24	5.79	1.43	0.04	0.00	.14**	0.07	-0.10	-.17***	-0.03	-0.05	0.04	.13**	-.10*	0.00	-0.07	-0.04	.09*	-.10*	-.15***	0.04
Q25	3.59	1.66	-0.06	-0.02	-0.04	-.12**	0.06	0.07	0.03	.13**	-.12**	-.12**	-.14**	.17***	0.21	0.06	-.13**	0.01	0.06	-0.02
Q26	5.50	1.33	.31***	.23***	.15***	.12**	-0.06	-.20***	0.07	-.10*	.17***	.17***	.35***	-0.06	-.22***	-.09*	.28***	-0.01	-.14***	0.03
Q27	2.06	1.42	-.19***	-0.11	-.12**	-.18***	.12**	.19***	-0.05	.15***	-.14***	-.14**	-.27***	.13**	.20***	.22***	-.21***	0.00	.17***	0.01
Q28	5.52	1.74	.10*	0.05	0.05	0.07	-.11*	-.09*	0.05	-.10*	0.07	.09*	0.01	0.04	-0.02	-.02	-0.02	-0.04	-.08*	0.02
Q29	0.29	0.45	-.18***	-.10*	-0.01	-0.05	-0.01	0.06	-0.03	0.00	0.04	-0.03	-.15**	-0.01	0.08	0.07	0.07	.13**	.13**	-.12*
Q30	0.71	0.45	.18***	.10*	0.01	0.05	-0.01	-0.06	0.03	0.00	-0.04	0.03	.15**	0.01	-0.08	-0.07	-0.07	-.13**	-.13**	.12*
Q31	5.80	1.50	.13**	.13**	0.05	0.00	-0.02	-0.07	0.07	-0.03	0.04	0.05	0.06	-0.02	-0.04	0.04	0.04	-0.08	-.14***	.15***
Q32	4.62	1.94	.19***	.22***	0.02	-0.01	0	0.04	.20***	.09*	0.03	0.00	.11*	0.08	-0.03	-0.03	-.11*	-0.01	0.06	.11*
Q33	4.78	1.84	-0.01	.12***	0.06	0.08	-0.02	-0.08	-0.06	-0.05	.17***	0.08	.10*	0.02	-0.02	-0.02	0.03	0.08	-.10*	-0.03
Q34	5.60	1.60	.21***	.21***	0.07	.13**	-.10*	-.20***	.19***	-.18***	.26***	.17***	.21***	0.04	-.11***	0.04	-.12**	0.01	-.09*	0.04
Q35	4.08	1.84	.12**	0.08	.10*	0.08	-0.02	-.10*	.13**	-.10*	0.08	.23***	.16***	-0.02	-.22***	-0.02	-.11**	-0.03	.09*	0.06
Q36	3.16	1.83	-.11*	-.15***	0.01	-0.03	0.05	.13**	.09*	0.06	0.00	-0.08	-0.03	-0.03	0.07	-0.03	.12**	.10*	-.28***	-0.07
Q37	6.26	1.09	.46***	.34***	.18***	.16***	-.12**	-.17***	.13**	-.20***	.12**	.18***	.24***	0.07	-.26***	0.07	-.18***	-0.06	-0.07	.20***
Q38	2.81	0.70	-0.01	0.01	-0.03	0.03	0.05	-0.04	0.00	-0.01	.11*	.14***	-0.04	-0.06	0.01	-0.06	0.02	-0.02	-0.04	-.09*
Q43	11.10	6.39	0.07	0.03	0.00	-0.01	0	-0.01	0.04	-0.04	0.03	.09*	0.00	-0.02	0.07	-0.02	0.08	0.07	-0.04	-0.06
Q44	36	7.62	.09*	0.07	-0.01	-0.02	0.04	0.00	0.05	-0.05	0.02	.13*	0.08	0.01	0.04	0.01	0.04	0.08	-0.04	0.00
Q45	1.01	1.09	-.11*	-0.08	0.01	-0.04	-0.05	-0.06	-0.04	-0.05	-.11*	-0.03	0.00	-0.07	.09*	-0.07	.10*	.11*	0.07	-.18***
Q46	3.32	0.73	-0.05	-0.07	0.01	.08*	-0.05	0.05	0.03	0.01	.15***	0.00	-.09*	-0.03	0.05	-0.03	-0.01	-.10*	-0.02	0.02

*p<.05 **p<.01 ***p<.001

Appendix C -- continued

Var.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Q20	0.02																		
Q21	.30***	.18***																	
Q22	0.04	0.04	.16***																
Q23	-.10*	-.12**	0	.14**															
Q24	0.07	.20***	.15***	.10*	0.01														
Q25	-.19***	-0.03	-0.03	0.02	.35***	0.03													
Q26	.19***	.10*	.11*	0.04	-.17***	.29***	-.23***												
Q27	-.23***	-0.03	-.09*	-0.03	.19***	-.19***	.22***	-.48***											
Q28	.10*	.23***	.29***	0.01	-0.04	.13**	0.01	.12**	-0.02										
Q29	-0.04	-0.04	0.08	-0.06	-0.02	-0.01	-0.01	-0.04	0.05	0.01									
Q30	0.04	0.01	-0.08	0.05	0.02	0.01	0.01	0.04	-0.05	-0.01	-1.0***								
Q31	0.07	-.09*	0.07	0.03	.16***	0.07	-0.02	0.04	0.00	0.04	-.10*	-.10*							
Q32	0.02	0.04	-0.03	.17***	.13**	-.09*	0.00	0.04	0.03	-0.05	-0.04	0.04	-.01**						
Q33	0.08	0.00	0.04	0.06	-0.04	.18***	0.00	.17***	-.16***	0.07	0.01	-0.01	.09*	-.13**					
Q34	.17***	-0.01	.14**	.11*	-0.05	.11**	-.11*	.22***	-.15***	.16***	-0.04	0.04	0.02	.29**	.26***				
Q35	.17***	-0.01	-0.03	0.02	-0.02	.11*	-.17***	.18***	-.16***	-0.03	-0.05	0.05	.14***	0.00	0.05	0.06			
Q36	-.10*	0.07	-0.03	-0.02	-0.04	-0.02	0.02	-0.06	0.08	-0.02	0.06	-0.05	-.14***	0.07	0.01	0.05	-.21***		
Q37	.28***	.16***	.24***	.13**	-0.01	.17***	-.20***	.38***	-.36***	.16***	-.12*	.12*	.19***	0.08	.17***	.27***	.14**	-0.06	
Q38	-0.01	.12**	0.00	0.04	-0.02	0.04	-.10**	0.04	-0.05	0.08	0.00	0.00	-0.04	-0.01	0.02	0.07	0.00	-0.02	0.04
Q43	0.00	-0.01	0.02	0.04	-0.05	-0.04	-0.05	-0.02	-0.04	0.04	0.04	0.04	0.00	-0.03	0.00	0.04	0.04	0.07	0.04
Q44	0.00	0.06	-0.01	-0.01	-0.04	-0.07	-0.10	-0.01	-0.04	0.01	0.08	0.08	-0.10	-0.06	-0.02	0.04	.09*	0.04	0.06
Q45	-.09	.10*	-.13**	-.13***	-0.04	.11*	0.03	0.01	0.01	0.03	-0.08	-0.08	-0.07	-0.08	0.05	0.01	-0.03	-0.01	-.12**
Q46	-0.01	0.06	.14***	.14***	0.07	0.00	0.01	-0.02	0.03	.11**	0.09	-0.09	-0.03	0.01	-0.08	0.01	-0.05	-0.06	-0.03

Appendix C -- continued

Var	38	43	44	45	
Q43	.48***				
Q44	.43***	.&&***			
Q45	0.07	.15***	.09*		
Q46	.10*	-.12***	-.14***	-0.03	

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