What Killed This Bank? Financial Autopsy as an Experiential Learning Tool

Fred H. Hays, University of Missouri-Kansas City
Stephen A. DeLurgio, University of Missouri-Kansas City

ABSTRACT

Finance students today find live in the midst of an enormous financial crisis. Institutions both large and small are failing or being rescued through government intervention. This environment presents a host of learning opportunities for instructors as well as students. This paper discusses financial autopsies as a form of experiential learning utilizing data on actual "real world" banks that have failed. The paper provides a framework whereby a student can systematically analyze data to determine the reason or reasons for bank failure. This stimulates student interest in the subject as well as honing their critical thinking skills.

"In finance, as in pathology, we can learn

more from failure than from success"

Stephen A. Ross
Sloan School, MIT

INTRODUCTION

Banks are again expiring at a rapid pace…over 9,000 banks failed during the Depression Era of the 1930's including about 4,000 banks and 1,700 savings and loan associations in 1933 alone. During the Banking and S&L crisis in the late 1980's hundreds of banks and financial institutions succumbed. In the current crisis increasing numbers of banks are closing. As of October 3, 2009, a total of 98 U.S. banks have failed. [Bloomberg, 2009] The Federal Deposit Insurance Corporation [hereafter FDIC] "problem bank list" currently contains 415 banks that are 4 or 5 rated (on the 5 point CAMEL rating system) as of 06/30/09 compared with 305 the previous quarter. Total assets of these problem banks are $299.8 billion. At year-end 2008, the average return on assets for the U.S. banking industry was -.67 with an average industry return on equity of -7.02% [FDIC, 2009]

What is the "cause of death" for individual banks and what can we learn that might prevent future bank failures? The current global financial crisis has raised student interest in evaluating the performance of financial institutions, especially commercial banks and bank

holding companies. The regulated nature of these institutions permits students free access to current detailed data on bank performance. Commercial bank performance data is collected uniformly and consistently by the FDIC. Analysts can trust the accuracy of banking information submitted to federal banking agencies because banks face stiff fines for submitting inaccurate data. Data is likewise timely with updates available within 50 days of the end of each quarter.

This paper describes the use of a financial autopsy to discover the root causes of bank failure. The causes of failure in the present environment are frequently associated with catastrophic events related to credit quality problems linked with residential and commercial real estate lending activities. Sometimes this is related to declining home prices. This may be aggravated by deterioration of the economy as a whole and rising unemployment. At other times the culprit lies within real estate development loans that default when builders are no longer able to sell their properties. Other failures may be associated with commercial and industrial loan borrowers or small business borrowers adversely affected by the economic decline. Recently banks have begun to experience losses from credit card, student loan and consumer loan defaults.[FDIC, 2009]

For some institutions, the problem is not loan defaults, but a loss of liquidity as banks are unable to tap traditional sources of funding. Increased counterparty risk has frozen traditional short-term funding sources. This in turn has created liquidity pressures on some financial institutions.

Students find that conducting of a financial autopsy on a failed bank allows them to develop and apply their analytical skills to a "real world" case. They relish the challenge of being a financial sleuth as they sift through data quarter by quarter to trace the decline of a bank's performance. In the end they are forced to reach a conclusion as to the major causes of the demise of an institution.

This paper utilizes as an illustration, Douglass National Bank, a minority owned bank in Kansas City, Missouri, that failed in January, 2008 immediately prior to the early stages of the financial crisis. This period is contemporaneous with the financial problems at Bear Stearns. Douglass National illustrates a bank with chronic difficulties associated with increased competition in its geographic market associated with the Community Reinvestment and Fair Lending acts. Local banks, as well as large national organizations like Bank of America, aggressively pursued the best customers of Douglass National. Loan quality deteriorated, profits fell and capital became severely eroded, eventually leading to the failure of the institution. The developing patterns in performance can be quickly identified in the preliminary analysis.

The initial financial autopsy uses data available on-line at the FDIC website. While year-end data is available back to the early 1990's; quarterly data is available for the most recent years. It is possible to easily and quickly identify peer institutions for easy comparison of key performance measures. The initial analysis focuses on the regulatory CAMEL rating variables: *capital adequacy, asset quality, management, earnings and liquidity*. Supplementary measures including measures of overhead such as the efficiency ratio are also investigated. From this initial diagnostic screening, the next phase focuses on more specific possible causes of failure using the Uniform Bank Performance Report (UBPR) data from the Federal Financial Institutions Examination Council (FFIEC). This data allows students to "drill down" further to obtain more details about asset quality, liquidity and cost. Similar analyses can also be conducted

at the bank holding company level using both FDIC data as well as Bank Holding Company Performance Report (BHCPR) data from the FFIEC. Illustrations of the financial performance data for Douglass National will be included.

The students are then required to present their autopsy findings at a coroner's inquest type hearing. There they must defend their conclusions before their peers as well as their instructor. (A sample assignment will also be included in an appendix)

Financial Autopsies as Experiential Learning Tools

Financial autopsy, the systematic *ex post facto* examination of financial data to determine the cause(s) of the failure of a financial institution, is an application of experiential learning theory. Kolb (1984) defines learning as "the process whereby knowledge is created through the transformation of experience." Kolb and Kolb (2005) observe "Many students enter higher education conditioned by their previous educational experiences to be passive recipients of what they are taught. Making space for students to take control of and responsibility for their learning can greatly enhance their ability to learn from the experience." Remarking about graduate education, Glenn Hubbard, dean of the business school speaking at an AACSB dean's conference (2007), said "experiential learning is a new hallmark in MBA programs across the country."

This paper offers an experiential framework for financial autopsy analysis. The National Research Council in a report on the new science of learning observes "effective learning requires not only factual knowledge, but the organization of these facts and ideas in a conceptual framework and the ability to retrieve knowledge for application and transfer to different contexts." (Kolb and Kolb, 2005). Holcomb et. al. (2009) explain the use of heuristics in experiential learning in entrepreneurial settings. The conceptual framework developed in this paper is conducive to developing such heuristics.

Learning Objectives

This financial autopsy application is developed for use in an undergraduate course in commercial bank management within the BBA Finance concentration. It is also used in a similar course, Management of Financial Intermediaries, within the MBA Finance concentration. The graduate students are not only older but typically many students have experience in banking or financial institutions. More time, attention and explanation is usually required for undergraduate students.

The learning objectives for the financial autopsy exercise are to:

1. *Explore* banks as complex and integrated systems managed by human beings and subject to dynamic competitive shocks.

2. *Equip* students with a systematic approach to analyzing bank performance using publicly available data.

3. *Investigate* the causal links between management actions and financial consequences.

4. *Combine* natural student curiosity with problem-solving skills to better understand why institutions fail.

Background

   This illustrative financial autopsy is conducted on Douglass National Bank, founded in 1983 in Kansas City, Kansas, with 3 locations in the Kansas City MO/KS Metropolitan Area, the 26th largest in the U.S. with a population in 2008 of approximately 2 million. Douglass National Bank is an African American-owned minority bank. According to the Federal Reserve, there are currently 123 minority owned banks in the U.S., consisting of 34 African American, 43 Asian American, 17 Hispanic, 15 Native American and 14 other minority owned institutions. (Federal Reserve, 2009)

   Minority owned banks have received special attention by Federal banking regulators including the Federal Reserve, FDIC and the Office of the Comptroller of the Currency (OCC). In addition, the U.S. Treasury created the Minority Bank Deposit Program (MBDP) to invest idle funds of U.S. agencies as deposits in minority owned institutions.

   Academic interest in minority bank performance dates back to Brimmer's seminal study in the *Journal of Finance*.(Brimmer,1971) Other studies include Boorman and Kwast's study of minority bank start-ups (1974), Bates and Hester's discussion of minority lending programs (1977) and Bates and Bradford's study of portfolio behavior of black-owned banks (1980) along with Boorman and Kwast's (1974) study of start-up minority banks. and Garner's (1984) minority bank managerial and performance analysis. Ammons (1996) examines the evolution of black-owned banks from the 1880's to the 1990's. (XXX paper authors) (2003) provide more recent comparative minority bank performance data including African American, Asian, Hispanic and Native American owned banks..

   Minority owned banks have been affected by changes in Federal banking regulations, especially the revisions to the Community Reinvestment Act in 1989 contained within the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA). With increased emphasis on servicing low-to-moderate income customers, traditional non-minority banks developed a keen interest in minority customers. Consequently, minority banks lost many of their best and most profitable customers.

   Douglass National Bank was rescued in 1991 through an infusion of capital. One million was supplied by the FDIC and another $2 million from the Hall Family Foundation (related to Hallmark Cards, a Kansas City based company). This was in the midst of the banking and savings and loan crisis in the late 1980's and early 1990's. Multiple changes in leadership ensued although the focus on serving a predominately minority community remained.

Conducting A Financial Autopsy

The financial autopsy as developed in this paper, consists of five steps: 1) gathering the essential data 2) a preliminary screening analysis 3) the "drill-down" 4) reconciling the findings and 5) the "cause of death". These steps are sequential and provide an orderly framework resembling a heuristic.


Step 1: Gathering the essential data

Banking data from the FDIC is almost ideal for instructor and student use. It is current (the latest is as recent as two months or less), accessible anywhere from the Internet, easy to retrieve and use, comprehensive (including every bank and bank holding company in the U.S., either quarterly or annually or both, back to the early 1990's, accurate (under penalty of hefty fines) and best of all---free!

Data is accessed using the Statistics on Depository Institutions (SDI) interface available on the FDIC website at: (http://www2.fdic.gov/sdi/index.asp).

Once within the SDI area, it is possible to retrieve data on individual banks or bank holding companies. The initial screen allows the student to input up to four columns of information. The user can search for a bank using either the name (or location) of the bank or by using the FDIC certificate number (if known). Exhibit 1 shows Douglass National Bank (FDIC Certificate #24660) for December 31, 2007 (the last data available prior to the bank's failure in January 2008). In column two, a standard peer group is selected from the drop-down menu. The "all commercial banks less than $100 million in assets" category was used for peer comparisons although many other standardized peer groups are available. In addition, it is possible to create custom peer groups. Column 3 contains data for Douglass National Bank for December 31, 2005. Time periods can be quickly adjusted using a drop-down menu. Column 4 contains standardized peer data for December 31, 2005. By changing time periods, comparative data for multiple periods for both the bank and the peer group can be easily and quickly assembled. Once the desired columns are populated, just hit the yellow "Next" button. In the case of Douglass National it is necessary to go back to December 31, 2004 to discover data that displays similar performance with peer institutions.


Exhibit 1

SDI Input Screen—Create or Modify Reports
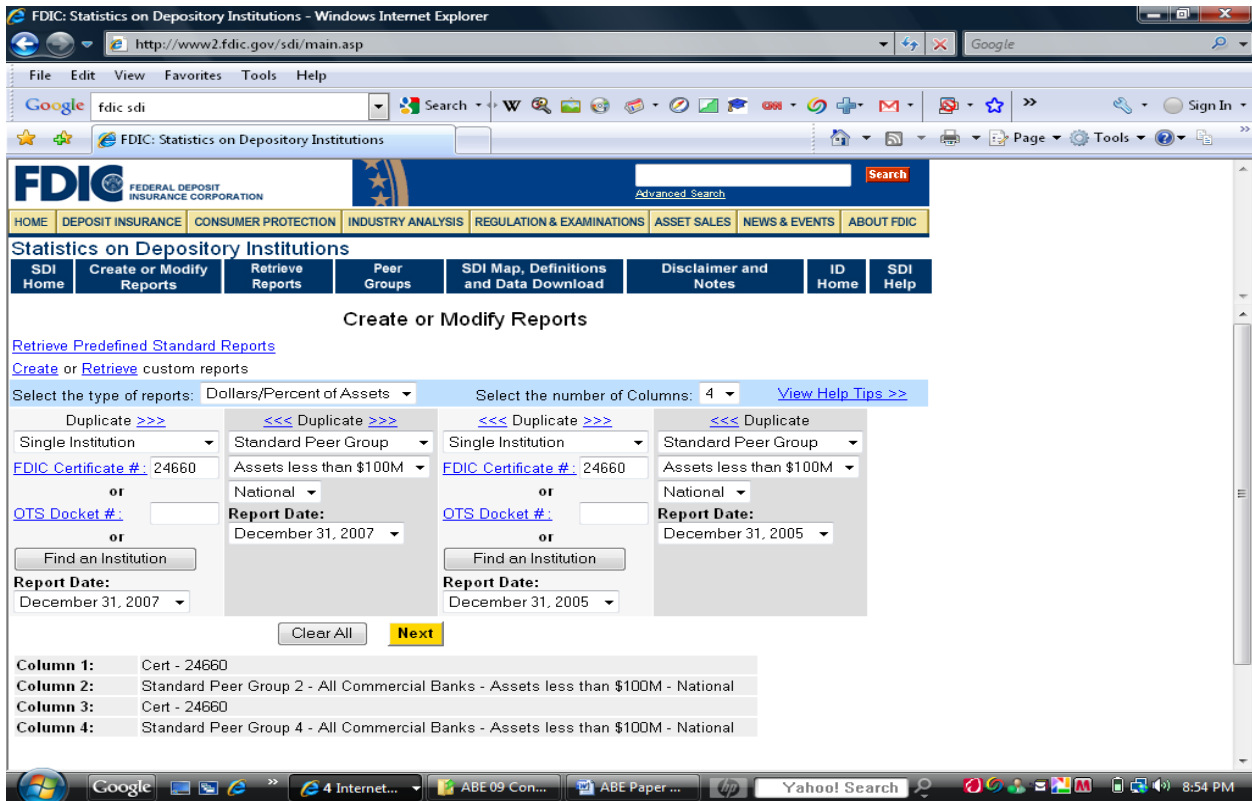
This produces a Confirmation Screen as in Exhibit 2. This screen allows "report selection" by the user. Here one can select the desired financial data including detailed items from both the income and balance sheets. An especially useful report is "Performance and Condition Ratios" which provides the analyst with a summary of pre-calculated financial ratios for the bank along with peer comparisons. After selecting this desired variables, again hit the yellow "Next" button.

Exhibit 2

Confirmation Report
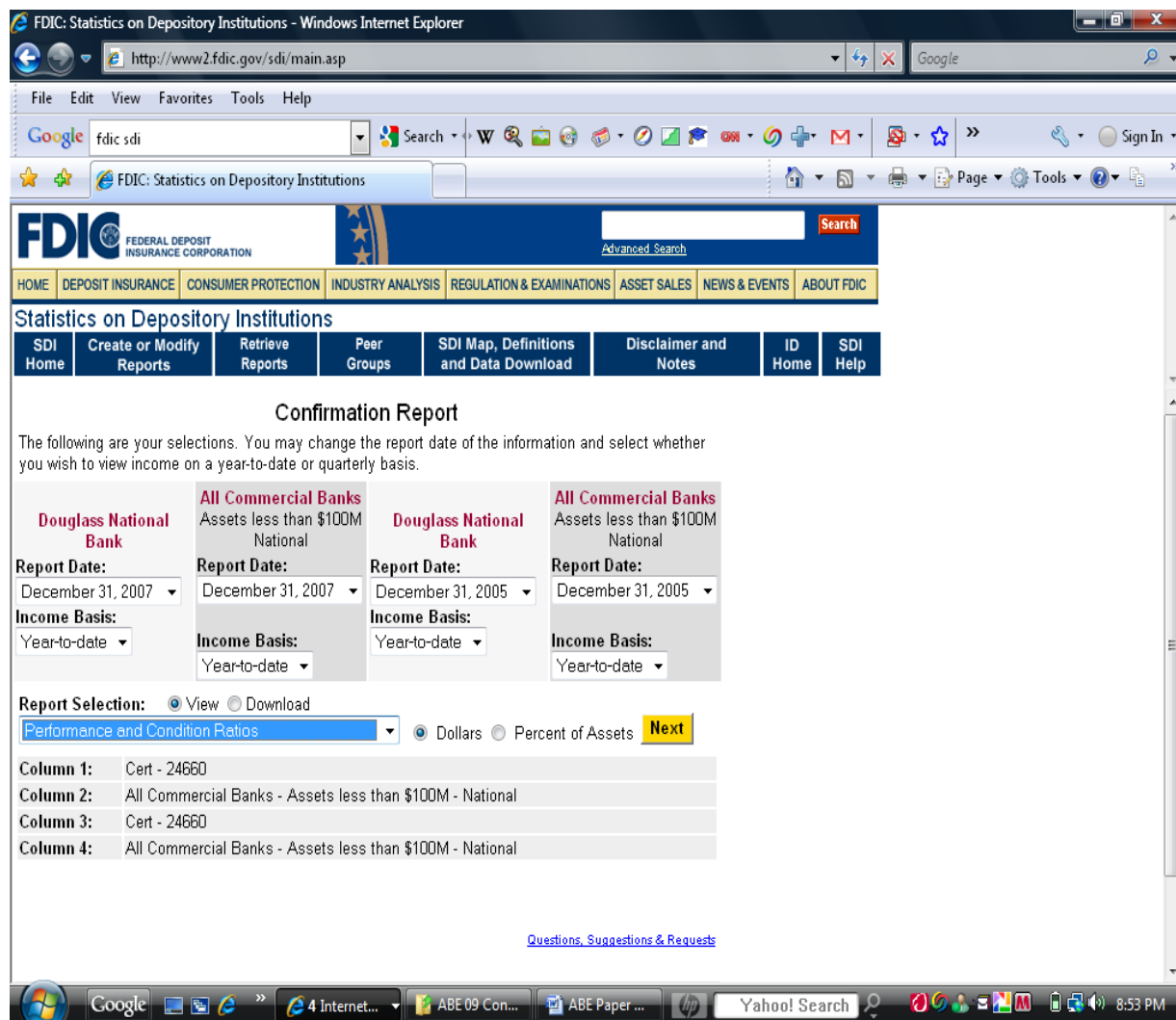
The confirmation screen confirms the dates and categories that have been selected. It also allows the user to select a variety of different reports from a drop-down menu. For convenience in the initial screening process the "Performance and Condition Ratios" report is selected. This report provides bank performance ratios, including peer values, for a variety of commonly using bank performance measures including earnings, asset quality, capital and efficiency.

Exhibit 3

Sample Performance Ratio Report

Step 2: Preliminary Screening Analysis

An initial task in a financial autopsy is to identify likely indicators that may explain the failure of the institution. The CAMEL rating system used by federal and state banking regulators is a convenient starting point. The CAMEL acronym stands for key elements of overall bank performance: capital adequacy, asset quality, management, earnings and liquidity. Table 1 presents proxy variables for each of the CAMEL variables for Douglass National Bank for the periods December 31, 2004 through the end of 2007, the last period before Douglass National failed on January 25, 2008. While institutions that fail, like Douglass National, are either liquidated or merged with a healthy institution, the data for periods prior to failure remain in the FDIC database. This permits financial autopsies to be conducted.

Table 1

Preliminary CAMEL Variables—Douglass National Bank

	Douglass YE07	Peer YE07	Douglass YE06	Peer YE06	Douglass YE04	Peer YE04
Capital adequacy Capital asset ratio	2.25%	13.37%	3.43%	12.73%	7.93%	11.52%
Tier 1 capital risk based ratio	3.56%	18.77%	5.33%	18.44%	10.41%	16.82%
Asset quality Non-current loan to loan ratio	20.66%	1.18%	17.12%	0.95%	0.80%	0.95%
Charge-off ratio	2.48%	0.25%	3.19%	0.19%	0.23%	0.27%
Management Efficiency ratio	157.25%	74.15%	123.37%	71.59%	75.43%	69.60%
Earnings Return on assets	-2.19%	0.80%	-5.05%	0.94%	0.87%	0.98%
Return on equity	-87.08%	5.88%	-81.89%	7.32%	11.33%	8.39%
Liquidity Loan to deposit ratio	55.15%	75.33%	69.34%	74.07%	83.76%	72.67%

Several observations can be made based on data in Table 1:

---capital adequacy, while below peer banks in 2004, is seriously deficient in 2006 and 2007. This is symptomatic of other serious problems.

---asset quality as approximated by *non-current loans to loans* (loans more than 90 days past due) and charge-offs, is seriously deficient. Non-performing loans in 2007 exceed 20% and the charge-off ratio of almost 2.5% exceeds peers by a factor of 10 times.

---the *efficiency ratio*, a measure of overhead expenditures and a proxy for management skills, substantially exceeded 100% in 2006 and 2007 compared with about 70% for peers during the same period. These overhead expenses adversely drained bank profits.

---the *loan to deposit ratio* serves as a proxy for both loan demand and liquidity. (A declining loan to deposit ratio indicates falling loan volume which is a key driver of bank profits)

---earnings, as measured by both *return on assets (ROA)* and *return on equity (ROE)* were substantially negative at the end of both 2006 and 2007, symptomatic of declining loan volume, deteriorating asset quality and soaring overhead costs. This in turn depleted equity capital and created a danger of insolvency by year-end 2007.

While these factors may substantially explain the critical condition of Douglass National Bank, it is possible to investigate these areas of concern in greater detail. Interested students as well as instructors can also find added insight by viewing the chartbooks contained in the Quarterly Banking Profile produced by the FDIC.
(http://www2.fdic.gov/qbp/qbpSelect.asp?menuItem=GRPH)

Step 3: The "Drill-Down" Process

The Uniform Bank Performance Reports (UBPR) permit investigators to access data on individual bank performance. There are also reports on bank holding company organizations. Both are available through the Federal Financial Institutions Examination Council (FFIEC) website at: http://www2.fdic.gov/ubpr/UbprReport/SearchEngine/Default.asp The data come from the Reports of Condition and Income submitted by commercial banks to the FDIC. These have been converted into a series of reports covering balance sheet composition, income, capital, asset quality, liquidity, interest rate risk and a variety of other topics. Peer data are also calculated using pre-determined peer group definitions. In many instances this data provides additional insights into bank performance beyond those available through the preliminary FDIC data discussed earlier. Ideally students will be able to extend their knowledge about a particular bank through examining the UBPR data.   Exhibit 4 provides an example of available reports.

Exhibit 4

Available Reports--- Uniform Bank Performance Reports (UBPR)

Exhibit 5 provides a sample UBPR report for Douglass National Bank including peer group comparisons. The student can peruse these reports and quickly identify areas where Douglass National's performance differs substantially with peer institutions. In addition, the UBPR has a default setting that automatically produces comparisons for the past five years.

There is also an option that permits customization of time periods. This makes it easy to compare changes in bank performance over time.

Exhibit 5

Sample UBPR Report---Douglass National Bank

Step 4: Reconciling the Findings

Table 2 summarizes Douglass National Bank data for 2006 and 2007. These two years show significant deterioration in bank performance. For example, both asset and loan growth rates fell drastically in 2006 and 2007. Tier 1 capital fell even more dramatically with annual declines of 62% and 52% in 2006 and 2007. The bank was literally depleting capital at a dangerous rate that outpaced the decline in assets. Other things equal, capital adequacy normally improves with declining asset growth. In the case of Douglass, declining profits and deteriorating asset quality combined to erode capital at an extremely rapid pace---one from which ank management found it impossible to recover.

High overhead expense, especially high personnel expenses contributed to the decline in profitability. The bank also relied heavy on "jumbo" deposits in excess of $100,000. Because the deposits were above FDIC deposit insurance premiums, the bank was forced to pay higher interest rates which tend to squeeze profit margins. A bank may be forced to offset these higher deposit costs by taking on riskier loans which in turn may decrease asset quality and eventually increase non-performing loans and charge-offs.

Lending activities hastened the demise of Douglass National. Past due loans of more than 90 days were not confined just to real estate but also extended to commercial and industrial as well as consumer loans. In addition, the bank held more than 5 times the quantity of mortgage backed securities compared with peers. The problems in securitized markets aggravated the banks other problems.

Table 2

UBPR Supplementary Data—Douglass National Bank

Variable	Douglass YE07	Peer YE07	Douglass YE06	Peer YE06
Asset growth rate	-22.81%	4.76%	-33.63%	6.59%
Net loan and lease growth rate	-38.02%	7.74%	-31.56%	7.50%
Tier 1 capital growth rate	-52.44%	4.85%	-62.48%	7.09%
Overhead expense to average assets	6.55%	3.57%	5.43%	3.58%
Avg. personnel expense per employee ($000)	68.00	50.92	63.52	49.42
Time deposits >100K to avg. assets	22.56%	14.68%	19.51%	12.85%
Real estate loans 90 days past due	23.08%	1.04%	18.29%	0.80%
Commercial and industrial loans 90 days past due	14.65%	0.89%	17.47%	0.75%
Loans to individuals 90 days past due	4.82%	0.14%	2.88%	0.11%
Pass through mortgage backed securities	62.82%	11.81%	55.1%	10.67%

Step 5:

Verdict: The "Cause of Death"?

Douglass National Bank appears to have failed because of poor decisions by the CEO and the Board of Directors. The CEO left in 2005 as a result of improprieties and was not replaced prior to the failure of the bank in January 2008. During this time the bank's financial condition deteriorated badly.

Douglass National Bank operates in the highly competitive Kansas City banking market. Based on the Herfindahl Hirschman Index, a measure of market concentration used by the U.S. Department of Justice, the Federal Trade Commission and the Federal Reserve System in evaluating antitrust actions and horizontal mergers, the Kansas City market is the most competitive banking market in the United States. In addition, the Community Reinvestment Act amendments in 1989 created an incentive for non-minority banks to compete aggressively in markets for low-to-moderate income customers.

The bank suffered from poor lending decisions that included both residential and commercial real estate loans, commercial and industrial loans and consumer loans. They also invested in mortgage backed securities which suffered from broad declines in value in the past few years. To compound problems the bank has large overhead expenses compared with peer banks. The result of poor lending decisions and lack of control of overhead expenses was plunging earnings and severely impaired capital. This in turn made it difficult to attract new management or additional capital from investors. As word of the bank's difficulties spread, deposits and loan customers became more difficult to attract and retain. In the end, losses became impossible to control and capital became impossible to obtain. The regulators had no choice but to seize the bank. The bank failed on January 25, 2008. The bank reopened at the beginning of the following week as a branch of New Orleans based Liberty Bank and Trust Company.

Exhibit 6
Sample Classroom Exercise

Conducting a Bank Autopsy

This is an alternative option from the traditional midterm bank consultant project. In this project you are to select a US bank that has failed in 2008 or 2009. The list of failed banks can be found at: http://www.fdic.gov/bank/individual/failed/banklist.html.

Select a bank from the list and seek approval from the instructor to avoid duplication. Gather data from the FDIC SDI facility as well as the FFIEC UBPR site. Collect data far enough back that you have information for the healthy period prior to developing problems.

Ascertain the preliminary "cause of death" using bank performance ratios and peer comparisons. Once you've identified the principal problems, use additional data from the FDIC and FFIEC to either support or deny the original finding. Chapters 5 and 6 in Rose and Hudgins should be helpful in the analysis.

Deteriorating capital is usually symptomatic of other problems. Pay particular attention to asset quality problems including undue concentrations of credit. Asset/liability management problems by contribute to interest rate risk. Lack of adequate cost controls may be an issue. Inadequate growth especially in a recession and excessive reliance on short-term borrowing and/or volatile liabilities may point to problems. Other special problems such as material fraud may also be a contributing factor.

Once you understand the causes of the failure you should analyze what actions might have been taken sooner that could have prevented the collapse. Summarize what banks should focus on in the future to avoid failures of other similar banks.

The presentation supported by PowerPoint should be approximately 25 minutes and must include everyone on the team. Reserve 20-25 minutes for discussion and question and answer.

<div align="center">*****</div>

REFERENCES

Ammons, Lila, (1996) The Evolution of Black-Owned Banks in the United States Between the 1880's and the 1990's, Journal of Black Studies, (26)(4), 467-489.

Bates, Timothy and Bradford, William (1980), An Analysis of the Portfolio Behavior of Black-Owned Commercial Banks, Journal of Finance, (35)(3), 753-768.

Bates, Timothy and Hester, Donald D. (1977), Analysis of a Commercial Bank Minority Lending Program: Comment, Journal of Finance, (32)(5), 1783-1789.

Boorman, John T. and Kwast, Myron L., (1974), The Start-Up Experience of Minority-Owned Commercial Banks: A Comparative Analysis, (29)(4), 1123-1141.

Brimmer, Andrew F. (1971), The Black Banks: An Analysis of the Performance and Prospects, Journal of Finance, (26), 379-405.

Campbell, Dakin.(2009) Three U.S. Banks Close, Bringing Failure Total This Year to 98 http://www.bloomberg.com/apps/news?pid=20601087&sid=aPV9iy8dmGo0

Federal Deposit Insurance Corporation, (2009), *Quarterly Banking Profile* (http://www2.fdic.gov/qbp/index.asp)

Federal Deposit Insurance Corporation (various dates) Statistics on Depository Institutions, (http://www2.fdic.gov/sdi/index.asp).

Federal Financial Institutions Examination Council (various dates),Uniform Bank Performance Report, (http://www2.fdic.gov/ubpr/UbprReport/SearchEngine/Default.asp)

Federal Reserve System (2009), Minority bank statistics: http://www.federalreserve.gov/releases/mob/current/default.htm

Gardner, Mona (1984), Minority Owned Banks: A Managerial and Performance Analysis, Journal of Bank Research, 26-35.

Kolb, AliceY and Kolb, David A. (2005), Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education, Academy of Management Learning & Education, (4), 193-212.

Kolb, D.A. (1984) Experiential Learning: experience as the source of learning and development. Englewood Cliffs, N.J. retrieved at URL: http://www.learningfrom experience.com/images/uploads/process-of-experiential-learning.pdf

Kolb, David A., Osland, Joyce S. and Irwinb M. Rubin (1995), Organizational Behavior: An Experiential Approach. Englewood Cliffs, N.J., Prentice Hall.

(XXX paper authors) (2003) Minority Banks: A Search for Identity, The RMA Journal, (86).

Holcomb, Tim R., Ireland, R. Duane, Holmes, R. Michael Jr. and Hitt, Michael A., (2009) Architecture of Entrepreneurial Learning: Exploring the Link Among Heuristics, Knowledge, and Action,. Entrepreneurship Theory and Practice, 167-192.

Hubbard, Glenn. (2007) The 21st Century MBA, AACSB Dean's Conference, Las Vegas. http://www0.gsb.columbia.edu/faculty/ghubbard/Articles%20for%20Web%20Site/speeches/02.8 .07%20AACSB%2021st%20Cent%20%20MBA.pdf

Infoweb (1991; retrieved 08/2009) (http://infoweb.newsbank.com.ezproxy.mnl.umkc.edu/iw-search/we/InfoWeb?p_product=NewsBank&p_theme=aggregated5&p_action=doc&p_docid=11 E6D9CB332B5D80&p_docnum=20&p_queryname=2)

Ross, Stephen A., (2002) quoted in http://ideas.repec.org/a/rpo/ripoec/v92y2002i6p.html

Wikipedia, (Retrived: August, 2009) Kansas City MSA Statistical Summary,

(http://en.wikipedia.org/wiki/Table_of_United_States_Metropolitan_Statistical_Areas#Table)