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To What Extent Are Uninsured Depositors At Risk?

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NORTHERN ILLINOIS UNIVERSITY

To What Extent Are Uninsured Depositors At Risk?

A Thesis Submitted to the

University Honors Program

In Partial Fulfillment of the

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Department of Finance

By Susan M. Raguse

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Capstone Approval Page

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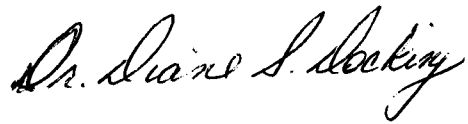
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ABSTRACT:

Recent bank failures prompt the important question, "To what extent are uninsured depositors at monetary risk?" The purpose of this study is to examine the historical loss rates associated with being an uninsured/exposed depositor at a failed banking institution. This paper will also explore the returns on bank deposits compared to the returns of alternative marketable instruments. The purpose of comparing the various marketable instruments to bank time deposits is to explore the amount of risk and return, measured through yearly average returns and standard deviation, associated with both. By using difference of means tests, as well as accounting for differences in maturities, it was proven in this study that the mean average return of CDs is statistically significantly higher than that of T-bills between 1986 and 2000. Thus, although investors are at monetary risk in the event of a bank failure, they are being compensated. Results suggest that further research is needed to explain the amount of specific CD interest rates prior to an institution's failure.

I. INTRODUCTION

On July 27, 2001 Superior Bank FSB of Hinsdale, Illinois, failed leaving 816 uninsured depositors.¹ FDIC officials estimated the uninsured deposits to total \$66.4 million, spread over 2,880 accounts. According to *American Banker*, “FDIC officials cautioned that just because the money is uninsured does not mean depositors will lose all of it. The FDIC paid 9.6% of uninsured portions back to depositors at Keystone,” (*American Banker*, August 14, 2001).² Recent bank failures such as Superior and Keystone prompt the important question, “To what extent are uninsured depositors at monetary risk?”

The Federal Deposit Insurance Corporation (FDIC), established in 1933 as a result of the National Banking Act of 1935, exists in order to protect depositors in the event that a bank becomes insolvent and fails. The Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) created the Savings Association Insurance Fund (SAIF) and the Bank Insurance Fund (BIF). These two insurance funds, both under the auspices of the FDIC, were created to fund thrift and bank failures. The purpose of this study is to examine the historical loss rates associated with being an uninsured/exposed depositor at a failed banking institution. An uninsured/exposed depositor is defined as a depositor with a monetary amount that exceeds FDIC coverage. The Depository Institutions Deregulation and Monetary Control Act of 1980 raised the deposit insurance coverage to its current level of \$100,000.

This paper will also explore the returns on bank deposits compared to the returns of alternative marketable instruments. The purpose of comparing the various marketable instruments to bank time deposits is to explore the amount of risk and return, measured through yearly average returns and standard deviation, associated with both.

¹ *American Banker*, August 14, 2001.

² First National Bank of Keystone, West Virginia (\$1.1 billion in assets) failed in 1999.

The remainder of this paper is organized as follows: section II reviews previous studies done on the topic, section III details the two main hypotheses, and section IV describes the sample and methodology. Section V reports the results and implications. Finally, overall conclusions resulting from this study are provided in section VI.

II. REVIEW OF LITERATURE/PREVIOUS STUDIES

Osterberg and Thomson (1999) explore the priority of claimants in a bank failure. Depositor preference laws provide the following hierarchy in which various parties are claimants in a bank failure. The following is a list of claimants, organized from first priority to last:

- 1) Insured depositors
- 2) Secured creditors
- 3) FDIC & Uninsured depositors
- 4) General/Unsecured creditors

Osterberg and Thomson found that if enough general creditors become secured through collateralization, the FDIC and uninsured depositors suffer greater monetary losses. Osterberg and Thomson conclude, "Hence a potential unintended effect of depositor preference laws is to reduce the value of uninsured depositor claims on the bank."³

The key to evaluating the risk associated with being an uninsured depositor is to understand depositor preference laws. Hirschhorn and Zervos (1990) studied how depositor preference laws have been proposed to reduce the cost of bank failures to the deposit insurance agencies. When a failed institution is liquidated, the absence of depositor preference laws would force the insurer, i.e. the FDIC, to share recovered proceeds with uninsured depositors and unsecured creditors. However, with depositor preference laws in

³ Osterberg and Thomson, page 19.

effect, the FDIC and uninsured depositors have priority over general creditors. In their study, Hirschhorn and Zervos concluded that the cost of bank failure to uninsured depositors is significantly affected by depositor preference. “Since uninsured depositors are made somewhat better off by depositor preference, it is predicted to lead to a small reduction in CD rates” (Hirschhorn & Zervos, 1990).⁴

Are uninsured depositors common? Kennickell, Kwast, and Starr-McCluer (1996) found that large household depositors tend to keep significant amounts in insured depositories, yet often fail to arrange their holdings to keep them within insurance limits. The study noted that households account for half of total depositors at FDIC insured institutions. With regard to Kennickell, Kwast, and Starr-McCluer’s sample, “Total uninsured deposits amounted to \$337.1 billion—17.3 percent of total household deposits. The magnitude of these holdings underscores the importance of the behavior of large depositors as a stabilizing or destabilizing force at insured institutions” (Kennickell et al, 1999).⁵ Kennickell, Kwast, and Starr-McCluer proposed four main reasons why households hold uninsured funds. These reasons include higher risk compensated by higher interest rates, the “too-big-to-fail” theory, transaction costs associated with keeping deposits fully insured and, lastly, not understanding insurance regulations.⁶

⁴ A reduction in CD interest rates suggests a decrease in the amount of risk borne by the depositor. Such is the case with the presence of depositor preference laws, which allow the FDIC and uninsured depositors to share risk by having the same claimant status.

⁵ Several factors provide stability at insured institutions. The theory of depositor discipline illustrates that the length and volatility of time deposits are indicative of depositor confidence in an institution. Additionally, the percentage of insured and uninsured deposits will vary with the overall financial condition of the institution.

⁶ The “too-big-to-fail” theory is a widely discussed topic in finance literature. The theory suggests that the government will become involved in a bank failure if the institution is large enough that the failure would cause a severe impact on the economy.

III. HYPOTHESES

Two main hypotheses will be tested during this study. The first is that uninsured depositors are at risk of monetary loss. Using statistical analysis, one can assign percentages to historical loss rates and historical returns on deposits and explore the difference. For the intention of this study, the time value of money (TVM) concept will not be factored, as data is not currently available regarding precise timing of payments to uninsured depositors.

Although uninsured/exposed depositors demand a higher rate of return on their deposits than insured depositors, this rate is not high enough to compensate them for their exposure to a bank failure and the loss of their uninsured amount. Thus, the second hypothesis that will be tested in this study implies that the average return on uninsured/exposed bank deposits at a failed institution is significantly lower than the average return on other marketable instruments, adjusting for risk. Investors in bank time deposits and other marketable instruments bear risk of monetary loss. Despite FDIC coverage, exposed bank time depositors may be at an even greater risk than investors in other marketable instruments. The instruments that will be utilized include stock, commercial paper, treasury bills and publicly traded bonds.

IV. SAMPLE & METHODOLOGY

A. FAILED BANK SAMPLE

The data for this study is supplied by various FDIC bank failure statistics from the years 1986 to 2000.⁷ The sample utilized includes 1,335 failed banks associated with the Bank Insurance Fund (BIF). This data will be used in conjunction with statistics on all BIF

⁷ The failed bank sample is derived from the Failed Bank Cost Analysis, FDIC Division of Finance, 2000.

banks (which includes failed and non-failed institutions) during the same time period to derive universal risk probabilities.

Table 1 illustrates the division of insured and uninsured domestic deposits. This information is derived from the 1999 FDIC Annual Report. It is important to note that this data set includes both failed and non-failed BIF institutions.

From this data set, one can conclude that a majority (mean = 75.3%) of deposits at BIF banks are covered under FDIC insurance. Also, the percentage of insured deposits has been decreasing (i.e. the percentage of uninsured deposits has been increasing) over the past 14 years.⁸ This relationship is graphically represented in Figure 1. Based on this historical evidence, we can estimate the amount of uninsured deposits at failed institutions.

Table 2 reports the number of banks that failed between 1986 and 2000, as well as their related dollar amounts of total assets, total liabilities and total deposits at the date of failure.⁹ By applying the percentage of uninsured deposits (presented in Table 1) to total deposits at the time of failure (presented in Table 2), we can see that there is a quantifiable monetary risk associated with a bank failure. This risk is measured by the amount of exposed /uninsured deposits. The results from this measure are discussed in section V.

B. MARKETABLE INSTRUMENT DATA

In order to analyze the riskiness of bank deposits, it is imperative to examine the returns of alternative marketable instruments to use as a comparison. The data regarding

⁸ Numerous reasons could account for this change. One explanation is the reduction of bank failures over time and the increase in the stability of the banking industry.

⁹ Note that in 1990 and 1993 total deposits exceed total liabilities. These figures differ due to timing differences for the bank failure date. In the Failure Transaction Database, the failure date is the earlier date of government takeover or the date that assistance is rendered. However, the Failed Bank Cost Analysis may utilize a mixture of the resolution date, date of receivership, date of insolvency, or other definitions for the bank failure date.

yearly returns (in percent) is presented in Table 3. A difference of means test is completed using daily return data of the various financial instruments against the returns of three types of CDs. Results are reported in Tables 4 through 9 and analyzed in section V.

V. ANALYSIS & IMPLICATIONS

The first hypothesis suggests that uninsured depositors are at risk of monetary loss. Table 2 reports that the average dollar amount of uninsured deposits at failed institutions from 1986 to 2000 is \$2,756,776,522.79. The highest exposed position existed between 1988 and 1993. During this time period, 946 BIF banks failed. This period was marked by changing banking regulations. Also during this time period, banks incurred large loan losses due to the write-offs of bad loans to lesser developed countries, as well as risky commercial real estate loans and loans to volatile industries.

Information is not consistently or readily available on what percentages of uninsured deposits are recovered after a bank failure.¹⁰ However, this paper was able to explore monetary values of uninsured deposits, using readily available information provided from the 1999 FDIC Annual Report. Because absolute numbers regarding specific loss rates to uninsured depositors were not utilized in this study due to unavailability, it is essential to focus on the second of the two hypotheses in order to provide an accurate measure of risk.

In reference to the second hypothesis, the data reveals that over the time period studied, the average yearly returns on 30 day, 3 month, and 6 month certificates of deposit (5.93%, 5.99%, and 6.08%, respectively) are closest to those of the 3 month, 6 month and 1

¹⁰ The FDIC was contacted regarding this matter. Data regarding the exact amount and timing of uninsured deposits was not properly maintained until after 1993. Prior to 1993, it was common for uninsured depositors to be paid off along with insured depositors. The FDIC contact offered the "too-big-too-fail theory" as one explanation for this policy. From 1993 on, data is currently being compiled. This data was not publicly available at the time of this study. We feel that when this data becomes widely and consistently available, further investigation will need to be done.

year government treasury bills (5.39%, 5.50%, and 5.59%, respectively). A fundamental rule of finance suggests that a security's return is correlated with the overall risk of the security. Does this finding imply that certificates of deposit are only slightly more risky than government treasury bills? In order to address this question, one must assume that an explanation of risk includes an analysis of the security's standard deviation. Appropriately, the standard deviation of all three CD instruments are higher than the three T-bills utilized in this study. Using standard deviation as a measure of risk, the S&P 500 was the riskiest security in the sample, with a standard deviation of 12.41. Conversely, AAA bonds had the lowest standard deviation (1.01).

Additionally, the lowest average yearly returns found in this study were related to commercial paper (4.8243% return). The highest average yearly returns found in this study were related to the S&P 500 (13.6434% return). The aforementioned risk (standard deviation) and return relationship is graphically represented in Figure 2.

Table 4 reports t-statistics comparing the yearly average of the daily rates/return of 30-day CDs to various marketable instruments. In order to account for maturity risk, it is vital to compare instruments with the same maturity. Table 7 shows the relationship between 30-day CD and 30-day commercial paper. The mean average return of 30-day commercial paper is statistically significantly higher than that of 30-day CDs in 1992, 1993, 1995 and 1996.

Table 5 reports t-statistics comparing the yearly average of the daily rates/return of 3-month CDs to various marketable instruments. Table 8 shows the relationship between 3-month CDs and 90-day commercial paper, as well as the relationship between 3-month CDs and 3-month T-bills. The mean average return of 90-day commercial paper is statistically significantly higher than that of 3-month CDs in 1992, 1993 and 1996. Conversely, the mean

average return of 3-month CDs is statistically significantly higher than that of 90-day commercial paper in 1990 and 1997. This finding is indicative of CDs having more risk than commercial paper during the years 1990 and 1997. Additionally, during all years between 1986 and 2000, the mean average return of 3-month CDs is statistically significantly higher than that of 3-month T-bills. This finding is reflective of the lack of default risk associated with government instruments.

Table 6 reports t-statistics comparing the yearly average of the daily rates/return of 6-month CDs to various marketable instruments. Table 9 shows the relationship between 6-month CDs and 6-month commercial paper, as well as the relationship between 6-month CDs and 6-month T-bills. The mean average return of 6-month commercial paper is statistically significantly higher than that of 6-month CDs in 1993. Conversely, the mean average return of 6-month CDs is statistically significantly higher than that of 6-month commercial paper in 1988, 1989, 1990, 1996 and 1997. Additionally, during all years between 1986 and 2000, the mean average return of 6-month CDs is statistically significantly higher than that of 6-month T-bills.

VI. CONCLUSION

The main purpose of this study is to determine the extent to which uninsured depositors are at monetary risk. Table 1 provides historical rates related to the amount of uninsured deposits. These loss rates can then be applied to information gathered regarding failed banks, and are shown in Table 2. This information provides the foundation of support for our first hypothesis. As mentioned earlier in the study, further investigation is needed to determine the timing and recovery values of uninsured/exposed deposits at failed institutions.

To properly determine the extent to which uninsured depositors are at monetary risk, it is imperative to study the overall riskiness of certificates of deposits.

Despite the inherent risk of default, the average yearly returns on certificates of deposit (shown in Table 3) are closely related to the returns associated with government treasury bills. This evidence is somewhat surprising, considering it was established earlier in the study that there is significant risk associated with certificates of deposit in the event that there is a monetary amount exposed/uninsured should the bank fail. Notably, a government treasury bill is considered to be one of the least risky securities in the market.

However, by using difference of means tests (presented in Tables 4 through 6), as well as accounting for differences in maturities (Tables 7 through 9), it was proven in this study that the mean average return of CDs is statistically significantly higher than that of T-bills between 1986 and 2000. Thus, although investors are at monetary risk in the event of a bank failure, they are being compensated. However, is this compensation enough? Further research is needed to explain the amount of specific CD interest rates prior to an institution's failure.

When comparing the commercial paper returns to CD returns, certain years provide different answers to the question of which instrument is riskier. Further research is needed to provide data regarding the default rates of commercial paper.

From this study, it is important to conclude that by applying the percentage of uninsured deposits related to all institutions to those that have failed, we can derive a good estimate of what uninsured depositors could theoretically lose. It is also important to conclude that the riskiness of bank deposits should be compared to other marketable securities in order to appropriately measure risk.

Table 1**Annual Statistics – All BIF Institutions**

This table contains both failed and non-failed BIF institutions. Total domestic deposits include both insured and uninsured deposits. The percentage of uninsured deposits is equal to one minus the percentage of insured deposits. Total domestic deposits and insured deposits are shown in millions of dollars.

YEAR	TOTAL DOMESTIC DEPOSITS	INSURED DEPOSITS	PERCENTAGE OF INSURED DEPOSITS	PERCENTAGE OF UNINSURED DEPOSITS
1986	\$2,167,596	\$1,634,302	75.4%	24.6%
1987	2,201,549	1,658,802	75.3	24.7
1988	2,330,768	1,750,259	75.1	24.9
1989	2,465,922	1,873,837	76.0	24.0
1990	2,540,930	1,929,612	75.9	24.1
1991	2,520,074	1,957,722	77.7	22.3
1992	2,512,278	1,945,623	77.4	22.6
1993	2,493,636	1,906,885	76.5	23.5
1994	2,463,813	1,896,060	77.0	23.0
1995	2,575,966	1,952,543	75.8	24.2
1996	2,642,107	2,007,447	76.0	24.0
1997	2,785,990	2,055,874	73.8	26.2
1998	2,996,396	2,141,268	71.5	28.5
1999	3,038,385	2,157,536	71.0	29.0
Mean	2,552,529.3	1,919,126.4	75.3	24.7
Standard Deviation	253,943.90	155,970.35	1.99	1.99

Source: FDIC 1999 Annual Report

Table 2**Annual Statistics – Failed BIF Institutions**

Table presents total assets, total liabilities, and total deposits at time of bank failure. Percentages of uninsured deposits are presented in Table 1. The estimated amounts of uninsured deposits are calculated by multiplying the percentage of uninsured deposits by total deposits.

YEAR	NUMBER OF FAILED BIF INSTITUTIONS ^B	TOTAL ASSETS (\$) ^B	TOTAL LIABILITIES (\$) ^A	TOTAL DEPOSITS (\$) ^A	PERCENTAGE OF UNINSURED DEPOSITS (PER TABLE 1)	ESTIMATED UNINSURED DEPOSITS (\$)
1986	145	7,638,580,417	7,158,172,777	5,912,318,486	24.6	1,454,430,348
1987	203	9,229,324,672	8,662,407,728	5,726,982,993	24.7	1,414,564,799
1988	280	54,455,815,278	48,839,406,971	25,900,907,224	24.9	6,449,325,899
1989	207	31,604,760,339	26,745,418,772	17,187,574,304	24.0	4,125,017,833
1990	169	15,740,110,273	15,140,599,243	19,593,721,524	24.1	4,722,086,887
1991	127	71,462,259,792	60,662,578,020	44,450,946,326	22.3	9,912,561,031
1992	122	45,484,855,714	43,358,964,435	23,207,401,403	22.6	5,244,872,717
1993	41	3,528,443,733	3,424,999,036	18,439,782,527	23.5	4,333,348,894
1994	13	1,405,417,185	1,287,610,717	1,233,093,693	23.0	283,611,549
1995	6	743,427,435	659,519,786	611,503,919	24.2	147,983,948
1996	5	181,731,300	169,806,084	169,520,708	24.0	40,684,970
1997	1	25,829,736	25,548,790	25,548,790	26.2	6,693,783
1998	3	431,735,391	330,211,164	329,707,044	28.5	93,966,508
1999	7	1,377,902,503	1,315,761,424	1,261,110,874	29.0	365,722,153
2000	6	385,431,183	341,496,514	107,110,100	N/A	N/A
TOTAL	1,335.00	243,695,624,950.00	218,122,501,463.00	164,157,229,914.19	N/A	38,594,871,319.02
MEAN	89.00	16,246,374,996.67	14,541,500,097.53	10,943,815,327.61	24.69	2,756,776,522.79
SD	94.96	23,283,006,270.73	20,459,104,299.24	13,455,736,105.25	1.99	3,081,192,241.37

Sources: Failure Transaction Database, FDIC Division of Research and Statistics, November 9, 1999^A, and Failed Bank Cost Analysis, FDIC Division of Finance, 2000^B.

Table 3**Interest Rates/Returns on Marketable Instruments**

Table 3 presents average annual interest rates and returns for various financial instruments. The S&P 500 index returns are derived from the CRSP data tapes. All other rates/returns are from the Federal Reserve Board website. Data is not currently available from the Federal Reserve website for commercial paper for the years 1998 – 2000.

Year	30-Day CD	3-Month CD	6-Month CD	Aaa Bonds	Baa Bonds	30-Day CP	90-Day CP	6-Month CP	3-Month T-Bill	6-Month T-Bill	1-Year T-Bill	SP500
1986	6.61	6.51	6.50	9.02	10.39	6.61	6.49	6.39	5.97	6.02	6.07	14.73
1987	6.75	6.87	7.01	9.38	10.58	6.74	6.82	6.85	5.78	6.03	6.33	7.51
1988	7.59	7.73	7.91	9.71	10.83	7.58	7.66	7.68	6.67	6.91	7.13	13.16
1989	9.11	9.09	9.08	9.26	10.18	9.11	8.99	8.80	8.11	8.03	7.92	24.97
1990	8.15	8.15	8.17	9.32	10.36	8.15	8.06	7.95	7.50	7.46	7.35	-5.51
1991	5.82	5.83	5.91	8.77	9.80	5.89	5.87	5.85	5.38	5.44	5.52	24.38
1992	3.64	3.68	3.76	8.14	8.98	3.71	3.75	3.80	3.43	3.54	3.71	4.84
1993	3.11	3.17	3.28	7.22	7.93	3.17	3.22	3.30	3.00	3.12	3.29	7.19
1994	4.38	4.63	4.96	7.97	8.63	4.43	4.66	4.93	4.25	4.64	5.02	-1.07
1995	5.87	5.92	5.98	7.59	8.20	5.93	5.93	5.93	5.49	5.56	5.60	29.67
1996	5.35	5.39	5.47	7.37	8.05	5.43	5.41	5.42	5.01	5.08	5.22	19.16
1997	5.54	5.62	5.73	7.27	7.87	5.54	5.58	5.62	5.06	5.18	5.32	28.67
1998	5.49	5.47	5.44	6.53	7.22	N/A	N/A	N/A	4.78	4.83	4.80	25.71
1999	5.19	5.33	5.46	7.05	7.88	N/A	N/A	N/A	4.64	4.75	4.81	19.47
2000	6.35	6.46	6.59	7.62	8.36	N/A	N/A	N/A	5.82	5.90	5.78	-8.23
Mean	5.93	5.99	6.08	8.15	9.02	6.02	6.04	6.04	5.39	5.50	5.59	13.64
SD	1.60	1.58	1.55	1.01	1.21	1.76	1.70	1.63	1.37	1.32	1.26	12.41

Sources: Federal Reserve Website, and CRSP (Center For Research & Securities Prices) data tapes.

Table 4**Difference of Means Statistical Results**

The following table reports t-statistics comparing the yearly average of the daily rates/return of 30-day CDs to various marketable instruments. * denotes significance at 10%, ** at 5% and *** at 1%.

Year	Aaa Bonds	Baa Bonds	30-Day CP	90-Day CP	6-Month CP	3-Month T-Bill	6-Month T-Bill	1-Year T-Bill	SP500
1986	-44.75 ***	-70.32 ***	-0.07	1.88 *	3.47 ***	10.33 ***	9.53 ***	8.92 ***	29.25 ***
1987	-44.93 ***	-68.51 ***	0.15	-1.39	-1.85 *	22.72 ***	15.59 ***	8.41 ***	14.16 ***
1988	-38.11 ***	-57.66 ***	0.14	-0.94	-1.33	12.43 ***	9.39 ***	6.77 ***	28.98 ***
1989	-3.62 ***	-27.65 ***	0.20	2.67 ***	6.07 ***	24.76 ***	24.67 ***	25.23 ***	45.50 ***
1990	-65.11 ***	-108.67 ***	-0.11	4.91 ***	9.78 ***	25.49 ***	26.94 ***	29.94 ***	35.42 ***
1991	-68.02 ***	-86.81 ***	-1.17	-0.76	-0.49	8.07 ***	6.81 ***	5.38 ***	25.81 ***
1992	-165.40 ***	-184.31 ***	-2.19 **	-3.41 ***	-4.73 ***	5.81 ***	2.62 ***	-2.06 **	24.93 ***
1993	-159.84 ***	-185.53 ***	-9.44 ***	-16.51 ***	-28.81 ***	18.40 ***	-1.59	-21.61 ***	24.04 ***
1994	-57.69 ***	-69.03 ***	-0.78	-3.74 ***	-7.11 ***	1.75 *	-3.44 ***	-8.24 ***	28.88 ***
1995	-52.41 ***	-73.77 ***	-5.73 ***	-4.35 ***	-2.59 ***	24.36 ***	13.62 ***	8.74 ***	47.75 ***
1996	-105.30 ***	-135.70 ***	-9.70 ***	-7.53 ***	-5.27 ***	42.42 ***	24.52 ***	7.69 ***	29.66 ***
1997	-83.54 ***	-106.18 ***	0.52	-2.66 ***	-5.79 ***	43.44 ***	32.54 ***	16.28 ***	19.44 ***
1998	-72.93 ***	-148.40 ***	N/A	N/A	N/A	29.69 ***	27.24 ***	25.04 ***	17.36 ***
1999	-47.68 ***	-75.97 ***	N/A	N/A	N/A	17.04 ***	12.81 ***	10.88 ***	18.62 ***
2000	-54.43 ***	-83.91 ***	N/A	N/A	N/A	20.56 ***	19.25 ***	25.41 ***	20.03 ***

Table 5**Difference of Means Statistical Results**

The following table reports t-statistics comparing the yearly average of the daily rates/return of 3-month CDs to various marketable instruments. * denotes significance at 10%, ** at 5% and *** at 1%.

Year	Aaa Bonds	Baa Bonds	30-Day CP	90-Day CP	6-Month CP	3-Month T-Bill	6-Month T-Bill	1-Year T-Bill	SP500
1986	-47.17 ***	-73.08 ***	-1.59	0.37	1.96*	8.84 ***	8.03 ***	7.38 ***	28.83 ***
1987	-40.54 ***	-62.43 ***	2.41 **	0.83	0.33	23.11 ***	16.70 ***	10.06 ***	14.41 ***
1988	-35.23 ***	-54.64 ***	2.04 **	0.97	0.62	14.30 ***	11.32 ***	8.84 ***	29.53 ***
1989	-3.79 ***	-24.80 ***	-0.40	1.89*	5.14 ***	21.30 ***	21.62 ***	22.46 ***	45.08 ***
1990	-67.42 ***	-111.65 ***	-0.18	5.02 ***	9.98 ***	25.87 ***	27.35 ***	30.37 ***	35.42 ***
1991	-63.05 ***	-81.13 ***	-0.93	-0.54	-0.28	7.90 ***	6.70 ***	5.34 ***	25.78 ***
1992	-176.47 ***	-195.11 ***	-1.04	-2.27 **	-3.67 ***	7.30 ***	3.97 ***	-0.96	25.29 ***
1993	-156.01 ***	-181.54 ***	0.88	-6.40 ***	-17.16 ***	25.03 ***	6.63 ***	-12.98 ***	24.53 ***
1994	-50.46 ***	-61.00 ***	2.53 **	-0.41	-3.74 ***	5.03 ***	-0.12	-4.82 ***	30.21 ***
1995	-48.64 ***	-68.77 ***	-0.90	-0.80	-0.49	23.02 ***	14.40 ***	9.82 ***	47.99 ***
1996	-100.91 ***	-130.95 ***	4.50 ***	-2.36 **	-1.90*	42.69 ***	26.67 ***	9.91 ***	29.90 ***
1997	-81.79 ***	-104.89 ***	7.31 ***	3.41 ***	-0.35	54.81 ***	42.68 ***	23.19 ***	19.72 ***
1998	-70.22 ***	-138.10 ***	N/A	N/A	N/A	28.25 ***	25.86 ***	23.90 ***	17.29 ***
1999	-42.34 ***	-68.48 ***	N/A	N/A	N/A	19.96 ***	15.84 ***	13.99 ***	19.22 ***
2000	-54.94 ***	-87.06 ***	N/A	N/A	N/A	26.66 ***	26.24 ***	33.48 ***	20.37 ***

Table 6

Difference of Means Statistical Results

The following table reports t-statistics comparing the yearly average of the daily rates/return of 6-month CDs to various marketable instruments. * denotes significance at 10%, ** at 5% and *** at 1%.

Year	Aaa Bonds	Baa Bonds	30-Day CP	90-Day CP	6-Month CP	3-Month T-Bill	6-Month T-Bill	1-Year T-Bill	SP500
1986	-47.17 ***	-72.96 ***	-1.77	0.18	1.77*	8.62 ***	7.81 ***	7.16 ***	28.76 ***
1987	-36.71 ***	-57.38 ***	4.71 ***	3.09 ***	2.55*	24.23 ***	18.26 ***	11.95 ***	14.69 ***
1988	-32.65 ***	-52.42 ***	4.42 ***	3.36 ***	3.06**	16.85 ***	13.92 ***	11.58 ***	30.25 ***
1989	-3.31 ***	-20.91 ***	-0.46	1.53	4.48 ***	17.92 ***	18.52 ***	19.55 ***	44.57 ***
1990	-54.53 ***	-94.68 ***	1.05	5.38 ***	9.71 ***	24.33 ***	25.68 ***	28.56 ***	35.49 ***
1991	-59.23 ***	-77.01 ***	0.40	0.75	0.99	9.05 ***	7.88 ***	6.54 ***	26.11 ***
1992	-163.77 ***	-182.91 ***	1.40	0.30	-1.07	9.44 ***	6.21 ***	1.35	25.82 ***
1993	-151.74 ***	-177.28 ***	15.91 ***	7.51 ***	-2.92 ***	39.38 ***	19.93 ***	-1.17	25.38 ***
1994	-43.07 ***	-52.97 ***	6.53 ***	3.58 ***	0.29	9.03 ***	3.88 ***	-0.76	32.02 ***
1995	-41.09 ***	-58.19 ***	1.88*	1.72*	1.44	18.28 ***	13.27 ***	10.04 ***	47.86 ***
1996	-85.68 ***	-113.22 ***	2.33 **	3.88 ***	3.01 ***	33.57 ***	24.80 ***	12.31 ***	30.30 ***
1997	-76.40 ***	-99.84 ***	17.03 ***	12.55 ***	8.23 ***	65.53 ***	53.20 ***	31.77 ***	20.14 ***
1998	-55.08 ***	-99.06 ***	N/A	N/A	N/A	24.24 ***	22.16 ***	20.98 ***	17.20 ***
1999	-39.25 ***	-65.24 ***	N/A	N/A	N/A	23.90 ***	19.53 ***	17.64 ***	19.62 ***
2000	-50.57 ***	-83.80 ***	N/A	N/A	N/A	32.82 ***	33.36 ***	41.26 ***	20.77 ***

Table 7**Mean Difference of 30-Day CDs Compared to 30-Day CP**

The following table reports a comparison of the mean average rates/return of 30-day CDs and 30-day CP using difference of means tests. See Table 3 for mean rates/returns. T-statistics are computed using daily rates/return. * denotes significance at 10%, ** at 5% and *** at 1%.

Year	30 Day CD Mean Return	30 Day CP Mean Return	Difference	t-statistic
1986	6.61	6.61	-0.005	-0.07
1987	6.75	6.74	0.0077	0.15
1988	7.59	7.58	0.0104	0.14
1989	9.11	9.11	0.0087	0.20
1990	8.15	8.15	-0.002	-0.11
1991	5.82	5.89	-0.066	-1.17
1992	3.64	3.71	-0.077	-2.19 **
1993	3.11	3.17	-0.057	-9.44 ***
1994	4.38	4.43	-0.057	-0.78
1995	5.87	5.93	-0.063	-5.73 ***
1996	5.35	5.43	-0.087	-9.70 ***
1997	5.54	5.54	-0.0064	0.52
1998	5.49	N/A	N/A	N/A
1999	5.19	N/A	N/A	N/A
2000	6.35	N/A	N/A	N/A

Table 8**Mean Difference of 3-Month CDs Compared to 90-Day CP and 3-Month T-Bill**

The following table reports a comparison of the mean average rates/return of 3-month CDs, 90-day CP and 3-month T-bills using difference of means tests. See Table 3 for mean rates/returns. T-statistics are computed using daily rates/return. * denotes significance at 10%, ** at 5% and *** at 1%.

Year	3 Month CD Mean Return	90 Day CP			3 Month T-bill		
		Mean Return	Difference	t-statistic	Mean Return	Difference	t-statistic
1986	6.51	6.49	0.0232	0.37	5.97	0.5409	8.84 ***
1987	6.87	6.82	0.0475	0.83	5.78	1.0899	23.11 ***
1988	7.73	7.66	0.0726	0.97	6.67	1.0609	14.30 ***
1989	9.09	8.99	0.0967	1.89*	8.11	0.9756	21.30 ***
1990	8.15	8.06	0.0884	5.02 ***	7.5	0.6524	25.87 ***
1991	5.83	5.87	-0.033	-0.54	5.38	0.4567	7.90 ***
1992	3.68	3.75	-0.073	-2.27 **	3.43	0.2479	7.30 ***
1993	3.17	3.22	-0.048	-6.40 ***	3	0.1778	25.03 ***
1994	4.63	4.66	-0.033	-0.41	4.25	0.3774	5.03 ***
1995	5.92	5.93	-0.014	-0.80	5.49	0.4265	23.02 ***
1996	5.39	5.41	-0.023	-2.36 **	5.01	0.3854	42.69 ***
1997	5.62	5.58	0.0406	3.41 ***	5.06	0.556	54.81 ***
1998	5.47	N/A	N/A	N/A	4.78	0.6915	28.25 ***
1999	5.33	N/A	N/A	N/A	4.64	0.69	19.96 ***
2000	6.46	N/A	N/A	N/A	5.82	0.6397	26.66 ***

Table 9**Mean Difference of 6-Month CDs Compared to 6-Month CP and 6-Month T-Bill**

The following table reports a comparison of the mean average rates/return of 6-month CDs, 6-month CP and 6-month T-bills using difference of means tests. See Table 3 for mean rates/returns. T-statistics are computed using daily rates/return. * denotes significance at 10%, ** at 5% and *** at 1%.

Year	6 Month CD Mean Return	6 Month CP			6 Month T-bill		
		Mean Return	Difference	t-statistic	Mean Return	Difference	t-statistic
1986	6.5	6.39	0.1126	1.77*	6.02	0.4772	7.81***
1987	7.01	6.85	0.1584	2.55*	6.03	0.9731	18.26***
1988	7.91	7.68	0.2225	3.06**	6.91	0.9918	13.92***
1989	9.08	8.8	0.2848	4.48***	8.03	1.049	18.52***
1990	8.17	7.95	0.2281	9.71***	7.46	0.7187	25.68***
1991	5.91	5.85	0.0618	0.99	5.44	0.4685	7.88***
1992	3.76	3.8	-0.036	-1.07	3.54	0.2177	6.21***
1993	3.28	3.3	-0.022	-2.92***	3.12	0.1581	19.93***
1994	4.96	4.93	0.0246	0.29	4.64	0.32	3.88***
1995	5.98	5.93	0.0464	1.44	5.56	0.4114	13.27***
1996	5.47	5.42	0.0516	3.01***	5.08	0.3865	24.80***
1997	5.73	5.62	0.1042	8.23***	5.18	0.5496	53.20***
1998	5.44	N/A	N/A	N/A	4.83	0.6144	22.16***
1999	5.46	N/A	N/A	N/A	4.75	0.7119	19.53***
2000	6.59	N/A	N/A	N/A	5.9	0.6841	33.36***

Figure 1
Percentage of Insured & Uninsured Deposits By Year

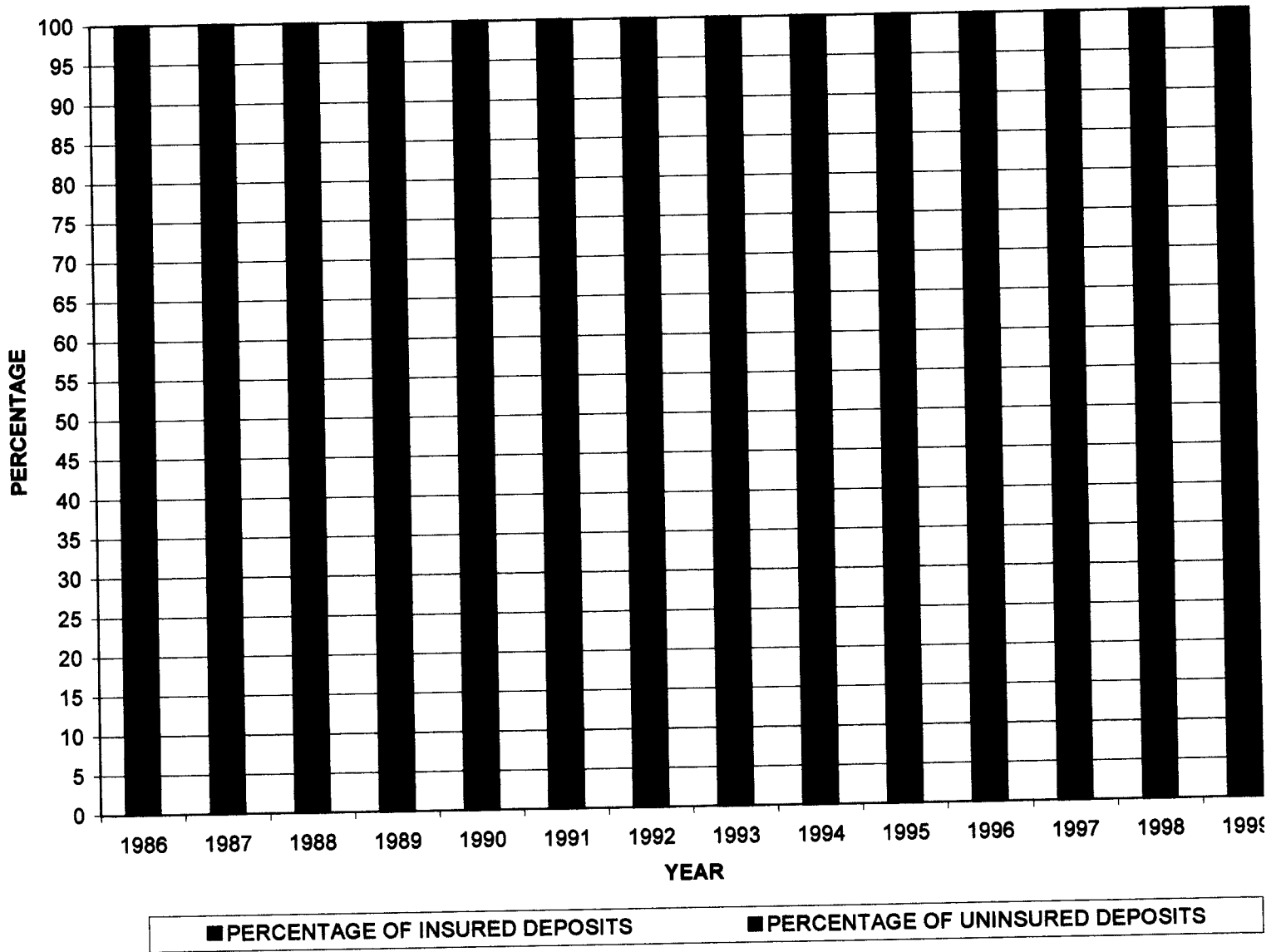
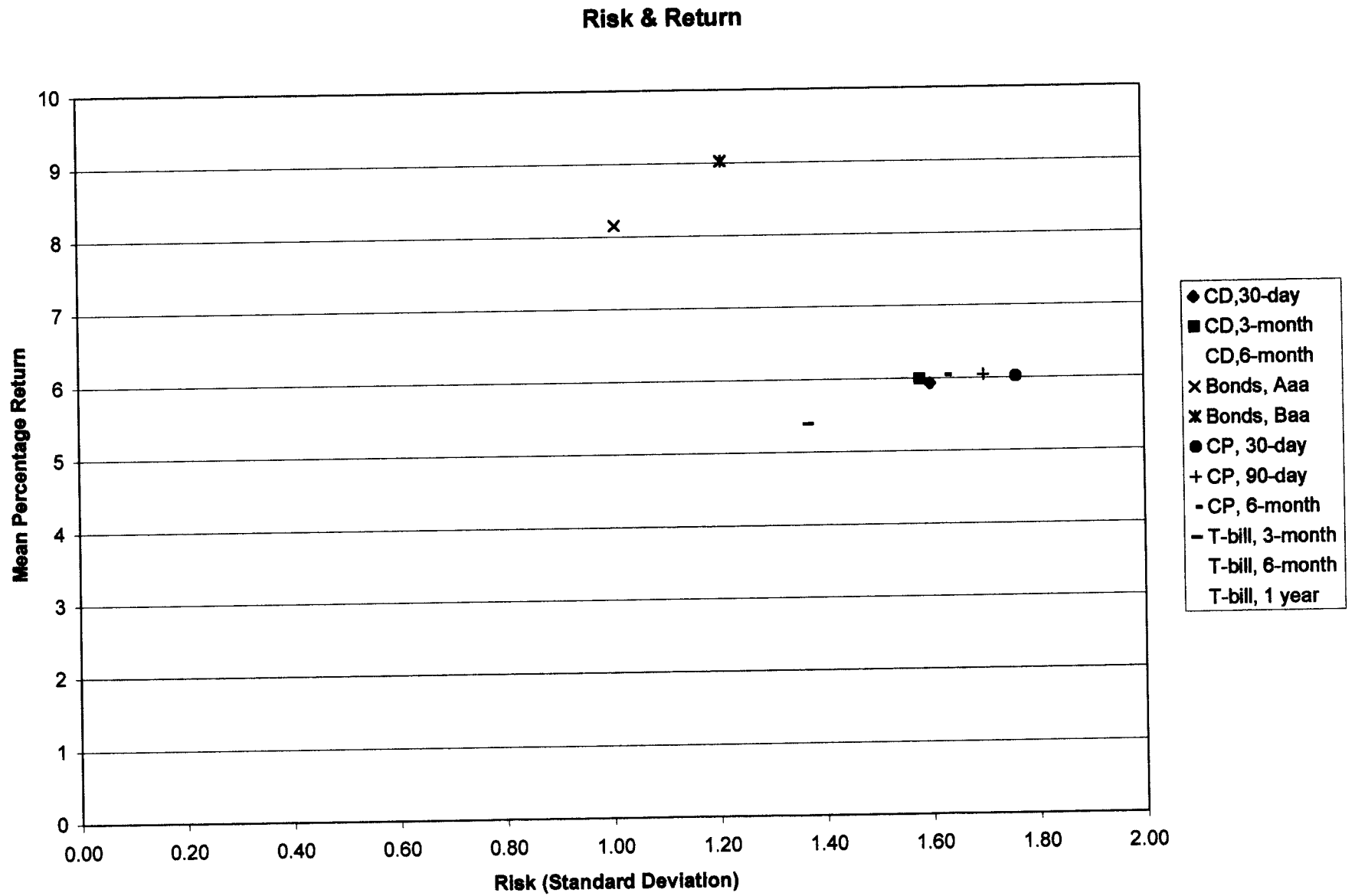


Figure 2



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