



Financial Institution

Historical Stock Price
Volatility Survey

FAS 123R / ASC 718

December 31, 2011

Seventeenth Quarterly Edition

“Volatility is a measure of the amount by which a financial variable, such as a share price, has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period.”

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The **seventeenth quarterly edition** of the Financial Institution Stock Price Volatility Survey contains stock price data through **December 31, 2011**. Survey results were produced using **Volatility Informatics** software which simultaneously calculated the historical stock price volatility of approximately 1,000 financial institutions with results displayed by data sampling frequency, asset size, volatility range, city, state and region.

VOLATILITY SURVEY METHODOLOGY

- Exchange traded or listed financial institutions with total assets of \$5 billion or less have been included in this survey. Since the Survey information is used primarily by community financial institutions, asset size or market capitalization weighting was not used to calculate the Survey averages. If asset size or market capitalization weighting were used, larger institutions would have an inordinate impact on the Survey results.
- Institutions which are owned by holding companies are individually listed with the holding company name shown along with the holding company's stock trading symbol.
- Institutions with annualized volatilities in excess of 100% were excluded from the survey. It was determined that these institutions' price data was either flawed (not properly adjusted for stock splits or stock dividends), or some significant event was impacting the market price of the stock (merger, acquisition or financial difficulty).
- Volatility calculations were derived from historical data containing daily, weekly and monthly stock prices updated through **December 31, 2011**. Financial institutions included in the Survey must have had readily available historical stock prices ("adjusted" for stock splits and stock dividends) and were either traded on a recognized exchange or consistently listed over the counter.
- The Survey used a six year historical data span covering stock prices from **December 31, 2005 through December 31, 2011**. Many of the sampled institutions have historical stock price data covering the full six year span. However, institutions with more recent market listings (IPO's)

or de novo institutions with a minimum of two years market price history were also included.

The **Volatility Informatics** program assumes the following number of trading days for calculating the annualized stock price volatility:

- 252 annual trading days were assumed for daily price calculations,
- 52 annual trading days were assumed for weekly price calculations, and
- 12 annual trading days were assumed for monthly price calculations.

The following schedule summarizes the information contained in this Survey:

	Daily Price Frequency	Weekly Price Frequency	Monthly Price Frequency
# of U.S. States/Territories	48	48	49
# of Institutions	863	893	943
Average Asset Size (000's)	\$821,093	\$804,496	\$777,644
Average Annualized Volatility	52.13%	45.31%	39.81%
Average Price Data History (years)	5.62	5.60	5.61

While stock prices were obtained from sources believed to be accurate, the following circumstances may impact results obtained from the **Volatility Informatics** model:

Historical stock market prices for some over the counter listed stocks may not fully reflect retroactive adjustments for stock splits and stock dividends. A concerted effort was made to consistently obtain the requisite number of "Adjusted Closing Prices" for all stocks so that daily, weekly and monthly volatility calculations would be uniformly applied for every institution and the effects of stock splits and stock dividends would accurately represent the stock price volatility calculation. Volatility calculations utilizing "Unadjusted" stock prices for institutions which have had stock splits or stock dividends will produce higher than normal annualized volatilities, and therefore will be inaccurate. However, given the volume of individual stock price records accumulated, no guaranty can be made as to the complete accuracy of the data on which this Survey was based.

Many Over the Counter stocks are thinly traded and some may demonstrate unusually low stock price volatilities. These low volatilities may not be relevant to an actively traded stock, or in the case of a de novo institution, an expected volatility of an actively traded stock.

- ☑ The effects of pending or announced mergers and acquisitions can cause unusually high stock price volatilities which may not be indicative of an ongoing independent financial institution.
- ☑ Financial institutions which may have encountered financial difficulty will tend to have unusually high historical stock price volatilities. Comparisons to these stocks may not be relevant to an ongoing, financially sound institution.
- ☑ Examining and assessing the Survey results based on State and Regional groupings may be impaired due to the relatively small number of institutions headquartered in certain states or regions. Of the states and territories included in the Survey, many contained three or fewer institutions that met the criteria for inclusion in this Survey. Also noteworthy was Puerto Rico which was assigned to its own individual region due to unique demographic and geographic differences and relatively low number of independent banks. Conversely, California was assigned to its own region given the state's sheer number of financial institutions included in the Survey and the perceived uniqueness of the banking and economic climate in that state.
- ☑ Generally, institutions which have annualized stock price volatilities outside of the range of **30% to 75% (for daily prices), 20% to 60% (for weekly prices) and 15% to 50% (for monthly prices)** may warrant additional institution level investigation. Survey information and experience with actual Stock Informatics clients have confirmed that these are expected stock volatility ranges for community financial institutions.

WHY BE CONCERNED ABOUT “VOLATILITY”?

“Volatility is a measure of the amount by which a financial variable, such as a share price, has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period.”

Expected stock price volatility is just one of six input assumptions used by the Black Scholes model, a commonly used formula to calculate equity grant fair value (i.e. compensation cost). But it is one of the more important and subjective model assumptions requiring each institution to analyze their historical stock price data, coupled with a reasonableness evaluation considering whether historical trends will continue for a future period covering the expected life of any new equity grant. It is important, therefore, not to merely use an institution's historical volatility as the expected volatility – other factors should be considered which may lead to a different conclusion regarding the future stock performance.

Companies are encouraged to evaluate their historical stock price data and other factors to arrive at expected stock price volatility. However, FASB does not specify a method of estimating expected volatility; rather paragraph it provides a list of factors that should be considered in estimating expected volatility. An entity's estimate of expected volatility should be reasonable and supportable. As part of the subjective process, even public companies

might wish to examine peer volatility information to ascertain further confirmation of their expected volatility assumption.

Since de novo and closely held institutions may not have “historical and supportable” information of their own, it may be prudent to examine other publicly traded community bank stocks as discussed in FASB documents, “The process developed by an entity will be determined by the information available to it, and its assessment of how that information would be used to estimate fair value.” It does not, however, preclude non public companies from considering their own historical stock prices when such information is available and is considered a meaningful future indicator.

Companies which may establish their expected volatility without proper analysis stand the risk of either hitting the mark too low, thereby significantly understating their compensation expense, or setting the volatility too high, which will saddle the company with a higher compensation expense than is necessary or prudent. Generally, a one percentage point change in the annualized volatility will increase or decrease compensation expense by approximately 2%. This represents a direct relationship (as opposed to an inverse relationship) and therefore – by keeping all other compensation model assumptions constant – the higher the volatility, the higher the resulting compensation expense. The following chart illustrates and quantifies the monetary impact of various reductions in the expected stock price volatility assumption in a Black Scholes model for a hypothetical grant.

Annualized Stock Volatility:	30.00%	29.00%	28.00%	27.00%	26.00%	25.00%
Number of Options Granted	25,000	25,000	25,000	25,000	25,000	25,000
Market Price	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
Exercise Price	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
Expected Life (years)	6.00	6.00	6.00	6.00	6.00	6.00
Risk Free Rate	4.64%	4.64%	4.64%	4.64%	4.64%	4.64%
Cash Dividend Yield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Option Call Value (cost per option)	\$7.81	\$7.66	\$7.51	\$7.36	\$7.22	\$7.07
% Option Call Value Change from 30% Volatility		-1.89%	-3.86%	-5.90%	-8.02%	-10.21%
Total Compensation Cost	\$195,150	\$191,453	\$187,760	\$184,073	\$180,393	\$176,728
Cost Savings for a 25,000 option grant		(\$3,697.50)	(\$7,390.00)	(\$11,077.50)	(\$14,757.50)	(\$18,422.50)

SELECTING THE APPROPRIATE PRICE OBSERVATION INTERVAL FOR VOLATILITY CALCULATIONS

“If an entity considers historical volatility in estimating expected volatility, it should use intervals that are appropriate based on the facts and circumstances and that provide the basis for a reasonable fair value estimate. For example, a publically traded entity would likely use daily price observations, while a nonpublic entity with shares that occasionally change hands at negotiated prices might use monthly price observations.”

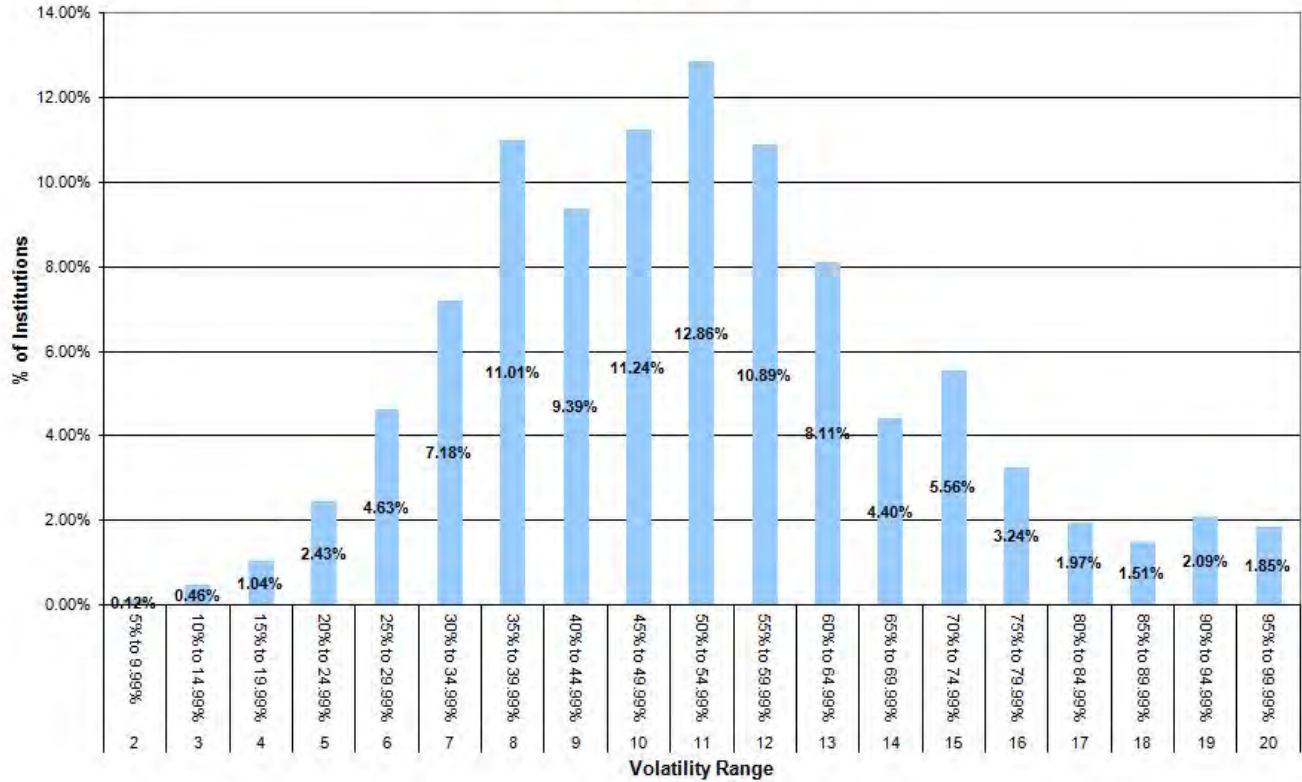
While FASB makes two brief references to price observation intervals for use in volatility calculations, and establishes no hard and fast rules for data interval selection, noticeable differences will result depending upon the selection of daily, weekly or monthly data intervals.

Based on actual Stock Informatics client data as well as price data used in this survey, a general observation can be made that the more frequent the data interval, the more likely a higher annualized volatility will result. Therefore, it may be tempting to use less frequent data intervals to reduce option compensation expense; however that decision may not coincide with the spirit and intent of FASB. Modeling software, such as **Stock Informatics** and **Volatility Informatics**, should be used to analyze the effects of varying the data interval so that results can be measured and evaluated for “appropriateness”.

To illustrate the effect of using different data sampling intervals, the following bar charts show the summary results using daily, weekly and monthly stock price data intervals. The five most common ranges in each chart account for approximately 60% to 80% of the surveyed financial institutions. As the data interval was shortened (i.e. from daily, to weekly, to monthly), the concentration of institutions progressively shifted leftward in the charts indicating a general reduction in the calculated annualized volatility. Also supporting this observation was the reduction on the average annualized volatility of all institutions dropping from **52.13% using daily, to 45.31% for weekly and to 39.81% for monthly data intervals.**

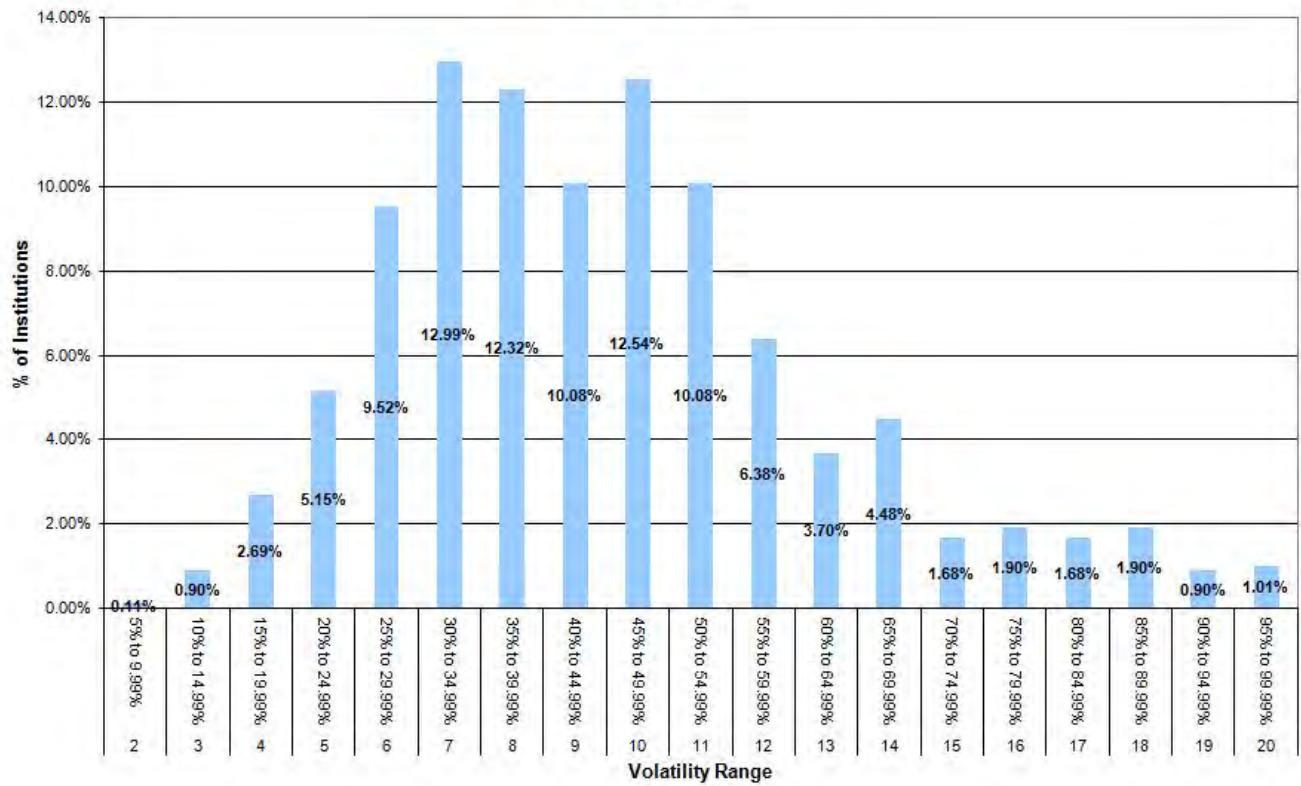
DAILY PRICE SAMPLING INTERVALS

Distribution of Institutions by Annualized Volatility Range Distribution (Banks & Thrifts)



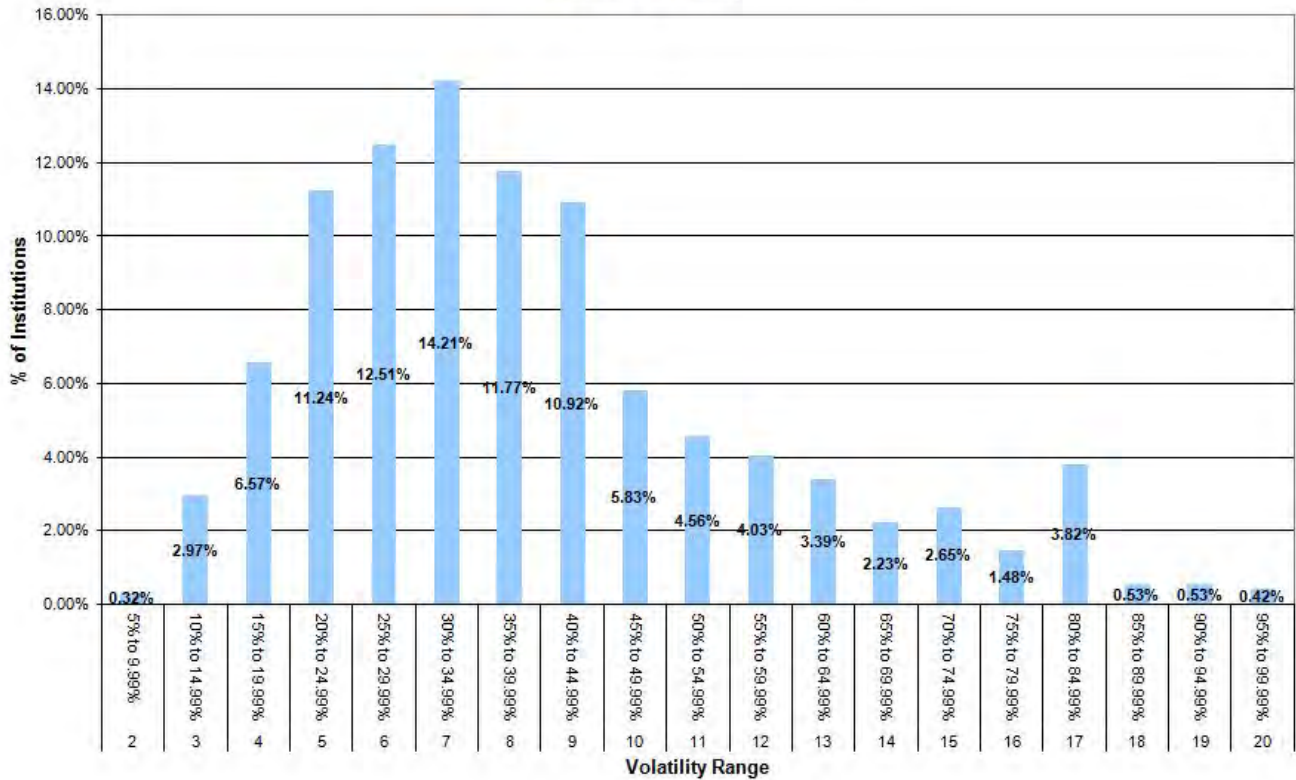
WEEKLY PRICE SAMPLING INTERVALS

Distribution of Institutions by Annualized Volatility Range Distribution (Banks & Thrifts)



MONTHLY PRICE SAMPLING INTERVALS

**Distribution of Institutions by
Annualized Volatility Range Distribution
(Banks & Thrifts)**



WHY HAVE FINANCIAL INSTITUTION AVERAGE STOCK PRICE VOLATILITIES BEEN INCREASING?

For the few years financial institution stocks have been extremely volatile due to generally sharp declines in stock prices. Since individual annual volatilities are factored into longer term calculations (five to six year trailing data) significant changes to the annual trend will begin to have an impact on the longer trailing computations. Therefore, recent upward movements in the average volatility in 2007, 2008, 2009, 2010 and 2011 are causing the increase in the longer term trailing volatility calculations.

GENERAL SURVEY RESULTS

This issue of the Volatility Informatics Survey includes coverage of approximately 1,000 financial institutions. The maximum asset size of a surveyed institution was reduced starting with the September 2008 survey from \$25 billion, to \$5 billion which has resulted in a lower average institution asset size of approximately \$800 million from \$1.3 billion in the December 2007 survey. The reduction in the maximum asset size was determined to produce Survey results that would be more appropriate for smaller community financial institutions that are more likely to use the information. Additionally, as mentioned previously, the Survey averages have not been weighted in relation to each institution's asset size.

The average annualized volatility for all institutions included in the survey (using a daily data interval), covering the prescribed time period, was 52.13% down slightly from the peak of 52.87% in March 2010. The chart below recaps the fairly dramatic increases in the volatility calculations since 2007. As with any survey, there are outliers on both ends of the spectrum and this survey is no different with a minimum volatility of 9.54% and a maximum of 99.86%.

HISTORICAL VOLATILITY SUMMARY

Period Ending	Daily Data Intervals	Weekly Data Intervals	Monthly Data Intervals
12/31/11	52.13%	45.31%	39.81%
9/30/11	52.85%	46.67%	40.01%
6/30/11	52.52%	46.37%	39.85%
3/31/11	52.59%	46.47%	39.87%
12/31/10	52.60%	46.47%	39.91%
9/30/10	52.70%	46.55%	39.78%
6/30/10	52.47%	46.51%	39.63%
3/31/10	52.87%	46.52%	39.09%
12/31/09	49.79%	43.87%	37.42%
9/30/09	48.50%	41.91%	35.76%
6/30/09	46.69%	40.28%	34.45%
3/31/09	43.91%	37.76%	32.15%
12/31/08	39.82%	33.85%	28.95%
9/30/08	34.79%	29.77%	25.80%
6/30/08	31.47%	27.12%	24.07%
12/31/07	29.95%	25.66%	23.11%
10/31/07	29.26%		
7/31/07	28.32%		

The following chart aggregates the Survey data by annualized Volatility Range for daily price intervals. This data shows that the volatility ranges from 25.00% to 74.99% contain the majority, or 85.28%, of the total number of institutions included in the Survey. The data also shows that 4.06% of the institutions had annualized volatilities less than 25.00%; and 10.66% of the institutions had annualized volatility calculations in excess of 74.99%.

DAILY PRICE INTERVALS

(85.28% of the surveyed institutions were within the shaded bands)

Volatility Range	Average of Annualized Volatility	Min of Annualized Volatility	Max of Annualized Volatility	Average of Asset Size (000's)	Number of Institutions	Percentage of Institutions
5% to 9.99%	9.54%	9.54%	9.54%	\$508,502	1	0.12%
10% to 14.99%	13.45%	10.24%	14.76%	\$240,347	4	0.46%
15% to 19.99%	17.16%	15.63%	19.46%	\$430,081	9	1.04%
20% to 24.99%	22.97%	20.16%	24.89%	\$513,213	21	2.43%
25% to 29.99%	27.59%	25.25%	29.92%	\$579,166	40	4.63%
30% to 34.99%	32.17%	30.04%	34.74%	\$696,468	62	7.18%
35% to 39.99%	37.57%	35.18%	39.97%	\$868,961	95	11.01%
40% to 44.99%	42.36%	40.00%	44.92%	\$1,113,264	81	9.39%
45% to 49.99%	47.80%	45.05%	49.96%	\$939,369	97	11.24%
50% to 54.99%	52.77%	50.09%	55.00%	\$955,323	111	12.86%
55% to 59.99%	57.13%	55.10%	59.92%	\$815,655	94	10.89%
60% to 64.99%	62.29%	60.03%	64.86%	\$757,032	70	8.11%
65% to 69.99%	67.59%	65.32%	69.97%	\$870,354	38	4.40%
70% to 74.99%	72.42%	70.12%	74.85%	\$913,144	48	5.56%
75% to 79.99%	76.80%	75.28%	79.86%	\$686,391	28	3.24%
80% to 84.99%	82.63%	80.43%	84.99%	\$393,040	17	1.97%
85% to 89.99%	87.35%	85.15%	89.40%	\$595,356	13	1.51%
90% to 94.99%	92.60%	90.45%	94.92%	\$440,078	18	2.09%
95% to 99.99%	97.44%	96.00%	99.86%	\$507,629	16	1.85%
	52.13%	9.54%	99.86%	\$821,093	863	100.00%

The current and expected financial performance of a community financial institution can be heavily influenced by the vigor and vitality of the markets in which it operates. Not surprisingly, of the states listed in this Survey, those listed in the following tables produced the highest and lowest average annualized volatilities.

Data Frequency		Monthly					
HIGHEST 15 STATES - BY AVERAGE ANNUALIZED VOLATILITY							
Data							
State	Max of Most Recent Stock Data	Average of Annualized Volatility	Average of Years of Stock Data	Average of Asset Size (000's)	Number of Institutions	Percentage of Institutions	
DC	12/31/2011	74.53%	6.00	\$100,809	1	0.49%	
NM	12/31/2011	58.43%	6.00	\$1,081,499	3	1.47%	
NV	12/31/2011	57.62%	5.67	\$1,939,661	6	2.94%	
SC	12/31/2011	57.17%	5.76	\$603,643	19	9.31%	
AZ	12/31/2011	56.35%	5.61	\$938,900	9	4.41%	
OR	12/31/2011	55.72%	5.34	\$509,925	17	8.33%	
MI	12/31/2011	50.38%	5.86	\$409,435	32	15.69%	
NC	12/31/2011	49.81%	5.58	\$698,950	38	18.63%	
FL	12/31/2011	49.26%	5.29	\$783,447	15	7.35%	
CO	12/31/2011	49.03%	6.00	\$877,664	7	3.43%	
WA	12/31/2011	48.02%	5.55	\$1,017,422	18	8.82%	
GA	12/31/2011	47.68%	5.88	\$734,169	19	9.31%	
TN	12/31/2011	47.55%	5.48	\$705,491	13	6.37%	
ID	12/31/2011	45.08%	5.64	\$675,526	6	2.94%	
NE	12/31/2011	45.00%	6.00	\$166,774	1	0.49%	
Overall Value	12/31/2011	51.11%	5.65	\$719,523	204	100.00%	
Data Frequency		Monthly					
LOWEST 15 STATES - BY AVERAGE ANNUALIZED VOLATILITY							
Data							
State	Max of Most Recent Stock Data	Average of Annualized Volatility	Average of Years of Stock Data	Average of Asset Size (000's)	Number of Institutions	Percentage of Institutions	
CT	12/31/2011	34.72%	6.00	\$548,302	12	5.17%	
NY	12/31/2011	33.86%	5.39	\$1,063,653	53	22.84%	
IA	12/31/2011	33.61%	5.72	\$576,897	18	7.76%	
AR	12/31/2011	32.87%	5.95	\$1,026,930	11	4.74%	
MN	12/31/2011	32.62%	6.00	\$588,205	4	1.72%	
WV	12/31/2011	32.62%	5.88	\$874,462	12	5.17%	
ME	12/31/2011	31.17%	5.42	\$1,007,393	6	2.59%	
AK	12/31/2011	30.77%	6.00	\$1,393,918	3	1.29%	
WY	12/31/2011	30.67%	6.00	\$453,940	2	0.86%	
NH	12/31/2011	30.30%	5.69	\$592,045	5	2.16%	
MA	12/31/2011	28.11%	5.72	\$1,602,391	14	6.03%	
PA	12/31/2011	27.03%	5.64	\$826,126	73	31.47%	
LA	12/31/2011	22.57%	4.86	\$490,936	10	4.31%	
RI	12/31/2011	22.54%	5.81	\$1,665,818	3	1.29%	
VT	12/31/2011	18.68%	4.64	\$543,665	6	2.59%	
Overall Value	12/31/2011	30.02%	5.59	\$894,326	232	100.00%	

A WORD ABOUT USING FINANCIAL INSTITUTION INDICES

The complexity and perceived sophistication of Financial Institution Indices has created, in many cases, a rubber stamp of approval to use them as a proxy for a non-public or de novo institutions' expected annual volatility. However, there are noticeable differences between the calculated volatility of each Index and calculations obtained from non weighted averaging of the annualized volatilities of a broad sample of individual community financial institution stocks.

Further, upon examination of the composition of individual financial institutions included in major Indices, there may be a realization that some or all of the Indices are not appropriate due to the biased weighting of mega institutions or the inclusion of institutions which may have little similarity to your institution. Still more concern may arise from the relatively few institutions included in some Indices such as the Standard and Poor's Bank Index and the two Keefe, Bruyette & Woods bank Indices. All three of these Indices have 50 or fewer component financial institutions – all of which are rather large.

In other industries where stock price information and competitive metrics are not as readily available as financial institutions, the selection of an Industry Index may be appropriate. However, based in the following excerpts from FASB, it would appear that the use of Indices might not be appropriate for non public and de novo financial institutions due to the significant amount of publicly available information on the FDIC website and the ease of obtaining stock price information from a myriad of free sources to easily "identify similar public entities":

"Nonpublic entities may have sufficient information available on which to base a reasonable and supportable estimate of the expected volatility of their share prices. For example, a nonpublic entity that has an internal market for its shares, has private transactions in its shares, or issues new equity or convertible debt instruments may be able to consider the historical volatility, or implied volatility, of its share price in estimating expected volatility. Alternately, a nonpublic entity that can identify similar public entities for which share or option price information is available may be able to consider the historical, expected, or implied volatility of those entities' share prices in estimating expected volatility."

"For purposes of this Statement, it is not practicable for a nonpublic entity to estimate the expected volatility of its share price if it is unable to obtain sufficient historical information about past volatility, or other information such as noted in paragraph A43, on which to base a reasonable and supportable estimate of expected volatility at the grant date of the award without undue cost and effort. In that situation [if it is costly and difficult to gather the information], this Statement requires a nonpublic entity to estimate a value for its equity share options and similar instruments by substituting the historical volatility of an appropriate industry sector index for the expected volatility of its share price as an assumption in its valuation model."

There also appears to be a misconception that non public companies cannot use their own historical stock price information to consider in arriving at an estimated volatility.

There is an abundance of information available for community banks in preparing their own peer group of traded stocks. If the decision is made to use a Financial Institution index, be careful to consider the methodology (the calculation of the index and the weighting of individual stocks) as well as the number of institutions and the actual list of financial institutions used in the Index. While FASB suggests that Indices are acceptable, there are other contradictory instances in which individual peer stock price volatility calculations are discussed. These instances should lead the reader to the conclusion that Indices should be used only as a last resort – and probably for industries where information is not as readily available as financial institutions.

Time will tell whether the use of Indices will be considered “reasonable and supportable.”

SURVEY SUMMARY

As with any Survey, use the results in the detailed supplemental schedules very carefully. Not every institution is the same and care must be taken in evaluating markets, circumstances and realistic financial projections which can ultimately impact an institution’s future stock price performance. As mentioned at the outset of the Survey, the information in the supplemental schedules covers a historical period of six years with an average data span per institution of **5.62 years** for daily data frequency. This span of data may not be appropriate for a company that has projected an expected life of its equity grants longer or shorter than six years.

- Care should also be taken in reviewing the supporting information in this survey.
- Three sets of data are provided with volatility calculations based on:
 - Daily,
 - Weekly and
 - Monthly stock price intervals
- Since varying results are obtained from using different intervals, care must be taken to select **the most appropriate data interval method in the context of the individual company.**

However, all institutions will find benefit in the level of detail provided in the Survey. The specific details provided should cause one to stop and think about the methodology they are using to analyze their own publicly traded stock. Consideration should also be given to the composition of their peer group or Index if the company is not traded, recently listed, or is a de novo institution with little or no market experience of its own.

STOCK PRICE VOLATILITY CONSULTING

Regardless of your equity grant accounting software platform, or the industry in which you operate, we can provide expert assistance in determining and documenting your **Expected Stock Price Volatility assumptions**.

ABOUT VOLATILITY INFORMATICS

Volatility Informatics was developed by Data Informatics, LLC. (www.datainformatics.com) to join the company's growing family of data base applications. These applications focus on the unique needs of finance professionals pressed with shorter reporting deadlines while still maintaining critical accuracy.

Volatility Informatics is a companion product to the company's recognized and established stock option accounting software program, **Stock Informatics**, which has an installed client base in over 30 states.

Additionally, the company is the developer of **Bank Informatics**, a PC based software program capable of accessing approved data feeds from a bank's core processing system to assist in accurate and timely preparation of complex financial reports.

FOR FURTHER INFORMATION

For further information concerning custom volatility surveys or volume/site licensing of **Volatility Informatics** survey data, please call Peter Minford at (208) 726-4636 ext 801 or send an e-mail to peterm@datainformatics.com.

PURCHASE COMPLETE SURVEY WITH ALL SUPPORTING DATA

- Daily, Monthly and Weekly Data for each exchange traded financial institution
 - Summary information by State and Region
 - Summary information by Institution Asset Size

The complete Survey, containing over 200 pages of supporting data, may be downloaded for a fee of **\$55.00** by clicking on the following information link:

http://datainformatics.com/Volatility_Informatics.html

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