**Table I  
Summary of Top Fifty Bank Data**

This table summarizes specific characteristics of fifty largest financial institutions (excluding the “Big 6” --- Bank of America, Goldman Sachs, Wells Fargo, Morgan Stanley, Citigroup, and JP Morgan) Pre-crisis is 2002-2007, unless noted otherwise. Post-crisis is 2010 onwards. We compare pre-crisis to the most recent 2015 measure. Panel B is the “Big 6” summary for comparison.

**Panel A: Top 50 US Financial Institutions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Measure** | **Pre-crisis average** | **Post-crisis average** | **2015 average** |
| Volatility | 38.69 | 31.12 | 21.64 |
| Bank volatility/market volatility+ | 1.87 | 1.67 | 1.78 |
| Bank volatility – market volatility | 17.51 | 10.71 | 10.38 |
| Implied volatility | 50.81 | 32.94 | 26.71 |
| Implied bank volatility/market implied | 2.45 | 2.34 | 1.90 |
| Implied bank volatility – market implied | 29.65 | 18.03 | 12.10 |
| Beta | 1.09 | 1.28 | 1.05 |
| CDS spread+++ | 79.14 | 100.67 | 67.93 |
| SRISK% |  |  |  |
| Delta of One-Year 50% OTM Put Option |  |  |  |
| Price-to-book Ratio++++ | 2.05 | 1.32 | 1.44 |

+ For volatility/market comparison, we used the market return of the S&P 500. We used the standard deviation of the daily return over 260 trading days to best approximate an annual average.

++Earliest implied volatility data available in 2005.

+++Earliest CDS data available is 2/04. This is the data for a five-year tenor.

++++Price-to-book ratio is defined as the ratio of closing price-to-book value per share.

**Panel B: Big-6 US Financial Institutions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Measure** | **Pre-crisis average** | **Post-crisis average** | **2014 average** |
| Volatility | 24.30 | 31.35 | 18.94 |
| Bank volatility/market volatility+ | 1.60 | 2.01 | 1.66 |
| Bank volatility – market volatility | 9.13 | 15.82 | 7.50 |
| Implied volatility | 22.89 | 32.34 | 20.75 |
| Implied bank volatility/market implied | 1.58 | 1.74 | 1.48 |
| Implied bank volatility – market implied | 8.56 | 13.78 | 6.63 |
| Beta | 1.18 | 1.68 | 1.42 |
| CDS spread+++ | 25.33 | 138.44 | 69.35 |
| SRISK% | 4.76 | 8.46 | 7.68 |
| Delta of One-Year 50% OTM Put Option | -0.033 | -0.078 | -0.046 |
| Price-to-book Ratio++++ | 2.13 | 0.91 | 1.05 |

+ For volatility/market comparison, we used the market return of the S&P 500. We used the standard deviation of the daily return over 260 trading days to best approximate an annual average.

++Earliest implied volatility data available in 2005.

+++Earliest CDS data available is 2/04. This is the data for a five-year tenor.

++++Price-to-book ratio is defined as the ratio of closing price-to-book value per share.

**Table II  
Top Fifty Volatility**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 53.88 | 29.25 | 18.88 |
| ALLY FINANCIAL INC. |  | 26.85 | 24.83 |
| AMERICAN EXPRESS COMPANY | 35.97 | 28.04 | 20.30 |
| U.S. BANCORP | 32.09 | 26.55 | 16.98 |
| COMMERCE BANCSHARES, INC. | 24.10 | 23.11 | 17.56 |
| BANKUNITED, INC. |  | 23.39 | 20.33 |
| BB&T CORPORATION | 31.46 | 28.81 | 18.63 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 39.02 | 29.09 | 19.56 |
| BOK FINANCIAL CORPORATION | 26.25 | 24.68 | 20.95 |
| CAPITAL ONE FINANCIAL CORPORATION | 51.84 | 34.56 | 20.31 |
| CIT GROUP INC. |  | 27.50 | 20.72 |
| CITIZENS FINANCIAL GROUP, INC. |  | 27.87 | 23.44 |
| COMERICA INCORPORATED | 36.92 | 32.56 | 24.78 |
| CULLEN/FROST BANKERS, INC. | 28.62 | 22.86 | 22.07 |
| DISCOVER FINANCIAL SERVICES | 84.23 | 32.04 | 20.43 |
| E\*TRADE FINANCIAL CORPORATION | 69.52 | 45.16 | 31.62 |
| EAST WEST BANCORP, INC. | 42.07 | 38.84 | 22.91 |
| EVERBANK FINANCIAL CORP |  | 26.29 | 18.59 |
| FIFTH THIRD BANCORP | 45.35 | 37.75 | 21.64 |
| FIRST CITIZENS BANCSHARES, INC. | 31.06 | 25.82 | 22.13 |
| FIRST HORIZON NATIONAL CORPORATION | 39.91 | 33.66 | 21.24 |
| FIRSTMERIT CORPORATION | 34.16 | 30.74 | 23.62 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 32.68 | 27.64 | 26.38 |
| HANCOCK HOLDING COMPANY | 36.27 | 31.11 | 27.16 |
| HUNTINGTON BANCSHARES INCORPORATED | 45.22 | 39.01 | 20.52 |
| IBERIABANK CORPORATION | 30.55 | 27.45 | 23.63 |
| INVESTORS BANCORP, INC. | 32.27 | 24.57 | 14.95 |
| KEYCORP | 40.17 | 36.40 | 23.70 |
| M&T BANK CORPORATION | 30.32 | 26.79 | 18.79 |
| NEW YORK COMMUNITY BANCORP, INC. | 32.99 | 25.44 | 16.70 |
| NORTHERN TRUST CORPORATION | 35.12 | 25.63 | 20.15 |
| PACWEST BANCORP | 39.69 | 35.54 | 23.12 |
| PEOPLE'S UNITED FINANCIAL, INC. | 28.34 | 20.52 | 15.71 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 35.56 | 30.11 | 18.56 |
| PROSPERITY BANCSHARES, INC. | 33.74 | 27.92 | 23.05 |
| RAYMOND JAMES FINANCIAL, INC. | 41.70 | 32.08 | 20.85 |
| REGIONS FINANCIAL CORPORATION | 41.99 | 43.28 | 23.72 |
| CHARLES SCHWAB CORPORATION, THE | 46.01 | 31.60 | 27.57 |
| STATE STREET CORPORATION | 43.99 | 32.17 | 21.90 |
| SUNTRUST BANKS, INC. | 36.71 | 38.00 | 21.10 |
| SVB FINANCIAL GROUP | 37.95 | 34.65 | 28.64 |
| SYNCHRONY FINANCIAL |  | 25.62 | 21.17 |
| SYNOVUS FINANCIAL CORP. | 38.81 | 49.59 | 20.73 |
| TCF FINANCIAL CORPORATION | 34.37 | 33.23 | 22.22 |
| UMPQUA HOLDINGS CORPORATION | 41.62 | 33.66 | 22.27 |
| VALLEY NATIONAL BANCORP | 28.13 | 27.66 | 18.22 |
| WEBSTER FINANCIAL CORPORATION | 35.68 | 37.50 | 23.38 |
| WINTRUST FINANCIAL CORPORATION | 38.74 | 31.76 | 20.47 |
| ZIONS BANCORPORATION | 38.81 | 40.34 | 23.93 |
| Mean | 38.69 | 31.12 | 21.64 |
| Median | 36.71 | 30.11 | 21.17 |

**Table III  
Top Fifty Volatility/Market Volatility**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 2.62 | 1.60 | 1.55 |
| ALLY FINANCIAL INC. |  | 1.88 | 1.92 |
| AMERICAN EXPRESS COMPANY | 1.71 | 1.46 | 1.64 |
| U.S. BANCORP | 1.45 | 1.30 | 1.49 |
| COMMERCE BANCSHARES, INC. | 1.22 | 1.28 | 1.44 |
| BANKUNITED, INC. |  | 1.46 | 1.67 |
| BB&T CORPORATION | 1.55 | 1.47 | 1.58 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 1.84 | 1.55 | 1.66 |
| BOK FINANCIAL CORPORATION | 1.32 | 1.31 | 1.77 |
| CAPITAL ONE FINANCIAL CORPORATION | 2.40 | 1.69 | 1.84 |
| CIT GROUP INC. |  | 1.61 | 1.72 |
| CITIZENS FINANCIAL GROUP, INC. |  | 2.00 | 1.75 |
| COMERICA INCORPORATED | 1.77 | 1.70 | 2.11 |
| CULLEN/FROST BANKERS, INC. | 1.41 | 1.28 | 1.89 |
| DISCOVER FINANCIAL SERVICES | 2.81 | 1.69 | 1.65 |
| E\*TRADE FINANCIAL CORPORATION | 3.36 | 2.35 | 2.41 |
| EAST WEST BANCORP, INC. | 2.15 | 1.82 | 1.84 |
| EVERBANK FINANCIAL CORP |  | 1.92 | 1.55 |
| FIFTH THIRD BANCORP | 2.03 | 1.76 | 1.80 |
| FIRST CITIZENS BANCSHARES, INC. | 1.68 | 1.41 | 1.84 |
| FIRST HORIZON NATIONAL CORPORATION | 1.95 | 1.83 | 1.73 |
| FIRSTMERIT CORPORATION | 1.75 | 1.73 | 1.88 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 1.73 | 1.59 | 1.89 |
| HANCOCK HOLDING COMPANY | 2.00 | 1.70 | 2.30 |
| HUNTINGTON BANCSHARES INCORPORATED | 1.98 | 1.86 | 1.71 |
| IBERIABANK CORPORATION | 1.75 | 1.55 | 1.90 |
| INVESTORS BANCORP, INC. | 1.49 | 1.33 | 1.25 |
| KEYCORP | 1.85 | 1.80 | 2.02 |
| M&T BANK CORPORATION | 1.53 | 1.37 | 1.67 |
| NEW YORK COMMUNITY BANCORP, INC. | 1.67 | 1.30 | 1.57 |
| NORTHERN TRUST CORPORATION | 1.72 | 1.40 | 1.70 |
| PACWEST BANCORP | 2.02 | 1.89 | 1.76 |
| PEOPLE'S UNITED FINANCIAL, INC. | 1.50 | 1.17 | 1.35 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 1.64 | 1.48 | 1.56 |
| PROSPERITY BANCSHARES, INC. | 1.75 | 1.56 | 1.99 |
| RAYMOND JAMES FINANCIAL, INC. | 2.12 | 1.70 | 1.66 |
| REGIONS FINANCIAL CORPORATION | 1.88 | 2.15 | 2.03 |
| CHARLES SCHWAB CORPORATION, THE | 2.38 | 1.86 | 2.18 |
| STATE STREET CORPORATION | 2.00 | 1.65 | 1.83 |
| SUNTRUST BANKS, INC. | 1.70 | 1.89 | 1.78 |
| SVB FINANCIAL GROUP | 1.83 | 1.87 | 2.45 |
| SYNCHRONY FINANCIAL |  | 1.86 | 1.72 |
| SYNOVUS FINANCIAL CORP. | 1.88 | 2.38 | 1.67 |
| TCF FINANCIAL CORPORATION | 1.76 | 1.80 | 1.85 |
| UMPQUA HOLDINGS CORPORATION | 2.13 | 1.78 | 1.71 |
| VALLEY NATIONAL BANCORP | 1.43 | 1.49 | 1.44 |
| WEBSTER FINANCIAL CORPORATION | 1.67 | 1.87 | 1.91 |
| WINTRUST FINANCIAL CORPORATION | 2.00 | 1.60 | 1.65 |
| ZIONS BANCORPORATION | 1.84 | 1.99 | 2.08 |
| Mean | 1.87 | 1.67 | 1.78 |
| Median | 1.77 | 1.69 | 1.75 |

**Table IV  
Top Fifty Volatility -- Market Volatility**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 28.80 | 9.81 | 6.96 |
| ALLY FINANCIAL INC. |  | 11.33 | 11.81 |
| AMERICAN EXPRESS COMPANY | 15.02 | 7.21 | 8.21 |
| U.S. BANCORP | 10.92 | 5.10 | 6.54 |
| COMMERCE BANCSHARES, INC. | 3.93 | 3.94 | 6.04 |
| BANKUNITED, INC. |  | 6.67 | 8.89 |
| BB&T CORPORATION | 11.87 | 7.70 | 7.77 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 17.15 | 8.86 | 8.89 |
| BOK FINANCIAL CORPORATION | 6.05 | 5.01 | 10.22 |
| CAPITAL ONE FINANCIAL CORPORATION | 29.63 | 11.54 | 11.25 |
| CIT GROUP INC. |  | 9.68 | 9.92 |
| CITIZENS FINANCIAL GROUP, INC. |  | 14.70 | 10.11 |
| COMERICA INCORPORATED | 16.56 | 11.40 | 14.57 |
| CULLEN/FROST BANKERS, INC. | 7.14 | 3.91 | 11.91 |
| DISCOVER FINANCIAL SERVICES | 43.74 | 11.04 | 8.45 |
| E\*TRADE FINANCIAL CORPORATION | 44.64 | 21.52 | 18.56 |
| EAST WEST BANCORP, INC. | 23.90 | 13.64 | 11.26 |
| EVERBANK FINANCIAL CORP |  | 11.98 | 7.38 |
| FIFTH THIRD BANCORP | 25.01 | 13.09 | 10.76 |
| FIRST CITIZENS BANCSHARES, INC. | 10.51 | 6.11 | 11.05 |
| FIRST HORIZON NATIONAL CORPORATION | 18.97 | 13.61 | 9.76 |
| FIRSTMERIT CORPORATION | 13.24 | 11.46 | 11.37 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 11.40 | 8.51 | 12.06 |
| HANCOCK HOLDING COMPANY | 15.74 | 11.33 | 16.65 |
| HUNTINGTON BANCSHARES INCORPORATED | 24.78 | 14.60 | 9.46 |
| IBERIABANK CORPORATION | 10.54 | 8.14 | 11.55 |
| INVESTORS BANCORP, INC. | 8.45 | 5.19 | 3.42 |
| KEYCORP | 20.78 | 13.30 | 13.75 |
| M&T BANK CORPORATION | 10.35 | 6.31 | 8.91 |
| NEW YORK COMMUNITY BANCORP, INC. | 11.64 | 4.83 | 7.95 |
| NORTHERN TRUST CORPORATION | 13.63 | 6.29 | 9.47 |
| PACWEST BANCORP | 20.21 | 14.58 | 9.94 |
| PEOPLE'S UNITED FINANCIAL, INC. | 6.66 | 2.34 | 4.83 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 15.25 | 7.85 | 7.56 |
| PROSPERITY BANCSHARES, INC. | 12.64 | 9.06 | 13.06 |
| RAYMOND JAMES FINANCIAL, INC. | 20.97 | 11.12 | 8.74 |
| REGIONS FINANCIAL CORPORATION | 22.06 | 19.60 | 13.69 |
| CHARLES SCHWAB CORPORATION, THE | 23.60 | 12.96 | 15.62 |
| STATE STREET CORPORATION | 21.54 | 10.39 | 10.99 |
| SUNTRUST BANKS, INC. | 17.45 | 15.28 | 10.34 |
| SVB FINANCIAL GROUP | 16.27 | 13.86 | 19.23 |
| SYNCHRONY FINANCIAL |  | 11.74 | 9.63 |
| SYNOVUS FINANCIAL CORP. | 21.89 | 23.85 | 8.89 |
| TCF FINANCIAL CORPORATION | 14.47 | 13.15 | 11.19 |
| UMPQUA HOLDINGS CORPORATION | 21.52 | 12.47 | 9.35 |
| VALLEY NATIONAL BANCORP | 8.46 | 7.62 | 5.90 |
| WEBSTER FINANCIAL CORPORATION | 16.10 | 14.64 | 11.90 |
| WINTRUST FINANCIAL CORPORATION | 19.20 | 9.92 | 8.57 |
| ZIONS BANCORPORATION | 20.25 | 16.63 | 14.17 |
| Mean | 17.51 | 10.71 | 10.38 |
| Median | 16.27 | 11.12 | 9.94 |

**Table V  
Implied Volatility**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 44.97 | 27.16 | 22.67 |
| ALLY FINANCIAL INC. |  | 29.13 | 29.66 |
| AMERICAN EXPRESS COMPANY | 40.29 | 25.15 | 20.26 |
| U.S. BANCORP | 35.03 | 23.42 | 18.81 |
| COMMERCE BANCSHARES, INC. | 50.80 | 52.60 | 53.93 |
| BANKUNITED, INC. |  | 28.18 | 24.08 |
| BB&T CORPORATION | 41.30 | 26.30 | 20.52 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 41.03 | 27.47 | 20.99 |
| BOK FINANCIAL CORPORATION | 60.88 | 34.70 | 28.01 |
| CAPITAL ONE FINANCIAL CORPORATION | 53.94 | 31.94 | 20.23 |
| CIT GROUP INC. | 63.38 | 28.95 | 22.00 |
| CITIZENS FINANCIAL GROUP, INC. |  | 30.79 | 26.51 |
| COMERICA INCORPORATED | 45.78 | 30.56 | 30.74 |
| CULLEN/FROST BANKERS, INC. | 30.18 | 23.30 | 27.56 |
| DISCOVER FINANCIAL SERVICES | 78.40 | 29.79 | 21.21 |
| E\*TRADE FINANCIAL CORPORATION | 85.11 | 42.83 | 33.39 |
| EAST WEST BANCORP, INC. | 50.54 | 34.14 | 30.05 |
| EVERBANK FINANCIAL CORP |  | 31.48 | 23.46 |
| FIFTH THIRD BANCORP | 60.19 | 32.24 | 22.98 |
| FIRST CITIZENS BANCSHARES, INC. |  | 31.05 | 22.80 |
| FIRST HORIZON NATIONAL CORPORATION | 54.79 | 36.87 | 27.81 |
| FIRSTMERIT CORPORATION | 38.03 | 31.28 | 27.87 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 41.07 | 30.10 | 30.49 |
| HANCOCK HOLDING COMPANY | 60.91 | 55.09 | 30.72 |
| HUNTINGTON BANCSHARES INCORPORATED | 59.49 | 35.92 | 23.50 |
| IBERIABANK CORPORATION | 48.76 | 46.94 | 30.75 |
| INVESTORS BANCORP, INC. | 49.97 | 39.10 | 40.30 |
| KEYCORP | 51.51 | 34.51 | 26.90 |
| M&T BANK CORPORATION | 38.24 | 25.27 | 21.07 |
| NEW YORK COMMUNITY BANCORP, INC. | 36.74 | 21.91 | 18.29 |
| NORTHERN TRUST CORPORATION | 36.16 | 26.17 | 21.47 |
| PACWEST BANCORP | 87.98 | 37.89 | 28.70 |
| PEOPLE'S UNITED FINANCIAL, INC. | 34.61 | 25.40 | 21.95 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 39.70 | 26.00 | 20.33 |
| PROSPERITY BANCSHARES, INC. | 59.98 | 38.44 | 33.15 |
| RAYMOND JAMES FINANCIAL, INC. | 45.34 | 28.88 | 24.21 |
| REGIONS FINANCIAL CORPORATION | 55.59 | 40.46 | 29.77 |
| CHARLES SCHWAB CORPORATION, THE | 43.93 | 32.15 | 30.29 |
| STATE STREET CORPORATION | 44.82 | 28.24 | 22.59 |
| SUNTRUST BANKS, INC. | 47.84 | 33.61 | 23.08 |
| SVB FINANCIAL GROUP | 39.06 | 35.54 | 32.16 |
| SYNCHRONY FINANCIAL |  | 26.91 | 29.83 |
| SYNOVUS FINANCIAL CORP. | 62.29 | 52.26 | 24.38 |
| TCF FINANCIAL CORPORATION | 46.15 | 34.61 | 29.67 |
| UMPQUA HOLDINGS CORPORATION | 85.50 | 37.11 | 28.67 |
| VALLEY NATIONAL BANCORP | 35.01 | 24.73 | 21.82 |
| WEBSTER FINANCIAL CORPORATION | 45.48 | 37.49 | 28.95 |
| WINTRUST FINANCIAL CORPORATION | 60.55 | 35.70 | 34.14 |
| ZIONS BANCORPORATION | 53.41 | 34.47 | 26.24 |
| Mean | 50.81 | 32.94 | 26.71 |
| Median | 47.84 | 31.48 | 26.51 |

**Table VI  
Implied Volatility/Market Implied Volatility**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 2.55 | 1.90 | 1.61 |
| ALLY FINANCIAL INC. | | 2.17 | 2.13 |
| AMERICAN EXPRESS COMPANY | 2.09 | 1.76 | 1.46 |
| U.S. BANCORP | 1.79 | 1.59 | 1.31 |
| COMMERCE BANCSHARES, INC. | 1.69 | 3.69 | 3.72 |
| BANKUNITED, INC. | | 2.12 | 1.75 |
| BB&T CORPORATION | 2.12 | 1.82 | 1.44 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 2.19 | 1.93 | 1.47 |
| BOK FINANCIAL CORPORATION | 2.09 | 2.67 | 1.98 |
| CAPITAL ONE FINANCIAL CORPORATION | 2.85 | 2.26 | 1.42 |
| CIT GROUP INC. | 4.08 | 1.97 | 1.57 |
| CITIZENS FINANCIAL GROUP, INC. | | 1.87 | 1.88 |
| COMERICA INCORPORATED | 2.36 | 2.12 | 2.18 |
| CULLEN/FROST BANKERS, INC. | 1.69 | 1.60 | 1.94 |
| DISCOVER FINANCIAL SERVICES | 3.09 | 2.08 | 1.50 |
| E\*TRADE FINANCIAL CORPORATION | 4.34 | 3.04 | 2.34 |
| EAST WEST BANCORP, INC. | 2.79 | 2.40 | 2.13 |
| EVERBANK FINANCIAL CORP | | 2.76 | 1.72 |
| FIFTH THIRD BANCORP | 2.92 | 2.22 | 1.62 |
| FIRST CITIZENS BANCSHARES, INC. | | 1.73 | 1.55 |
| FIRST HORIZON NATIONAL CORPORATION | 2.81 | 2.65 | 2.00 |
| FIRSTMERIT CORPORATION | 2.13 | 2.23 | 2.01 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 1.94 | 2.19 | 2.23 |
| HANCOCK HOLDING COMPANY | 2.13 | 4.27 | 2.24 |
| HUNTINGTON BANCSHARES INCORPORATED | 2.82 | 2.53 | 1.67 |
| IBERIABANK CORPORATION | 1.78 | 3.38 | 2.21 |
| INVESTORS BANCORP, INC. | 1.96 | 2.92 | 3.02 |
| KEYCORP | 2.50 | 2.42 | 1.91 |
| M&T BANK CORPORATION | 2.00 | 1.74 | 1.49 |
| NEW YORK COMMUNITY BANCORP, INC. | 2.13 | 1.52 | 1.29 |
| NORTHERN TRUST CORPORATION | 2.01 | 1.84 | 1.51 |
| PACWEST BANCORP | 3.25 | 2.68 | 2.03 |
| PEOPLE'S UNITED FINANCIAL, INC. | 1.78 | 1.83 | 1.54 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 2.05 | 1.79 | 1.42 |
| PROSPERITY BANCSHARES, INC. | 2.13 | 2.84 | 2.39 |
| RAYMOND JAMES FINANCIAL, INC. | 2.55 | 1.99 | 1.72 |
| REGIONS FINANCIAL CORPORATION | 2.68 | 2.78 | 2.12 |
| CHARLES SCHWAB CORPORATION, THE | 2.66 | 2.29 | 2.15 |
| STATE STREET CORPORATION | 2.36 | 1.98 | 1.60 |
| SUNTRUST BANKS, INC. | 2.37 | 2.33 | 1.62 |
| SVB FINANCIAL GROUP | 2.17 | 2.49 | 2.25 |
| SYNCHRONY FINANCIAL | | 1.95 | 2.22 |
| SYNOVUS FINANCIAL CORP. | 3.17 | 3.66 | 1.73 |
| TCF FINANCIAL CORPORATION | 2.61 | 2.41 | 2.01 |
| UMPQUA HOLDINGS CORPORATION | 3.25 | 2.69 | 2.13 |
| VALLEY NATIONAL BANCORP | 1.98 | 1.76 | 1.57 |
| WEBSTER FINANCIAL CORPORATION | 2.30 | 2.68 | 2.07 |
| WINTRUST FINANCIAL CORPORATION | 2.52 | 2.61 | 2.47 |
| ZIONS BANCORPORATION | 2.61 | 2.37 | 1.87 |
| Mean | 2.45 | 2.34 | 1.90 |
| Median | 2.36 | 2.23 | 1.88 |

**Table VII  
Implied Volatility--Market Implied Volatility**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 24.47 | 12.35 | 8.05 |
| ALLY FINANCIAL INC. | | 14.97 | 15.04 |
| AMERICAN EXPRESS COMPANY | 21.66 | 10.31 | 5.65 |
| U.S. BANCORP | 16.40 | 8.56 | 4.20 |
| COMMERCE BANCSHARES, INC. | 18.99 | 37.21 | 39.32 |
| BANKUNITED, INC. | | 13.60 | 9.46 |
| BB&T CORPORATION | 22.67 | 11.44 | 5.91 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 22.40 | 12.60 | 6.38 |
| BOK FINANCIAL CORPORATION | 30.39 | 19.68 | 13.40 |
| CAPITAL ONE FINANCIAL CORPORATION | 35.30 | 17.16 | 5.62 |
| CIT GROUP INC. | 47.78 | 13.78 | 7.39 |
| CITIZENS FINANCIAL GROUP, INC. | | 13.28 | 11.90 |
| COMERICA INCORPORATED | 27.15 | 15.45 | 16.13 |
| CULLEN/FROST BANKERS, INC. | 11.49 | 7.90 | 12.95 |
| DISCOVER FINANCIAL SERVICES | 51.99 | 15.08 | 6.60 |
| E\*TRADE FINANCIAL CORPORATION | 66.48 | 28.14 | 18.78 |
| EAST WEST BANCORP, INC. | 31.91 | 19.11 | 15.44 |
| EVERBANK FINANCIAL CORP | | 19.19 | 8.85 |
| FIFTH THIRD BANCORP | 41.55 | 17.38 | 8.37 |
| FIRST CITIZENS BANCSHARES, INC. | | 13.18 | 7.97 |
| FIRST HORIZON NATIONAL CORPORATION | 36.16 | 22.02 | 13.20 |
| FIRSTMERIT CORPORATION | 19.30 | 16.26 | 13.25 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 18.32 | 15.11 | 15.88 |
| HANCOCK HOLDING COMPANY | 31.04 | 40.60 | 16.10 |
| HUNTINGTON BANCSHARES INCORPORATED | 40.85 | 21.18 | 8.89 |
| IBERIABANK CORPORATION | 19.39 | 32.46 | 16.13 |
| INVESTORS BANCORP, INC. | 21.67 | 24.71 | 25.69 |
| KEYCORP | 32.88 | 19.68 | 12.29 |
| M&T BANK CORPORATION | 19.61 | 10.33 | 6.46 |
| NEW YORK COMMUNITY BANCORP, INC. | 18.10 | 6.93 | 3.68 |
| NORTHERN TRUST CORPORATION | 17.53 | 11.21 | 6.86 |
| PACWEST BANCORP | 58.78 | 23.02 | 14.09 |
| PEOPLE'S UNITED FINANCIAL, INC. | 13.39 | 10.49 | 7.34 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 21.07 | 11.12 | 5.72 |
| PROSPERITY BANCSHARES, INC. | 30.78 | 23.34 | 18.54 |
| RAYMOND JAMES FINANCIAL, INC. | 26.71 | 13.88 | 9.59 |
| REGIONS FINANCIAL CORPORATION | 36.96 | 25.63 | 15.15 |
| CHARLES SCHWAB CORPORATION, THE | 25.29 | 17.04 | 15.67 |
| STATE STREET CORPORATION | 26.18 | 13.27 | 7.98 |
| SUNTRUST BANKS, INC. | 29.21 | 18.86 | 8.46 |
| SVB FINANCIAL GROUP | 20.43 | 20.45 | 17.55 |
| SYNCHRONY FINANCIAL | | 12.54 | 15.22 |
| SYNOVUS FINANCIAL CORP. | 43.56 | 38.07 | 9.76 |
| TCF FINANCIAL CORPORATION | 27.52 | 19.44 | 15.05 |
| UMPQUA HOLDINGS CORPORATION | 56.51 | 22.46 | 14.06 |
| VALLEY NATIONAL BANCORP | 16.28 | 9.72 | 7.21 |
| WEBSTER FINANCIAL CORPORATION | 26.85 | 22.71 | 14.34 |
| WINTRUST FINANCIAL CORPORATION | 34.98 | 20.95 | 19.53 |
| ZIONS BANCORPORATION | 34.78 | 19.54 | 11.62 |
| Mean | 29.65 | 18.03 | 12.10 |
| Median | 26.85 | 17.04 | 11.90 |

**Table VIII  
Beta**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 1.30 | 1.32 | 0.89 |
| ALLY FINANCIAL INC. | | 0.62 | 0.93 |
| AMERICAN EXPRESS COMPANY | 1.30 | 1.30 | 1.11 |
| U.S. BANCORP | 0.98 | 1.23 | 0.96 |
| COMMERCE BANCSHARES, INC. | 0.72 | 1.01 | 0.96 |
| BANKUNITED, INC. | | 0.64 | 0.89 |
| BB&T CORPORATION | 1.04 | 1.30 | 1.00 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 1.30 | 1.42 | 1.13 |
| BOK FINANCIAL CORPORATION | 0.59 | 1.04 | 0.82 |
| CAPITAL ONE FINANCIAL CORPORATION | 1.47 | 1.51 | 1.07 |
| CIT GROUP INC. | 1.34 | 1.05 | 0.89 |
| CITIZENS FINANCIAL GROUP, INC. | | 0.94 | 0.87 |
| COMERICA INCORPORATED | 1.09 | 1.41 | 1.18 |
| CULLEN/FROST BANKERS, INC. | 0.88 | 1.02 | 0.98 |
| DISCOVER FINANCIAL SERVICES | 1.66 | 1.42 | 1.16 |
| E\*TRADE FINANCIAL CORPORATION | 1.98 | 1.80 | 1.61 |
| EAST WEST BANCORP, INC. | 0.98 | 1.55 | 1.17 |
| EVERBANK FINANCIAL CORP | | 0.60 | 0.79 |
| FIFTH THIRD BANCORP | 1.13 | 1.68 | 1.12 |
| FIRST CITIZENS BANCSHARES, INC. | 0.72 | 0.99 | 0.85 |
| FIRST HORIZON NATIONAL CORPORATION | 1.09 | 1.43 | 1.12 |
| FIRSTMERIT CORPORATION | 1.06 | 1.27 | 1.10 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 0.83 | 1.08 | 0.97 |
| HANCOCK HOLDING COMPANY | 1.07 | 1.24 | 1.16 |
| HUNTINGTON BANCSHARES INCORPORATED | 1.12 | 1.64 | 1.17 |
| IBERIABANK CORPORATION | 0.82 | 1.04 | 0.99 |
| INVESTORS BANCORP, INC. | 0.72 | 0.95 | 0.77 |
| KEYCORP | 1.10 | 1.61 | 1.28 |
| M&T BANK CORPORATION | 0.96 | 1.14 | 0.92 |
| NEW YORK COMMUNITY BANCORP, INC. | 0.83 | 0.98 | 0.81 |
| NORTHERN TRUST CORPORATION | 1.29 | 1.22 | 1.10 |
| PACWEST BANCORP | 0.84 | 1.45 | 1.08 |
| PEOPLE'S UNITED FINANCIAL, INC. | 0.77 | 0.84 | 0.78 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 1.05 | 1.35 | 1.06 |
| PROSPERITY BANCSHARES, INC. | 0.86 | 1.16 | 1.01 |
| RAYMOND JAMES FINANCIAL, INC. | 1.44 | 1.55 | 1.28 |
| REGIONS FINANCIAL CORPORATION | 1.09 | 1.82 | 1.22 |
| CHARLES SCHWAB CORPORATION, THE | 1.75 | 1.42 | 1.52 |
| STATE STREET CORPORATION | 1.33 | 1.50 | 1.29 |
| SUNTRUST BANKS, INC. | 1.05 | 1.66 | 1.19 |
| SVB FINANCIAL GROUP | 1.24 | 1.44 | 1.28 |
| SYNCHRONY FINANCIAL | | 0.64 | 0.64 |
| SYNOVUS FINANCIAL CORP. | 1.12 | 1.70 | 1.14 |
| TCF FINANCIAL CORPORATION | 1.03 | 1.31 | 1.09 |
| UMPQUA HOLDINGS CORPORATION | 1.15 | 1.46 | 1.10 |
| VALLEY NATIONAL BANCORP | 0.76 | 1.16 | 0.87 |
| WEBSTER FINANCIAL CORPORATION | 0.97 | 1.66 | 1.16 |
| WINTRUST FINANCIAL CORPORATION | 0.99 | 1.28 | 0.94 |
| ZIONS BANCORPORATION | 1.02 | 1.65 | 1.21 |
| Mean | 1.09 | 1.28 | 1.05 |
| Median | 1.06 | 1.30 | 1.08 |

**Table IX**

**CDS Spread**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | 60.96 | 70.14 | 45.22 |
| ALLY FINANCIAL INC. | | 226.91 | 197.26 |
| AMERICAN EXPRESS COMPANY | 126.64 | 134.24 | 90.08 |
| U.S. BANCORP | 41.92 | 64.31 | 45.10 |
| COMMERCE BANCSHARES, INC. | 30.45 | 56.47 | 44.56 |
| BANKUNITED, INC. | | 64.00 | 50.20 |
| BB&T CORPORATION | 49.02 | 71.05 | 48.93 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 143.90 | 186.58 | 101.89 |
| BOK FINANCIAL CORPORATION | 35.68 | 64.81 | 54.42 |
| CAPITAL ONE FINANCIAL CORPORATION | 144.82 | 178.93 | 99.10 |
| CIT GROUP INC. | | 170.44 | 100.95 |
| CITIZENS FINANCIAL GROUP, INC. | | 76.12 | 66.31 |
| COMERICA INCORPORATED | 53.63 | 77.93 | 65.11 |
| CULLEN/FROST BANKERS, INC. | 32.26 | 57.54 | 56.56 |
| DISCOVER FINANCIAL SERVICES | 270.65 | 177.62 | 97.28 |
| E\*TRADE FINANCIAL CORPORATION | 211.00 | 254.48 | 123.92 |
| EAST WEST BANCORP, INC. | 89.18 | 83.66 | 53.52 |
| EVERBANK FINANCIAL CORP | | 73.03 | 66.94 |
| FIFTH THIRD BANCORP | 82.75 | 82.20 | 58.90 |
| FIRST CITIZENS BANCSHARES, INC. | 30.77 | 70.66 | 60.79 |
| FIRST HORIZON NATIONAL CORPORATION | 76.97 | 98.94 | 63.27 |
| FIRSTMERIT CORPORATION | 44.62 | 75.20 | 59.16 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 38.41 | 81.39 | 78.46 |
| HANCOCK HOLDING COMPANY | 44.44 | 80.46 | 74.50 |
| HUNTINGTON BANCSHARES INCORPORATED | 100.00 | 90.78 | 53.80 |
| IBERIABANK CORPORATION | 33.79 | 72.22 | 58.35 |
| INVESTORS BANCORP, INC. | 47.81 | 62.62 | 36.43 |
| KEYCORP | 99.56 | 88.73 | 58.38 |
| M&T BANK CORPORATION | 44.83 | 63.74 | 45.90 |
| NEW YORK COMMUNITY BANCORP, INC. | 48.18 | 73.28 | 54.18 |
| NORTHERN TRUST CORPORATION | 123.81 | 120.66 | 70.32 |
| PACWEST BANCORP | 63.42 | 85.68 | 50.71 |
| PEOPLE'S UNITED FINANCIAL, INC. | 28.72 | 57.36 | 51.85 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 54.16 | 73.35 | 51.69 |
| PROSPERITY BANCSHARES, INC. | 39.13 | 67.76 | 58.88 |
| RAYMOND JAMES FINANCIAL, INC. | 128.74 | 158.46 | 85.62 |
| REGIONS FINANCIAL CORPORATION | 75.66 | 106.32 | 62.44 |
| CHARLES SCHWAB CORPORATION, THE | 73.31 | 113.94 | 84.56 |
| STATE STREET CORPORATION | 182.68 | 160.82 | 101.02 |
| SUNTRUST BANKS, INC. | 83.82 | 94.41 | 57.78 |
| SVB FINANCIAL GROUP | 46.58 | 83.42 | 69.16 |
| SYNCHRONY FINANCIAL | | 111.78 | 86.84 |
| SYNOVUS FINANCIAL CORP. | 140.12 | 153.52 | 50.18 |
| TCF FINANCIAL CORPORATION | 51.93 | 90.44 | 56.19 |
| UMPQUA HOLDINGS CORPORATION | 62.58 | 80.96 | 56.23 |
| VALLEY NATIONAL BANCORP | 43.54 | 72.16 | 55.18 |
| WEBSTER FINANCIAL CORPORATION | 76.03 | 87.76 | 54.87 |
| WINTRUST FINANCIAL CORPORATION | 50.27 | 81.33 | 53.47 |
| ZIONS BANCORPORATION | 96.39 | 104.29 | 62.19 |
| Mean | 79.14 | 100.67 | 67.93 |
| Median | 60.96 | 82.20 | 58.88 |

**Table X**

**Price to Book Ratio**

|  |  |  |  |
| --- | --- | --- | --- |
| Bank | Pre-crisis average | Post-crisis average | 2015 average |
| ASSOCIATED BANC-CORP | |  |  |
| ALLY FINANCIAL INC. | 4.20 | 0.80 | 0.76 |
| AMERICAN EXPRESS COMPANY | 2.57 | 3.70 | 3.67 |
| U.S. BANCORP | 2.13 | 1.84 | 1.95 |
| COMMERCE BANCSHARES, INC. | | 1.73 | 1.92 |
| BANKUNITED, INC. | 1.85 | 1.55 | 1.67 |
| BB&T CORPORATION | 2.45 | 1.17 | 1.25 |
| BANK OF NEW YORK MELLON CORPORATION, THE | 1.83 | 1.00 | 1.28 |
| BOK FINANCIAL CORPORATION | 1.64 | 1.44 | 1.41 |
| CAPITAL ONE FINANCIAL CORPORATION | | 0.86 | 0.99 |
| CIT GROUP INC. | | 0.93 | 0.87 |
| CITIZENS FINANCIAL GROUP, INC. | 1.57 | 0.63 | 0.71 |
| COMERICA INCORPORATED | 2.49 | 1.03 | 1.08 |
| CULLEN/FROST BANKERS, INC. | 1.19 | 1.62 | 1.58 |
| DISCOVER FINANCIAL SERVICES | 1.91 | 2.02 | 2.36 |
| E\*TRADE FINANCIAL CORPORATION | 2.38 | 0.85 | 1.44 |
| EAST WEST BANCORP, INC. | | 1.54 | 2.00 |
| EVERBANK FINANCIAL CORP | 2.52 | 1.39 | 1.41 |
| FIFTH THIRD BANCORP | 1.25 | 1.06 | 1.02 |
| FIRST CITIZENS BANCSHARES, INC. | 2.10 | 1.03 | 1.07 |
| FIRST HORIZON NATIONAL CORPORATION | 2.02 | 1.18 | 1.58 |
| FIRSTMERIT CORPORATION | 1.31 | 1.22 | 1.13 |
| FIRST NIAGARA FINANCIAL GROUP, INC. | 2.25 | 0.80 | 0.83 |
| HANCOCK HOLDING COMPANY | 1.61 | 1.19 | 0.92 |
| HUNTINGTON BANCSHARES INCORPORATED | 1.62 | 1.16 | 1.46 |
| IBERIABANK CORPORATION | 1.70 | 1.08 | 1.09 |
| INVESTORS BANCORP, INC. | 1.50 | 1.77 | 1.21 |
| KEYCORP | 1.87 | 0.93 | 1.13 |
| M&T BANK CORPORATION | 1.74 | 1.34 | 1.42 |
| NEW YORK COMMUNITY BANCORP, INC. | 3.12 | 1.18 | 1.32 |
| NORTHERN TRUST CORPORATION | 1.58 | 1.72 | 2.03 |
| PACWEST BANCORP | 2.29 | 1.59 | 1.32 |
| PEOPLE'S UNITED FINANCIAL, INC. | 1.86 | 0.90 | 1.01 |
| PNC FINANCIAL SERVICES GROUP, INC., THE | 1.84 | 1.04 | 1.16 |
| PROSPERITY BANCSHARES, INC. | 1.90 | 1.27 | 1.10 |
| RAYMOND JAMES FINANCIAL, INC. | 1.30 | 1.66 | 1.83 |
| REGIONS FINANCIAL CORPORATION | 4.38 | 0.70 | 0.81 |
| CHARLES SCHWAB CORPORATION, THE | 2.70 | 2.96 | 3.59 |
| STATE STREET CORPORATION | 1.52 | 1.28 | 1.60 |
| SUNTRUST BANKS, INC. | 2.30 | 0.78 | 0.98 |
| SVB FINANCIAL GROUP | | 1.78 | 2.19 |
| SYNCHRONY FINANCIAL | 1.22 | 2.17 | 2.35 |
| SYNOVUS FINANCIAL CORP. | 3.16 | 0.95 | 1.36 |
| TCF FINANCIAL CORPORATION | 1.40 | 1.35 | 1.32 |
| UMPQUA HOLDINGS CORPORATION | 3.11 | 0.89 | 0.99 |
| VALLEY NATIONAL BANCORP | 1.32 | 1.47 | 1.23 |
| WEBSTER FINANCIAL CORPORATION | 1.82 | 1.11 | 1.68 |
| WINTRUST FINANCIAL CORPORATION | 1.62 | 0.93 | 1.17 |
| ZIONS BANCORPORATION | 2.05 | 0.86 | 0.89 |
| Mean | 2.05 | 1.32 | 1.44 |
| Median | 1.86 | 1.18 | 1.30 |