

Is Community Bank Creating Value for Shareholders?

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The questions posed by the CEO of Community Bank were quite direct: “Is our bank creating value for shareholders?” Mindful of recent industry consolidation, he also asked, “Should the board consider selling the bank to another bank?” Many banks are asking the same questions now that the operating environment for banks has changed. Prior to the credit crisis, banks had to implement new regulatory procedures prompted by the passage of Sarbanes-Oxley. Since the crisis, the Dodd-Frank Act and Basel III are keeping bankers awake at night wondering if the community bank model can survive the added regulations and weak economy.

INTRODUCTION

Some believe that the community bank model will eventually become extinct, with larger regional and money center banks absorbing the market shares of these smaller banks. In an article titled, “Don’t Let Your Babies Grow Up to Be Community Bankers” written by Stephen N. Ashman and published in the trade publication *American Banker* (2012), Ashman asserts that “community bankers are a vanishing breed.” Some of the industry numbers support his assertion. For example, over the last 10 years the number of banks in the U.S. has fallen from 9,616 to 7,358. Furthermore, the top 10 U.S. banks now control 60 percent of the market, whereas 10 years ago their market share was 45 percent. The final nail in the coffin so to speak could be the higher capital levels that Basel III would require. Ashman states, “We have not yet invented a new business model for community banks, one that produces sufficient risk-adjusted returns to attract new talent.”

Not surprisingly, not all industry experts agree with Ashman’s outlook for community banking. A few weeks after Ashman’s article, Nancy Bush (2012), writing on her blog in SNL Financial, titled her rebuttal, “You Cannot Be Serious” after the well-known professional tennis player John McEnroe. She observed that Ashman “recited the usual dreary litany of community banking ills.” Yet, she did go on to discuss asset size and the belief that depositors will likely feel more comfortable dealing with larger banks, say on the order of \$10 billion. She also believes that as communities change, community banks will need to adjust their products to meet those changes. Nevertheless, she expects that Americans will continue to choose to “patronize smaller and more familiar institutions.”

Ultimately, any observer of the banking industry knows that it is going through a number of macro changes. But isn’t that true of all industries in our economy to some extent? It is likely that regulatory changes and the cost of compliance could shift the cost structure of the banking industry, affecting

economies of scale and scope and, perhaps, the optimal size and number of institutions. From a micro standpoint, it's the board of directors' responsibility, working with the CEO, to decide how much capital to allocate to the business. In turn, capital allocation decisions should be made based on the bank's belief about its ability to generate sufficient returns for its providers of capital, i.e., shareholders. The board of directors has several alternatives. It can choose to increase, decrease, or maintain the current level of reinvestment into the business. Or, a more significant decision, it can elect to sell the bank to another bank that might see synergistic advantages to combining banks.

In this case study, we analyze the recent performance of a community bank that we will call "Community Bank" in order to conceal its identity. The lead author of this case study has consulted with this bank for over a decade and is periodically asked to meet with the board to present an objective evaluation of the bank's performance relative to other banks in the industry and to highlight areas that should be addressed for improvements during the strategic planning process. For example, several years ago, the bank was struggling with a thin capital structure and a falling margin. Both issues have since been addressed and rectified by the board. For the 2012 visit to the bank, the CEO wanted answers to several fundamental questions: Is our bank creating value for shareholders and is the bank headed in the right direction? The CEO also wanted to know whether the board should consider selling the bank to another bank. Arguably, given the precarious position that many banks find themselves in since the financial crisis, these are some of the most important questions that all banks should contemplate. Banks with a high proportion of bad loans and/or thin capital bases are of particular concern to regulators.

The case study is organized in three parts. Part I looks at the bank's stock performance compared to two important benchmarks to see how returns to shareholders have compared to other investment alternatives. Part II looks at key fundamentals to provide an assessment of the bank's operating performance for the most recently completed fiscal year. Then Part III analyzes the first quarter of the current year to determine if the bank's trends are favorable. The case study makes heavy use of statistics, which provides students an example of how valuable statistics can be for assessing the performance of a bank relative to a peer group. As Ott and Longnecker (2010) say, "statistics is the science of learning from data." Indeed, this case shows just how much *can* be learned about a bank through a statistical analysis of its performance.

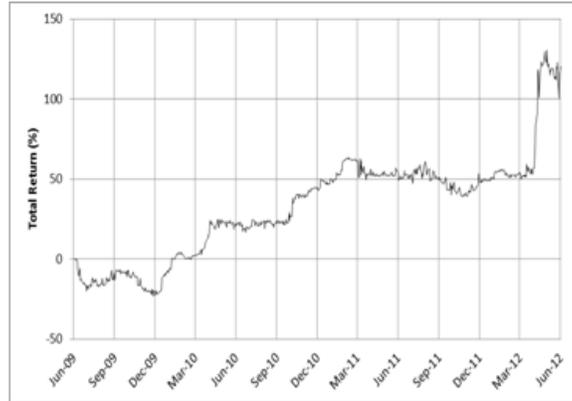
PART I: COMMUNITY BANK'S STOCK PERFORMANCE

How do you fairly evaluate a firm's stock performance? People tend to have short memories and will focus on the most recent performance. Also, investors often focus on price appreciation and forget that dividends paid are an important and, in many cases, a significant component of total return.

Typically, Community Bank schedules board retreats every three years to discuss certain strategic issues, including stock performance. Therefore, it is appropriate to examine the bank's stock performance for the prior three years. (Prior stock performance reviews over the last decade have all shown Community Bank's stock to exceed benchmark comparisons.) Figure 1 shows the total return performance for Community Bank's stock over the three years prior to the meeting with management. For the three-year period, the stock delivered a cumulative total return of 120.32 percent, but the trend was anything but steady. In particular, note the run-up in performance due to a surge in the stock price toward the end of the three-year look-back period.

In addition to selecting a suitable timeframe for comparison, a second parameter that needs to be selected is an appropriate benchmark. If a student scores a 65 percent on an exam, has he performed poorly? If the average score for the class is 85 percent, then a 65 percent is not a good score. However, if the class average is 45 percent, then a 65 percent is quite good. Stock performance, like exam grades, should be considered *relative to a benchmark*.

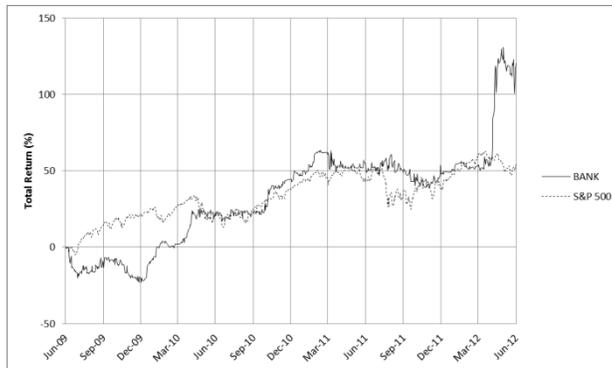
FIGURE 1
COMMUNITY BANK'S THREE-YEAR STOCK PERFORMANCE (TOTAL RETURN)



Source: SNL Financial

Community Bank, as with many firms in the U.S., is accustomed to comparing its stock to the S&P 500, as shown in Figure 2. For the three years shown, the bank's stock (solid line) is up 120.32 percent on a cumulative basis. This cumulative return far exceeds the 54.72 percent gain by the S&P 500 (dashed line). When the board first considered the prior three years, the stock's total return of 120.32 percent looked very strong. Then when they saw the comparison to the S&P 500, they saw that on a relative basis the bank was outperforming the stock market by more than double. This confirmed that the bank's stock has performed extremely well since the financial crisis. A five-year comparison looking back further showed market-beating performance as well, as the bank's stock delivered a total return of 63.30 percent compared to the S&P's return of *negative* 2.28 percent.

FIGURE 2
COMMUNITY BANK'S STOCK PERFORMANCE COMPARISON TO THE S&P 500



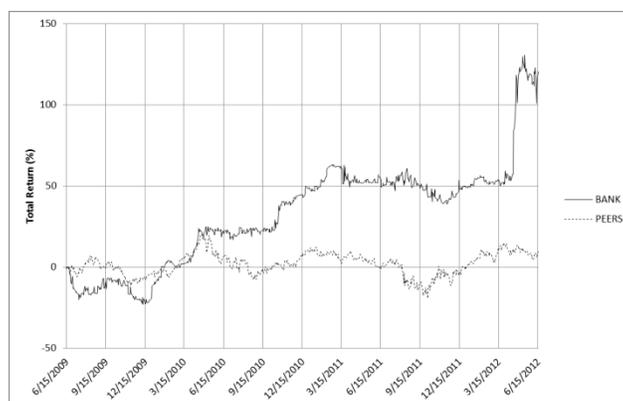
Source: SNL Financial

While the comparison to the S&P 500 is valid in that it tells investors how a stock compares to the overall market—or, at least, 500 widely-held companies that represent roughly 75 percent of the U.S. stock market—it does not tell them how the stock compares to the bank's peers. Sectors of the economy can go in and out of favor from year to year. Therefore, we explained to the board at Community Bank that there are other comparisons that we often recommend. For example, it makes sense to select a peer group of *banks* of comparable size. Bank efficiency is linked to size, so larger banks should be more

efficient and this will impact earnings and stock performance. The peer group that was selected is a group of banks with assets between \$1 billion to \$5 billion compiled by SNL Financial.¹ There are other bank benchmarks that can be used for comparison. For example, America's Community Bankers and the NASDAQ Stock Market created a broadly diversified stock index in 2003 for community banks termed the "ACB NASDAQ Index."

Figure 3 shows Community Bank's overall stock performance (solid line) relative to its peers (dashed line). This comparison finds the bank's three-year total return (120.32 percent) is roughly 12 times the return for its peers (9.66 percent). Based on the total return analysis of the bank's stock over the last three years, the conclusion is definitive: Community Bank has delivered outstanding stock performance to its shareholders. Yet, in finance we teach that financial performance should be analyzed using a risk-versus-reward framework. When you look at graphs such as Figure 2 and Figure 3, often the individual firm has a more volatile return pattern than the index. This is not a surprise. The S&P 500 reflects the aggregated returns for 500 companies; thus, there is a diversifying effect reflected in the total return profile for the index. Likewise, the peer index is comprised of 149 banks.² The peer index would capture sector risk, but firm specific risk would be diversified among the many banks. In contrast, the time series of cumulative total return for the individual bank reflects the market risk, sector risk, and firm-specific risk on a nondiversified, standalone basis.

FIGURE 3
COMMUNITY BANK'S STOCK PERFORMANCE COMPARISON TO ITS PEERS



Source: SNL Financial

Another consultant who visited Community Bank during the prior year made an interesting observation. He told the bank's board of directors that Community Bank "is a high-performing bank operating with low risk." Yet, he did not say how he was measuring the bank's risk. The Office of the Comptroller of the Currency lists nine categories of banking risk (see p. 23 of the Comptroller's Handbook, 2007), including credit, interest-rate, liquidity, and price risk. The reason that many of these risks, such as price risk, are so important for banks to monitor is that these financial institutions usually operate with low equity ratios, often less than 10 percent equity-to-assets.³ Thus, one way to assess a bank's risk is to analyze its capital ratios. When we looked at Community Bank's tangible-equity-to-tangible-assets ratio over the last three years, we found that the bank had operated with a below-median ratio throughout this period. In fact, for 2011 it was operating at the 23rd percentile, which put it in the first quartile for its capital cushion. That suggests that the bank was more leveraged than most of its peers; thus, from a financial leverage perspective, it was running a *more* risky operation, not less.

However, the risk that is most closely associated with stock performance is a firm's market risk, as measured by its beta. A firm's beta can be found through regression analysis, where the independent variable is a proxy for market return, such as the S&P 500, and the dependent variable is the stock's

return. For our presentation, we used a three-year beta that was reported by SNL Financial. We have used SNL Financial extensively while working in industry and have found its data to be reliable. Nevertheless, the discussion here is illustrative of portfolio concepts, and an analyst doing similar comparative work might elect to estimate the bank's beta using regression analysis. For this analysis, we felt comfortable using the beta reported by SNL Financial, which is just 0.16 for Community Bank.⁴ A beta this low suggests that holding stock in Community Bank contributes very little market risk to a portfolio.

In order to make a comparison to the bank's peers, the three-year betas for all peers reported in SNL were compiled and treated as a sample of the peer group's betas. The point estimate found is 0.76 with a lower limit of 0.67 and an upper limit of 0.84, based on a 95 percent confidence interval. Obviously, the beta for Community Bank is well below the lower end of the confidence interval for the peer group, meaning that we can conclude with 95 percent confidence that the bank's systematic risk is less than the average risk for the banks in its peer group. Therefore, based on the beta risk, we can conclude that Community Bank produced higher returns on a total return basis *and* on a risk-adjusted basis.

Yet, if some other measure of risk were considered, such as financial risk (i.e., the degree of leverage), then the conclusion might be different. Both the total return and financial risk for the bank are higher. But how do you use a measure of financial risk to determine a risk-adjusted return?⁵ Even more difficult to quantify, some would argue that credit risk is the most lethal risk for a bank. How would you measure and compare a bank's credit risk to a sample of its peers without having access to each institution's loan portfolio? That would be a nearly impossible feat. Yet, there are some proxies that could be used, such as comparing the bank's nonperforming assets ratio and/or charge-offs to its peers. During the years 2009–2011, Community Bank's nonperforming assets were 57 percent to 61 percent less than its peers, and the net charge-offs were 27 percent to 49 percent less. These favorable variances suggest that the bank had lower credit risk during this period.

PART II: WHAT DOES A FUNDAMENTAL ANALYSIS OF THE BANK TELL US?⁶

Higgins (p. 58–59, 2012) asks the rhetorical question: “Can ROE substitute for share price?” He presents data for companies in the specialty chemicals, packaged foods, and meats industry, as well as data for 80 “large corporations” that show a reasonable relationship between return on equity and price-to-book ratios—R-squares around 41 percent to 45 percent and t-statistics between 5.9 and 8.2. In unpublished work by Walker (2012), a similar analysis was done using community bank data and the R-square is around 29 percent with a t-statistic of 8.6. Anecdotally, we have seen bankers assuming that the market will reward them with higher stock prices when they produce high ROAs and ROEs. Of course, one often discussed shortcoming of ROA and ROE measures is that they don't reveal how much risk a firm is taking. However, if you examine a time series of ROE data, the consistency, or lack thereof, in the numbers can provide some insight into the risk inherent in a firm's operation.

If you look at a Uniform Bank Performance Report (UBPR), you find a plethora of statistics that can be analyzed when assessing a bank's performance. UBPRs are prepared by the Federal Financial Examination Council, which, according to their tagline, “promotes the uniformity and consistency in the supervision of financial institutions.” Moreover, the UBPR is:

An analytical tool created for bank supervisory, examination, and management purposes. In a concise format, it shows the impact of management decisions and economic conditions on a bank's performance and balance-sheet composition. The performance and composition data contained in the report can be used as an aid in evaluating the adequacy of earnings, liquidity, capital, asset and liability management, and growth management. Bankers and examiners alike can use this report to further their understanding of a bank's financial condition and, through such understanding, perform their duties more effectively. (<http://www.ffiec.gov/UBPR.htm>)

Financial management textbooks often show the analysis of ROE using the DuPont equation, which includes the profit margin, asset turnover, and financial leverage in multiplicative form.⁷ During the authors' time in industry, they were analyzing the financial performance of upwards of 100 community banks each quarter. They found that a quick assessment could be made of a bank's ROE by looking at six fundamental areas: (1) net interest income, (2) net overhead, (3) capital, (4) the balance between earning/nonearning assets, (5) provisioning for loan losses, and (6) the tax burden. Further drilldown into the operations is possible, but these six areas give a balanced snapshot of the bank's performance. While these statistics offer a useful static view of a bank's performance, it is also valuable to examine several growth trends that will be discussed below.

In Table 1 we show Community Bank's return on average assets (ROAA) and return on average equity (ROAE) for 2011, both on a core and noncore basis, along with the 50th percentile values for the bank's peer group. (The difference between core and noncore is the removal of nonrecurring items, such as one-time accounting adjustments.) Banks are constantly writing new loans, seeking new deposits and adding to retained earnings. Consequently, their balance sheets—and, specifically, the level of assets and equity—are normally growing quickly, even from one quarter to the next. This is why analysts use *average* assets and *average* equity when calculating return ratios. Another return measure that banks often use (not shown in Table 1) is return on *tangible* equity (ROTE). The difference between ROAE and ROTE is that a bank's average equity often includes what are termed intangible assets on the balance sheet. When one bank acquires another bank, the premium over book value is accounted for as goodwill. Historically, banks would use the pooling or purchase method when accounting for an acquisition. Starting in 2001, banks were required to begin using the purchase method for *all* acquisitions. The booking of intangible assets on the balance sheet explains why ROAE figures are less than ROTE.

TABLE 1
RETURN COMPARISONS FOR 2011

	50th Percentile	Bank Value	Percentile Ranking	Grade
Core ROAA	0.70%	0.82%	61 st	B
ROAA	0.76%	0.90%	63 rd	B
Core ROAE	6.77%	9.92%	70 th	B
ROAE	7.44%	10.78%	75 th	B+

Source: SNL Financial

The data reveal that Community Bank's ROAA is in the 63rd percentile. Recall from statistics that this means that at least 63 percent of the bank's peers have an equal or lower ROAA while at least 37 percent have an equal or higher ROAA.⁸ If the ROAA values are well dispersed, which you would expect, you can interpret this to mean that Community Bank is "beating" roughly 63 percent of the banks in its peer group. If we divide the distribution of ROAAs into quartiles, this enables us to assign letter grades, similar to how a professor might assign final grades to a class. For example, the first (lowest) quartile is assigned a D, the second a C, the third a B and the fourth an A. Plus and minus grades can be assigned based on how close the ranking is relative to the values for Q1 (25th percentile), Q2 (50th percentile, and Q3 (75th percentile). For our work, we used ± 5 percentile as the range for plus and minus grades. For example, from the 71st to the 75th percentile, a grade of B+ is assigned; thus, Community Bank earned a B+ for its ROAE. (An ROAA falling in the 76th to 80th percentile would be assigned an A–.) The CEO of Community Bank remarked that this grading system was very helpful to board members.

Notice that Community Bank's ROAA earned a B, while its ROAE earned a B+. Often a bank's relative performance for its ROAA is different than for its ROAE. This can be explained by the capital structure decision, specifically the leverage ratio. Suppose two banks achieve an ROAA of 1 percent. If

the first bank has an equity-to-assets ratio of 10 percent, its ROAE will be 10 times its ROAA or 10 percent. The equity multiplier for the first bank is $1/0.10=10\times$. If the second bank has an equity-to-assets ratio of 8 percent, its ROAE will be 12.5 times its ROAA or 12.5 percent. In the second example, the equity multiplier is $1/0.085=12.5\times$. Ultimately, a bank's ROAE is determined by its ROAA performance and the degree of leverage used. Typically, a bank will have a policy on how much leverage is permissible. With the passage of Basel III, banks are now revisiting their capital policies to ensure that they meet the new guidelines.

The next step is to drill down to inspect the fundamentals that determine the bank's ROAA and ROAE. A bank's revenues are a combination of net interest income and noninterest income. There are two statistics commonly used to compare a bank's net interest income performance to other banks: net interest *margin* and net interest *spread*. The net interest margin is defined as the difference between interest income and interest expense divided by the bank's average assets or average *earning* assets. In contrast, the net interest spread is defined as the difference between a bank's yield on earning assets (interest income divided by earning assets) and cost of funds (interest expense divided by liabilities). From Table 2, we find that Community Bank's margin and spread are close to the median (i.e., 50th percentile), leading to the next drill-down question. Is the near-median margin and spread a result of a near-median yield on earning assets (YEA) and a near-median cost of funds (COF), or is there some other combination of YEA/COF that explains the performance? The answer to this question is important if the bank wants to generate ideas for improving its net interest income performance.

TABLE 2
NET INTEREST INCOME ANALYSIS FOR 2011

	50th Percentile	Bank Value	Percentile Ranking	Grade
Margin	3.79%	3.81%	51 st	B–
Spread	3.57%	3.58%	51 st	B–
YEA	4.70%	4.98%	73 rd	B+
COF	0.96%	1.27%	21 st	D+

Source: SNL Financial

Before we continue with the discussion of Community Bank's performance, it's important that we explain what we did with the COF statistic and several other statistics presented later. A suggestion for how to present the performance statistics was given to us by a colleague who teaches statistics at Penn State. All else equal, a bank wants a *low* COF. Thus, a low percentile ranking is preferred. An analogy to one's golf handicap is useful. A lower handicap indicates a better golfer than a higher handicap. Again, this means that a *low* percentile ranking in golf indicates better performance. However, with most performance statistics, a *higher* value is better, thus we tend to think in terms of higher percentile rankings as being better than lower percentile rankings. In the field of banking, higher values are better than lower values with most statistics, such as ROAA, ROAE, and margin, but not so with other statistics, such as COF and the ubiquitous efficiency ratio that we discuss later. For the handful of performance measures, such as COF, where *lower* is better, we have reversed the percentile rankings, as suggested by our colleague. For example, in Table 2, the COF's percentile ranking was originally found to be the 79th percentile. By reporting $100^{\text{th}} - 79^{\text{th}} = 21^{\text{st}}$ as the percentile ranking, this enables us to look at all performance numbers in the same way—higher percentile rankings are better than lower. If we had not made this transformation, board members at Community Bank could have been confused during the review of their numbers.

The bank is well above the median YEA and well below the median COF meaning that, relative to its peers, its asset yields are high (good) while its funding costs are high (bad). Let's first focus on the bank's

high YEA. There is a model in psychology termed “the four stages of competence” (see Mukherjee, Basu, Faiz, and Paul, 2012, for a note on who might deserve credit for this model). The third stage is termed “conscience competence” where someone or an organization is doing something well and they know how they are doing it. Sometimes banks are performing well in an area and they can’t explain why. In order to maintain high performance, it seems obvious that it helps to know how this is being achieved and then to build on that success. Community Bank’s higher-than-median YEA could be a result of setting higher-than-average rates on their loans or by a higher-than-average allocation to higher-risk lending, such as commercial loans. We did not investigate this issue further for this consulting assignment, but this points an analyst to the next level of drill-down analysis that could be done in order to better understand what is driving the bank’s performance.

While Community Bank wants to maintain its high performance in the YEA area, it also would like to improve its COF performance. This can often be very challenging because management is working within the economic reality of supply and demand of loanable funds. If a bank’s cost of funds is high, this points to an expensive mix of liabilities and/or rates that might be too generous relative to the local deposit market. Yet, banks are under constant pressure to grow their deposit base in order to obtain funding for loans, so higher-than-average deposit rates—if that is the case—can be explained, if not justified, by the need for funding. The deposit offerings of a community bank are fairly plain vanilla, meaning that virtually all banks offer demand deposit accounts (DDAs), negotiable order of withdrawal accounts (NOWs), savings accounts, money market deposit accounts (MMDAs), and certificates of deposit (CDs) with various maturities and features, such as “step-up” CDs. The DDAs are the preferred funding source as a bank pays zero interest for these funds. The first thought that a banker might have if its COF is high is to lower the rates. However, someone who has a rudimentary understanding of economics and the forces of supply and demand knows that if they offer lower rates, depositors will likely supply fewer deposits to the bank, which could choke off the funding needed for loan growth. Of course, the resultant reduction in supply depends on the elasticity between rates and supply. If the supply falls appreciably, then a bank can find itself underfunded for the asset growth it needs.

Another reason a bank might have a high COF is that it depends more heavily on borrowings relative to other banks. Borrowing from the Federal Loan Home Bank system and other sources tends to come with higher rates than those paid on deposits. At Community Bank, their level and structure of borrowings is reasonable. Unfortunately, they have found that they need to pay higher-than-average rates to attract the volume of deposit funding needed to keep pace with their asset growth. At least for now, the higher loan yields that they are achieving are offsetting the higher deposit rates they are paying.

When evaluating a bank’s cost structure, analysts usually examine the net overhead and efficiency ratios. Net overhead is the difference between a bank’s noninterest expense and noninterest income. The difference between expenses and income is always positive for a community bank, meaning that noninterest expense exceeds noninterest income. Lower net overhead numbers are better than higher. In contrast, the efficiency ratio is the bank’s noninterest expense as a percentage of revenue (net interest income plus noninterest income). As with the net overhead ratio, the *lower* the efficiency ratio is the better. We see from Table 3 that Community Bank’s net overhead ratio positions it in the 61st percentile, which corresponds to a B grade for its net overhead. This better-than-peer performance for net overhead is a nice complement to the bank’s near-median margin and helps explain the bank’s better-than-median ROAA and ROAE. The reason the bank is doing well with its net overhead is that it is excellent at generating noninterest income, such as fee income and income from bank-owned life insurance. Less impressive, the bank’s noninterest expenses place it in the high end of the second quartile. (If the bank were one percentile notch higher, it would have earned a C+.) The category of noninterest expense includes compensation and benefits, marketing and promotional expenses, professional fees, technology and communication expenses, amortization of intangibles, and goodwill impairment. Banks also lump a lot of noninterest expenses into the “other expense” category. Nearly 50 percent of Community Bank’s noninterest expenses are in the first category, compensation and benefits.

For years, banks have worked hard at growing noninterest income. There are newsletters and conference sessions targeting community banks to help them in this area. Board members can lose track

of the fact that in order to generate noninterest income the bank usually must incur incremental costs. For example, if a bank launches a successful financial planning business or travel agency, there are costs associated with these new businesses that impact noninterest expenses. As a bank adds to its portfolio of noninterest income businesses, the question is, do the incremental revenues more than offset the incremental costs? While working in industry, we once visited a bank that touted its success at generating noninterest income. While the bank's noninterest income ratio *was* much higher than its peers, *so was its noninterest expense ratio!* Indeed, the *unfavorable* variance on the bank's higher expense ratio was more than the *favorable* variance on the noninterest income ratio, and the bank was not aware that, relative to other banks, its net overhead ratio was poor. Ultimately, if a bank can't improve its net overhead number when it adds noninterest income-generating businesses, the value of these businesses needs to be questioned. The only way to justify a noninterest income-generating business that does not cover incremental noninterest expense is if it leads to sufficient cross-selling opportunities that produce enough profit to cover the cost.

TABLE 3
NET OVERHEAD AND EFFICIENCY ANALYSIS FOR 2011

	50th Percentile	Bank Value	Percentile Ranking	Grade
Net Overhead	2.12%	1.95%	61 st	B
Noninterest Income	0.94%	1.28%	76 th	A-
Noninterest Expense	3.10%	3.23%	45 th	C
Efficiency Ratio	65.04%	66.05%	44 th	C

Source: SNL Financial

While Community Bank is graded a solid B for its net overhead ratio, unfortunately its efficiency ratio is only in the 44th percentile for a grade of C. This difference shows that the net overhead and efficiency ratio do not always follow hand-in-hand and can convey different information about a bank's cost structure. The formula for net overhead does not include net interest income; in contrast, the calculation of the efficiency ratio *does* include net interest income. The reason that Community Bank's efficiency ratio does not rank as highly as its net overhead ratio is that the bank's net interest income is very close to the 50th percentile. Most community banks' revenue streams are heavily tilted toward the net interest income component of revenue. Community Bank is no exception. Its split between net interest income and noninterest income for 2011 is 72/28 on an unadjusted basis and 74/26 on a fully taxable-equivalent (FTE) basis.⁹ Thus, the bank's overall revenue stream is more than 2.5 times more dependent on net interest income than noninterest income. For comparison, the net interest income/noninterest income split for Community Banks' peers is 78/22 on both an unadjusted and a fully taxable-equivalent (FTE) basis. Thus, the peers are more dependent on net interest income than Community Bank.

When it comes to assessing a bank's capital position, there are ratios based on generally accepted accounting principles (GAAP) and ratios based on regulatory definitions to consider. While there are several different capital ratio definitions, the general objective of all the ratios is to measure how much equity a bank has relative to its assets as a cushion against losses. In Table 4, the equity-to-assets-ratio and the Tier 1 risk-based equity ratio for Community Bank are shown. The first ratio is the bank's book value of equity as a percentage of its book value of assets, including what are termed intangible assets, such as goodwill. The values used for equity and assets are consistent with GAAP. In contrast, the Tier 1 ratio was first defined in the Basel I capital accord, and the equity category includes common stock, retained earnings, and other items, such as nonredeemable and noncumulative preferred stock. As for the assets used for the Tier 1 ratio, these are termed "risk-based" because some assets are weighted differently than others based on the inherent risk. For example, a commercial loan is weighted 100 percent, while cash is weighted zero percent. Capital can be viewed in two ways. From a regulatory

standpoint, more capital is better than less because it makes the bank less likely to become insolvent. If a bank becomes insolvent, FDIC insurance covers depositors against losses, provided the balances don't exceed regulatory limits—currently \$250,000 per account. Obviously, regulators don't want banks to fail because that puts a greater burden on the insurance fund and, ultimately, taxpayers if the fund becomes fully depleted. The bank's Tier 1 ratio is in the 39th percentile for a grade of C. From the regulator's perspective, Community Bank is more thinly capitalized than most banks.

TABLE 4
CAPITAL ANALYSIS FOR 2011

	50th Percentile	Bank Value	Percentile Ranking	Grade
Equity/Assets (R)	9.68%	7.85%	20 th	D
Equity/Assets (S)	9.68%	7.85%	80 th	A–
Tier 1 Equity (R)	13.94%	12.94%	39 th	C

Source: SNL Financial

Note that the equity-to-assets ratio in Table 4 is shown twice—once labeled with an “R” for regulators and once labeled with an “S” for shareholders. The purpose of these two labels is to make the point that regulators and shareholders often have different perspectives on capital. For regulators, the more capital a bank has relative to assets the better. In contrast, from the shareholders' perspective, they want a high return on equity. For a given ROAA level, the more leveraged the bank is, the higher the ROAE. Obviously, shareholders do not want a bank to operate on the edge of insolvency; however, if a bank holds “excess” capital, this puts downward pressure on the ROAE. From a regulator's perspective (R), the bank's equity-to-assets ratio is below the median value for the peers meaning that it has a smaller equity cushion and is graded a D. Yet, the bank's Tier 1 ratio exceeds six percent, the level needed to be characterized as “well capitalized” by regulators. The second line in the table shows the same value for the 50th percentile (i.e., the median) and the bank's value, but now the bank is ranked in the 80th percentile with a grade of A–. From the shareholders' perspective (S), the bank has a solid equity cushion, but is “more efficient” with its capital than most of its peers. Capital should be viewed like any resource—it has a cost to it and it should be used prudently. Since the passage of Basel III, bankers are concerned that they will need to boost their capital ratios to levels that will make it difficult to produce the ROAEs needed to generate stock returns comparable to other sectors of the economy.

To complete our analysis of the key fundamentals, Table 5 shows the bank's provisioning, tax burden, and level of earning assets for 2011. All three performance areas are graded a B. The bank's provisioning—funds put into reserves to cover bad loans—and tax burden are better than the median values, indicating strong performance in those areas. Likewise, the balance between earning and nonearning assets at Community Bank is healthy.

TABLE 5
ANALYSIS OF OTHER PERFORMANCE MEASURES FOR 2011

	50th Percentile	Bank Value	Percentile Ranking	Grade
Provisioning	0.48%	0.37%	61 st	B
Tax Burden	27.40%	24.65%	60 th	B
Earning Assets	92.51%	93.36%	65 th	B

Source: SNL Financial

Most community banks are termed “brick and mortar banks” unless they are operated as an Internet bank. But even banks that collect deposits and make loans through the Internet need some office space. Thus, all banks will have *some* assets that fall into the category of “nonearning,” but the objective is to minimize the amount of assets that are not generating income.

Building shareholder value depends heavily on the growth rates of the firm’s earnings and dividends, often given on a per share basis (e.g., EPS and DPS). Dividend discount models, such as the constant growth model introduced by Gordon (1959), and variations on that model, estimate the value of a firm’s shares based on the last dividend paid, the expected growth rate in the dividend, and an appropriate risk factor for discounting the future dividend stream. In other valuation models, such as the residual income model (Walker, 1997), a key variable is earnings per share. Regardless of model, the valuation is tied to the dividends that shareholders expect to receive in the future, which in turn are dependent on the earnings stream. In Table 6 we show Community Bank’s five-year compound annualized growth rates (CAGR) for both EPS and DPS. Note that the median growth rates for the peers’ EPS and DPS are *negative*, reflecting the difficulties banks have had at generating earnings since the financial crisis, primarily because of the write-down of bad loans. Community Bank has done an admirable job of growing EPS and DPS since the crisis, earning an A– and A, respectively, relative to its peers.

TABLE 6
FIVE-YEAR GROWTH RATES FOR KEY CATEGORIES

	50th Percentile	Bank Value	Percentile Ranking	Grade
EPS	–3.14%	4.80%	76 th	A–
DPS	–13.23%	4.56%	82 nd	A
Assets	6.28%	4.82%	41 st	C
Loans	4.44%	2.90%	42 nd	C
Deposits	6.56%	2.01%	19 th	D

Source: SNL Financial

Highly-regarded finance professor Robert Higgins says on his webpage, “Unless a company is about to go out of business, its value is in the income stream it generates, and its assets are simply a necessary means to this end. The best possible company would be one that produced income without any assets. Short of this fantasy, financial performance improves as asset turnover rises.” The assets and liabilities on a community bank’s balance sheet are extremely revealing of the health and profitability of the institution. Correspondingly, the growth rates of the major categories are vital to building value.

In Table 6, the CAGR of assets, loans and deposits are shown. Up to this point, the fundamental analysis of Community Bank has shown the bank to be a solid performer. However, it has a growth problem, specifically on the funding side of the balance sheet. Community banks depend on low-cost deposit funding to finance their writing of loans, and Community Bank earns a grade of D in this category as it is ranked in only the 19th percentile for deposit growth over the last five years. We saw earlier that the bank’s cost of funds is higher than the peers’, earning it a D+; now we see that the high COF is coupled with low growth. One would think that a bank with a higher-than-median COF would have deposit rates that exceed the rates offered by its peers, resulting in *higher* growth rates for its various deposit accounts. Yet, that is not the case for Community Bank. In a nutshell, Community Bank’s number one strategic goal is to grow its deposit accounts faster without allowing the variance between its COF and the peer median COF to increase. This is easier said than done.

PART III: ARE COMMUNITY BANK'S TRENDS FAVORABLE?

The authors' years in industry taught them a valuable lesson about bank analysis. A bank's performance can improve or weaken very quickly; if one quarterly analysis cycle is skipped, a bank's numbers could look surprisingly better or worse just six months later when analysis is resumed. Therefore, bank management and the board should be monitoring performance statistics each and every quarter to quickly detect any changes in performance and to try to identify the causes, especially if a particular statistic is weakening. In this section, we report results for the first quarter of 2012 for Community Bank. (At the time that our meeting with Community Bank was held, it had not yet reported second quarter results.) As Table 7 indicates, Community Bank's first quarter results are quite different than the numbers achieved for 2011. One obvious factor is that the bank completed an acquisition during the first half of 2012. Consequently, heavy due diligence expenses affected the bank's cost structure in 2011; then, expenses incurred during the first quarter of 2012 are much less because due diligence work was nearly complete. This shift in performance points to the value of separating core and nonrecurring revenues and expenses in order to assess a bank's underlying fundamentals.

TABLE 7
RETURN COMPARISONS FOR 1Q12

	50th Percentile	Bank Value	Percentile Ranking	Change in Rank
Core ROAA	0.79%	1.28%	88 th	+27
ROAA	0.81%	1.23%	85 th	+22
Core ROAE	7.90%	15.31%	96 th	+26
ROAE	7.99%	14.73%	95 th	+20

Source: SNL Financial

For a quarterly review, the approach taken is to compare the bank's most recent quarterly performance compared to the prior quarter and/or the last 12 months. In this case, we look at the first quarter 2012 (1Q12) performance compared to the 2011 results. In Table 7 we see that the bank's 1Q12 ROAA is 1.23 percent, which is 42 basis points (bps) higher than the 50th percentile for its peer group. What's interesting to observe over time, particularly for yield and rate statistics, is the volatility in the performance of the banking sector. To be thorough, an analyst not only needs to track a bank's *absolute* performance, but he also needs to see how a bank's performance changes *relative to the peer group*. For example, Community Bank's ROAA corresponds to the 85th percentile, which is 22 percentile units better than its 2011 performance (see Table 1). Likewise, the bank's 1Q12 ROAE is sufficiently strong to catapult it to the 95th percentile for a 20-step improvement. A board member seeing this significant improvement should be asking, "How did the bank improve so much so quickly, and can we sustain this?"

Systematically, the bank's performance statistics for the 1Q12 can be examined, and the executives and board can decide how far down to drill in order to understand why a statistic improved or weakened. The data in Table 8 show Community Bank's net interest income performance for the 1Q12. Relative to 2011 (see Table 2), the bank's YEA and COF decreased. For example, the COF fell by a substantial 21 basis points, which was not surprising given the low-interest-rate environment. Yet, the bank's percentile ranking did not change, which is important to recognize. The bank's COF improved on an absolute basis, *but not on a relative basis*. The reason the bank's ranking didn't change is that the peer group's COF also fell by 21 basis points. The identical reduction in the COF for the bank and peers is a reminder that all banks face the same interest rate environment. Thus, notable changes to a bank's funding costs relative to a peer group are often a result of differences in the funding mix. As for YEA, the bank's yield slipped 7

basis points, yet the peers' yield fell 14 basis points. Thus, Community Bank's ranking improved by eight places.

Another important observation from Table 8 is that the bank's margin and spread rankings changed in *opposite* directions. This seeming paradox is best explained by recalling the earlier definitions of margin and spread given in the last section. A bank's margin is based on assets or earning assets, while the spread is dependent on the bank's level of liabilities. If liabilities are rising or falling disproportionately to asset (or earning asset) growth, meaning the bank's capital structure is shifting, this can lead to some diverging trends between a bank's margin and spread, even though these statistics are designed to measure the same thing, i.e., the health of the bank's net interest income. Therefore, diverging changes in a bank's spread and margin might indirectly convey useful information regarding funding and capital structure. However, the same information can be more directly observed from the balance sheet.

TABLE 8
NET INTEREST INCOME ANALYSIS FOR 1Q12

	50th Percentile	Bank Value	Percentile Ranking	Change in Rank
Margin	3.76%	3.74%	49 th	-2
Spread	3.60%	3.73%	58 th	+7
YEA	4.56%	4.91%	81 st	+8
COF	0.75%	1.06%	21 st	+0

Source: SNL Financial

The most dramatic improvements seen for Community Bank are in its cost structure. Above we mentioned that the bank had incurred due diligence costs during 2011 that were mostly behind them at the start of 2012. The impact to the bank's financials is substantial. As shown in Table 9, the bank's noninterest expense performance rose 13 places to the 58th percentile. We don't award grades for the first quarter, but if a grade were given, the bank would have been raised from a C to a solid B for its noninterest expenses. In turn, this better expense control helped the bank push its net overhead ratio down to an excellent 1.56 percent, raising the bank up to the 79th percentile. The largest change is seen in Community Bank's efficiency ratio, as it rose 27 percentile places to the 71st percentile. Unless the bank can gain an edge in its net interest income business, it will need to rely on peer-beating revenues from its noninterest income sources, along with a lean cost structure.

TABLE 9
NET OVERHEAD AND EFFICIENCY ANALYSIS FOR 1Q12

	50th Percentile	Bank Value	Percentile Ranking	Change in Rank
Net Overhead	2.03%	1.56%	79 th	+18
Noninterest Income	0.96%	1.37%	79 th	+3
Noninterest Expense	3.06%	2.93%	58 th	+13
Efficiency Ratio	65.13%	59.38%	71 st	+27

Source: SNL Financial

At the time of our consulting visit to Community Bank, the implementation stage of Basel III in the U.S. had not started. Indeed, well after our visit to the bank, FDIC Director Thomas Hoenig, on September 14, 2012, said during the *American Banker's* Symposium, that it is "illogical" to apply

international capital standards to community banks. Thus, at the time of our visit, we did not expect to see any dramatic changes to the bank's capital structure...and we didn't. Several years earlier, the bank had raised preferred capital through the government's Troubled Asset Relief Program (TARP), and then later repaid this in full. Part of the paydown was funded by preferred stock issued through the government's Small Business Lending Fund.¹⁰ Since then, the bank has been operating at a reasonably strong capital level, but has not yet taken any direct steps to raise capital to meet anticipated new guidelines outlined by Basel III other than regular earnings retention. The data in Table 10 show that the changes to the bank's equity-to-assets ratio and Tier 1 equity ratio at the beginning of 2012 are minor. Unless the bank is feeling regulatory pressure to raise the level of its capital, the steadiness reflected in the capital ratios is what you'd expect and hope to see. Once a bank is within its target capital boundaries, stability in capital ratios is evidence of a bank that is managing its capital well in terms of retaining enough to fund growth, provisioning enough to cover bad loans, and paying dividends.

TABLE 10
CAPITAL ANALYSIS FOR 1Q12

	50th Percentile	Bank Value	Percentile Ranking	Change in Rank
Equity/Assets (R)	9.64%	8.16%	24 th	+4
Equity/Assets (S)	9.64%	8.16%	76 th	-4
Tier 1 Equity (R)	14.07%	13.28%	41 st	+2

Source: SNL Financial

Table 11 includes the remaining fundamentals that we reviewed with Community Bank's board of directors during our summer 2012 visit. The bank improved in provisioning relative to its peers, but lost some ground on its tax burden. However, provisioning and taxes can vary from quarter to quarter for minor reasons; thus, unless there is a sizable worsening in either of these two categories, the board should not be too concerned. As for the management of earning assets, the earning-assets-to-total-assets ratio tends to be fairly stable for most banks.

TABLE 11
ANALYSIS OF OTHER PERFORMANCE MEASURES FOR 1Q12

	50th Percentile	Bank Value	Percentile Ranking	Change in Rank
Provisioning	0.32%	0.15%	69 th	+8
Tax Burden	29.72%	30.33%	48 th	-12
Earning Assets	92.49%	93.82%	71 st	+6

Source: SNL Financial

It is rare to see a large shift in the balance between earning and nonearning assets over a short period of time. If a bank has a lower-than-median level of earning assets, one can suspect that the bank's brick-and-mortar facilities, i.e., its premises, are plusher or more expensive than its peers and/or the bank has a high level of cash and due on hand. In the many years that we analyzed community banks, seldom did we see a bank with a persistent problem of low earning assets (relative to total assets). Initially, a de novo bank can be expected to have a low portion of earning assets, but as it grows its loan portfolio, the balance improves.

Of course, the drill-down process of looking at a bank's fundamentals can continue into greater detail. The fundamentals presented in this case are what we believe are the most important to discuss with a board of directors of a community bank. You can always debate how many details to present to a board. When we consult with bank boards, we tend to present more of a "big picture" perspective. In contrast, when we meet with executives or managers of a bank, we tend to examine and discuss the numbers using a more "granular" approach. Nevertheless, some board members desire more in-depth analysis than others. Earlier we discussed the DuPont equation for examining the major components of ROE. This sort of factor analysis can be extended. For example, Community Bank has a funding problem: its COF is high and its growth of deposits is low. To probe the problem more thoroughly, rates on individual deposit categories (i.e., NOW, savings, MMDA and CD accounts) should be compared to local banks in and around the bank's footprint, and the funding split should be presented. As for the borrowings, the rates, structure, and maturity dates should be summarized and presented to the board, or at least to the ALCO committee for its critical review. Generating a sufficient supply of low-cost deposit funding should be Community Bank's top priority.

SUMMARY

What was accomplished by our visit to Community Bank during the summer of 2012? To answer that question, let's return to the initial questions posed by the CEO: "Is the bank creating value for shareholders; is the bank headed in the right direction; and should we consider selling the bank?" Many banks saw their performance significantly impacted by the financial crisis and then what has become known as "the Great Recession" that followed. For community banks in general, loan demand has been slow to recover, and interest rates have been historically low. Plus, there has been this growing belief that banks will need to raise their capital levels in order to meet new regulatory requirements. Despite all the challenges and uncertainty facing Community Bank, the stock analysis presented in Section I shows without question that the bank's stock has performed very well over the last three years. The bank's total return has been well above peer returns and broader measures of the overall market. Although not presented in Section I, there were additional benchmarks used for comparison during the board presentation, such as an index for a regional peer group and a world equity index, and in all cases, Community Bank's stock has performed better than the benchmarks. Thus, shareholders should be satisfied with the dividends and share appreciation over the last three years.

In terms of going forward, will this stellar performance continue? Obviously nobody knows. There is great uncertainty in how the U.S. and international economies will fare in the years ahead. Likewise, nobody knows how the banking sector will perform relative to other sectors in the economy. Some think that community banks will continue to have a strong niche. Others believe these small financial institutions will go the way of the dinosaurs. What our fundamental analysis shows in Section II is that Community Bank has been performing quite well relative to other banks. Not only was its last full fiscal year of operation (2011) impressive, but the results for the first quarter of 2012 showed that the bank was maintaining or improving in virtually all areas. Thus, if there is a survival of the fittest and an evolution that results in further consolidation in the industry, there is no obvious reason why Community Bank cannot be one of the banks to survive and, if the industry does well, thrive.

As for whether a bank should sell, that is a complex question. While details of that discussion are not presented in this case, an "investment banker's perspective" was given to Community Bank's board of directors during our visit. It all comes down to price. Consider the extremes to understand the point. If a bank generating positive cash flow were offered \$0 per share for all understanding shares, it would be ludicrous to sell the bank. Conversely, if the bank were offered an infinite price per share, then it obviously should sell. These two extreme scenarios help make a point; there's a price where the board should sell the bank and a price where it should not. Thus, the \$64,000 question is: where is the crossover point—the price where the board should be indifferent to a sale? An analysis that arrives at this indifference price could be a separate case study; the objective would be to find a price of indifference where shareholders would expect to earn an equal rate of return far into the future. Then, if a bidder offers

a price that exceeds the indifference price, a responsible board should accept that price. Realistically, community banks tend to weigh heavily the concerns of other stakeholders, such as the employees, the community, and customers. In fact, some community banks proudly market that they will *never* sell to another bank in order to give customers the reassurance that their banking relationship will go on uninterrupted indefinitely. In the case of Community Bank, its board is committed to keeping the bank independent.

Estimating a fair takeout price was beyond the scope of our consulting assignment. However, while we did not advocate selling the bank, we encouraged the board to remain open-minded and to allow investment bankers to show them offers—both offers to buy and sell. Arguably, a board is doing its shareholders a disservice by closing the door to any possible offer that another bank might make. Announcing to the capital markets that your bank is not for sale could eliminate any takeover speculation and hurt the bank's stock, at least in the short term. In addition to the possible adverse impact to the stock price, putting up a “not for sale sign” weakens the incentive for executives to work hard to grow shareholder value and to make a takeover less likely, as a bank's management knows that a takeover would likely mean the end of their jobs. Nevertheless, we were able to objectively demonstrate to the board that the bank's fundamentals were some of the best in the industry, suggesting that Community Bank is viable as an independent bank going forward. The primary way for a bank merger to be successful is when the acquiring bank is able to markedly improve the target bank's efficiency. While Community Bank's efficiency ratio was around the median for 2011, its current and past efficiency ratios have been solid enough to conclude that material improvements to the bank's efficiency in the future through a merger are unlikely.

ENDNOTES

1. SNL Financial collects, standardizes and disseminates corporate, financial, market and M&A data—plus news and analysis—for the following industries: banking, financial services, insurance, real estate, energy and media/communications.
2. The SNL U.S. Bank \$1B–\$5B Index includes all major exchange (NYSE, NYSE Amex, and NASDAQ) banks in SNL's coverage universe with \$1B to \$5B in assets.
3. One exception to this in the community bank space is Beal Bank USA. Its 2011 end-of-year equity-to-assets ratio is 34.20 percent, one of the highest in the industry.
4. A one-year beta coefficient for Community Bank is 0.53 as reported by SNL Financial.
5. Some would argue that a bank's beta is a “leveraged beta” and does incorporate financial risk. SNL Financial does not report unleveraged betas and we did not calculate it for Community Bank.
6. The framework used in this section follows that used by Walker and Check (2009).
7. Some refer to the DuPont equation as the DuPont “system” (see Brealey, Myers, and Allen, 2008).
8. Not all statistics books use this definition for percentiles. This definition is consistent with Anderson, Sweeney, and Williams (2012). In contrast, Ott and Longnecker (p. 87, 2010) say, “The *p*th percentile of a set of *n* measurements arranged in order of magnitude is that value that has at most *p*% of the measurements below it and at most $(100 - p)$ % above it.
9. When comparing net interest income to noninterest income, SNL Financial provides numbers for unadjusted net interest income and FTE net interest income. The FTE net interest income includes interest income, on a (fully) tax-equivalent basis, less interest expense. SNL reports that, “Tax-equivalent interest income is interest income plus the taxes that would have been paid had tax-exempt securities been taxable. This number attempts to enhance the comparability of the performance of assets that have different tax liabilities.”
10. The acceptance of TARP funds among community banks was common. In the case of Community Bank, the CEO publicly stated at the time his bank accepted TARP funds that, “The program is a voluntary initiative designed primarily for healthy financial institutions to build capital and increase the flow of credit to support the economy.” Note that the majority of community banks weathered the financial crisis well, some taking TARP funds while others did not.

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