SINGULAR DILIGENCE

BOK Financial

(NASDAQ: BOKF)

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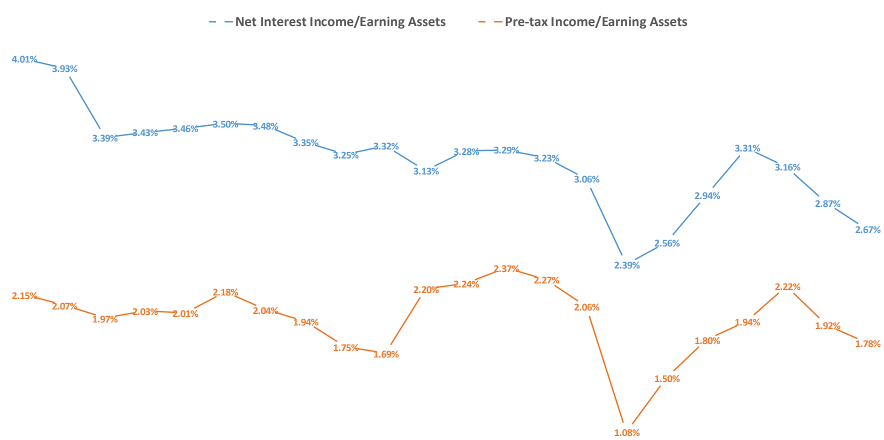
Stock Price: $68.38



	Price/ Earning Assets	Price/ Deposit	Price/ EBT	Price/Owner Earnings
Frost	0.17	0.19	9.71	6.17
Commerce Bancshares	0.20	0.23	11.18	6.51
Prosperity Bancshares	0.20	0.22	8.57	8.03
U.S. Bancorp	0.22	0.28	11.12	8.33
First Financial	0.37	0.44	15.25	11.94
Minimum	0.17	0.19	8.57	6.17
Maximum	0.37	0.44	15.25	11.94
Median	0.20	0.23	11.12	8.03
Mean	0.23	0.27	11.17	8.20
STDEV	0.08	0.10	2.52	2.29
CV	34%	37%	23%	28%
BOK Financial	0.17	0.23	10.72	6.43

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Minimum	Maximum	Median	Mean	Standard Deviation	Variation
Interest Income	184	229	282	299	354	396	509	647	663	581	570	619	775	993	1,170	1,070	923	860	821	801	756	743	184	1,170	655	648	277	43%
Interest Expense	75	104	160	163	189	204	264	369	326	206	174	191	321	500	616	415	204	142	120	87	71	67	67	616	190	226	145	64%
Provision for Loan Losses	3	0	0	4	9	14	10	17	38	34	36	20	12	18	35	203	196	105	-6	-22	-28	0						
Net Interest Income	107	125	122	132	156	177	234	260	299	342	361	408	442	475	519	452	523	613	707	736	713	676	107	736	384	390	212	54%
Non-interest income	77	74	91	105	130	162	183	196	230	258	306	312	345	372	406	414	481	516	529	632	604	621	74	632	309	320	185	58%
Non-interest Expense	126	133	142	159	195	229	281	306	369	426	413	441	469	512	575	662	697	753	820	850	841	848	126	850	433	466	256	55%
Net Non-interest Expense	49	59	51	54	65	67	97	109	139	167	107	129	124	141	169	248	216	237	291	217	237	226	49	291	134	146	75	52%
Pre-tax Income	57	66	71	78	91	110	137	151	161	174	254	279	318	335	350	204	306	376	416	518	476	450	57	518	229	244	146	60%
Short-term Investments	55	47	20	34	58	52	81	62	37	30	43	36	54	57	107	144	134	92	95	151	652	1,248	20	1,248	58	150	277	186%
Securities	1,086	1,450	1,609	1,590	1,905	2,093	2,671	2,857	3,267	3,965	4,508	4,863	4,997	5,061	5,508	6,452	8,390	10,18	10,713	11,688	12,00	10,865	1,086	12,001	4,686	5,351	3,666	69%
Loans	1,519	1,681	1,974	2,210	2,549	2,920	3,975	4,854	5,897	6,292	6,991	7,528	8,380	9,600	11,320	12,319	11,854	10,60	10,557	11,457	12,13	13,217	1,519	13,217	7,259	7,265	4,065	56%
Total Earning Assets	2,660	3,177	3,603	3,835	4,511	5,064	6,727	7,773	9,201	10,28	11,54	12,427	13,431	14,719	16,935	18,915	20,377	20,88	21,365	23,296	24,79	25,329	2,660	25,329	11,985	12,766	7,677	60%
Non-interest bearing Deposits	522	541	575	621	753	902	999	980	1,103	1,186	1,310	1,806	1,608	1,474	1,322	2,633	3,279	3,789	4,878	6,590	7,090	7,687	522	7,687	1,316	2,348	2,248	96%
Interest-bearing Deposits	1,976	2,013	2,107	2,505	2,719	2,976	3,863	4,537	5,382	6,022	7,218	7,617	8,457	9,906	11,291	11,053	11,942	12,46	13,150	12,417	12,63	12,728	1,976	13,150	7,418	7,499	4,224	56%
Total Deposits	2,498	2,554	2,682	3,126	3,472	3,879	4,862	5,517	6,485	7,208	8,528	9,423	10,064	11,380	12,612	13,686	15,221	16,25	18,028	19,007	19,72	20,415	2,498	20,415	8,975	9,847	6,167	63%
Other borrowings	270	727	1,030	795	1,153	1,295	2,108	2,483	2,808	2,790	2,744	2,772	3,170	3,166	3,992	5,231	4,898	4,251	2,679	3,105	3,720	3,700	270	5,231	2,781	2,677	1,362	51%
Total interest-bearing Liabilities	2,246	2,740	3,137	3,299	3,872	4,271	5,970	7,020	8,190	8,812	9,962	10,389	11,626	13,072	15,283	16,285	16,840	16,72	15,829	15,521	16,35	16,427	2,246	16,840	10,175	10,176	5,443	53%
Equity	189	226	272	322	394	467	542	608	779	939	1,160	1,298	1,462	1,609	1,812	1,946	2,077	2,425	2,682	2,906	3,011	3,211	189	3,211	1,229	1,379	1,000	73%
MARGINS																												
Yield on Earning Assets	6.94%	7.21%	7.84%	7.79%	7.85%	7.82%	7.56%	8.32%	7.20%	5.65%	4.94%	4.98%	5.77%	6.75%	6.91%	5.66%	4.53%	4.12%	3.84%	3.44%	3.05%	2.93%	2.93%	8.32%	6.26%	5.96%	1.74%	0.29
Cost of Liabilities	3.32%	3.80%	5.11%	4.94%	4.88%	4.78%	4.42%	5.26%	3.98%	2.33%	1.74%	1.84%	2.76%	3.82%	4.03%	2.55%	1.21%	0.85%	0.76%	0.56%	0.43%	0.41%	0.41%	5.26%	3.04%	2.90%	1.70%	0.59
Provision for Loan Losses/Earning	0.13%	0.01%	0.01%	0.11%	0.20%	0.29%	0.15%	0.22%	0.41%	0.33%	0.31%	0.16%	0.09%	0.13%	0.21%	1.07%	0.96%	0.50%	-0.03%	-0.09%	-	0.00%	-0.11%	1.07%	0.16%	0.23%	0.30%	1.30
Net Interest Spread	3.49%	3.41%	2.73%	2.74%	2.77%	2.75%	2.98%	2.84%	2.82%	2.99%	2.89%	2.98%	2.92%	2.80%	2.67%	2.04%	2.35%	2.77%	3.11%	2.97%	2.73%	2.53%	2.04%	3.49%	2.81%	2.83%	0.31%	0.11
Net Interest Income/Earning Assets	4.01%	3.93%	3.39%	3.43%	3.46%	3.50%	3.48%	3.35%	3.25%	3.32%	3.13%	3.28%	3.29%	3.23%	3.06%	2.39%	2.56%	2.94%	3.31%	3.16%	2.87%	2.67%	2.39%	4.01%	3.29%	3.23%	0.38%	0.12
Net Non-interest Expense/Earning	1.85%	1.86%	1.42%	1.40%	1.45%	1.32%	1.44%	1.41%	1.51%	1.63%	0.93%	1.04%	0.93%	0.96%	1.00%	1.31%	1.06%	1.13%	1.36%	0.93%	0.96%	0.89%	0.89%	1.86%	1.32%	1.26%	0.30%	0.24
Pre-tax Income/Earning Assets	2.15%	2.07%	1.97%	2.03%	2.01%	2.18%	2.04%	1.94%	1.75%	1.69%	2.20%	2.24%	2.37%	2.27%	2.06%	1.08%	1.50%	1.80%	1.94%	2.22%	1.92%	1.78%	1.08%	2.37%	2.02%	1.97%	0.29%	0.15
Leverage																												
Earning Assets/Equity	14.08	14.05	13.23	11.90	11.46	10.84	12.40	12.78	11.81	10.96	9.95	9.58	9.19	9.15	9.34	9.72	9.81	8.61	7.97	8.02	8.23	7.89	7.89	14.08	9.88	10.50	1.97	19%
RETURNS																												
Return on Equity	30%	29%	26%	24%	23%	24%	25%	25%	21%	19%	22%	21%	22%	21%	19%	10%	15%	16%	15%	18%	16%	14%	10%	30%	21%	21%	5%	0.24
GROWTH																												
Net Interest Income		17%	-2%	8%	19%	13%	32%	11%	15%	14%	6%	13%	8%	8%	9%	-13%	15%	17%	15%	4%	-3%	-5%	-13%	32%	11%	10%	10%	1.02
Net Non-interest Expense		20%	-14%	5%	22%	2%	46%	13%	27%	21%	-36%	20%	-4%	13%	20%	47%	-13%	10%	23%	-25%	9%	-4%	-36%	47%	13%	10%	21%	2.17
Pre-tax Income		15%	8%	10%	17%	22%	24%	10%	6%	9%	46%	10%	14%	5%	4%	-42%	50%	23%	10%	25%	-8%	-5%	-42%	50%	10%	12%	19%	1.55
Federal Funds and Other Deposits		-14%	-57%	70%	69%	-11%	57%	-24%	-40%	-18%	43%	-17%	51%	6%	86%	35%	-7%	-31%	4%	58%	332%	91%	-57%	332%	6%	32%	82%	2.51
Securities		34%	11%	-1%	20%	10%	28%	7%	14%	21%	14%	8%	3%	1%	9%	17%	30%	21%	5%	9%	3%	-9%	-9%	34%	10%	12%	11%	0.89
Loans		11%	17%	12%	15%	15%	36%	22%	21%	7%	11%	8%	11%	15%	18%	9%	-4%	-11%	0%	9%	6%	9%	-11%	36%	11%	11%	10%	0.86
Total Earning Assets		19%	13%	6%	18%	12%	33%	16%	18%	12%	12%	8%	8%	10%	15%	12%	8%	2%	2%	9%	6%	2%	2%	33%	12%	12%	7%	0.61
Non-interest bearing Deposits		4%	6%	8%	21%	20%	11%	-2%	13%	8%	10%	38%	-11%	-8%	-10%	99%	25%	16%	29%	35%	8%	8%	-11%	99%	10%	16%	23%	1.51
Interest-bearing Deposits		2%	5%	19%	9%	9%	30%	17%	19%	12%	20%	6%	11%	17%	14%	-2%	8%	4%	5%	-6%	2%	1%	-6%	30%	9%	10%	9%	0.90
Total Deposits		2%	5%	17%	11%	12%	25%	13%	18%	11%	18%	10%	7%	13%	11%	9%	11%	7%	11%	5%	4%	4%	2%	25%	11%	11%	6%	0.53
Other borrowings		169%	42%	-23%	45%	12%	63%	18%	13%	-1%	-2%	1%	14%	0%	26%	31%	-6%	-13%	-37%	16%	20%	-1%	-37%	169%	13%	18%	41%	2.25
Total interest-bearing Liabilities		22%	14%	5%	17%	10%	40%	18%	17%	8%	13%	4%	12%	12%	17%	7%	3%	-1%	-5%	-2%	5%	0%	-5%	40%	10%	10%	10%	0.96
Equity		20%	20%	18%	22%	19%	16%	12%	28%	21%	24%	12%	13%	10%	13%	7%	7%	17%	11%	8%	4%	7%	4%	28%	13%	15%	7%	0.44

SINGULAR DILIGENCE

Geoff Gannon, Writer | Quan Hoang, Analyst |
Tobias Carlisle, Publisher

BOK Financial (NASDAQ: BOKF) is a Commercial Bank Offering a Variety of Financial Services Primarily in Oklahoma and Texas

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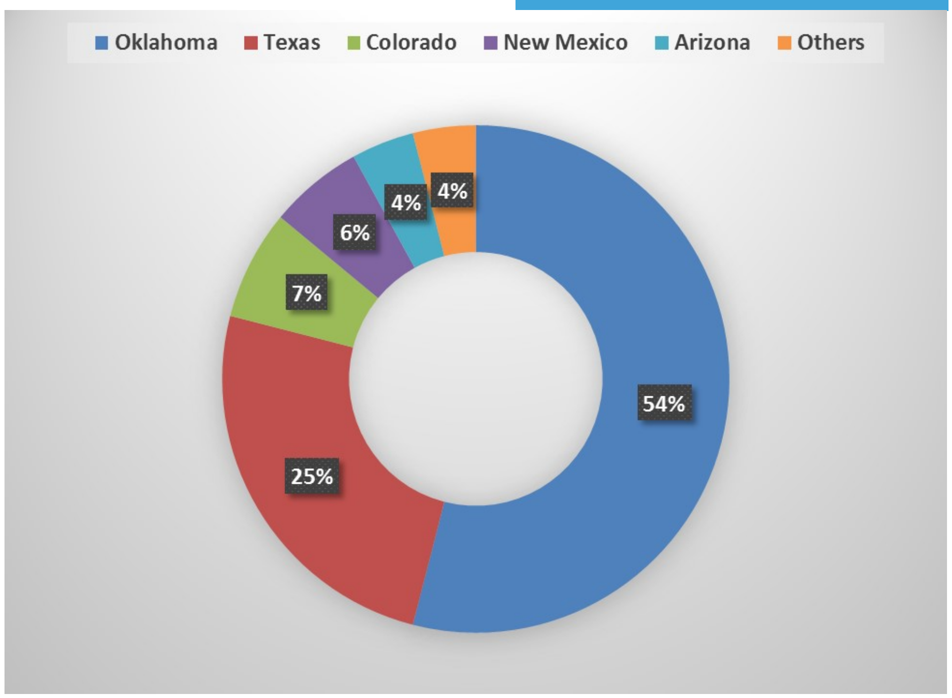
OVERVIEW

BOK Financial is an Oklahoma based bank controlled by billionaire George Kaiser. The bank gets 79% of its deposits from Oklahoma (54%) and Texas (25%). It is also in Colorado (7%), New Mexico (6%), Arizona (4%), Missouri (3%), and Arkansas (1%). The bank's oldest historical roots are in the Exchange National Bank of Tulsa founded in 1910. That bank got involved in Oklahoma oil lending – which BOK Financial is still involved in today – during the 1930s oil boom. The bank changed its name to Bank of Oklahoma in 1975. Bank of Oklahoma was a good bank that acquired a bad bank. In the early 1980s, Bank of Oklahoma bought Fidelity of Oklahoma. A 2013 article in American Banker narrates this story from the perspective of Bank of Oklahoma's eventual Chief Operating Officer and later CEO, Stanley Lybarger: "Following the Fidelity merger, Lybarger was tasked with reviewing the books, and it turned him ghost white. He determined that BOK had just bought itself $20 million to $30 million in embedded, and heretofore unrecognized, losses. 'That bank had a big concentration of bank-stock loans.' Lybarger recalls. Although most of the loans were from rural communities within the state, 'there were a lot of them.' Bank of Oklahoma fired Fidelity's management and asked Lybarger to rebuild that operation. But BOK was still in trouble over the fidelity mess, and the oil bust that struck the Southwest region began taking a worsening toll. More than 130



BOK Financial gets 79% of all its deposits from Oklahoma and Texas

Oklahoma banks failed in the 1980s, and BOK might have been one of them had the FDIC not allowed it to continue operating under a rare open assistance package. Lybarger says the agency agreed to the arrangement because examiners saw the problems were confined to the Fidelity loans."

The Fidelity acquisition turned BOK into a troubled bank. It needed FDIC assistance. And it needed additional capital. In 1991, George Kaiser bought Bank of Oklahoma from the FDIC. He paid the FDIC $61 million and he formed BOK Financial into which he added another $10 million in capital. This is why Bank of Oklahoma uses the odd corporate name "BOK Financial" to this day. In individual states, the company operates under different local names.

Today's BOK Financial is really the creation of George Kaiser. Kaiser is a billionaire. He may have a net worth of around $10 billion. His fortune comes from a family oil business. He is not an especially high profile figure nationally. However, he is well known in the energy industry. Tom Ward, Chairman and CEO of Sandridge Energy "said he has sought Kaiser's advice numerous times throughout his career, calling him 'the most astute investor I've ever met. I look at George Kaiser as being probably the most influential businessman in my life as far as someone I could look up to and take his advice not only about business but about how he lives." This last statement is probably a reference to Kaiser's charitable giving. The former CEO of Chesapeake Energy, Aubrey McClendon said George Kaiser "is widely regarded as the smartest oilman in the business. He went to work early in his life at a small, family-owned oil company and built it through hard work, good decision-making and reasonable risk-taking into one of the largest private producers of oil and natural gas in the industry."

Why does this matter? Why is George Kaiser so important to this bank? And why is his history as an investor and an oilman matter?

BOK Financial is very different from most banks. It is controlled differently. And it is run differently. The entire board and all the top executives – excluding George Kaiser – own 1% of BOK. George Kaiser owns 68%. Kaiser is a very long-term shareholder. Most banks are owned by institutions like mutual funds and index funds that turnover the shares of the company rapidly. Banks rarely have large shareholders. The executives – despite owning little of the stock – are often quite powerful. That's not the case here. Kaiser is a controlling shareholder with 68% of the company's stock. And he is a very long-term shareholder. He was already the second largest shareholder of Bank of Oklahoma 35 years ago. And, 24 years ago he bought majority control of Bank of Oklahoma from the FDIC when he formed BOK Financial. Since he has held stock in the bank's predecessor for over 35 years and has been the controlling shareholder of BOK Financial for 24 years, he is likely to be patient. Also, the money he makes in BOK Financial will eventually be given to charity. Kaiser has already given away several billion dollars during his lifetime. He will probably give everything away before he dies – or his foundation will after he does. So, he is a true buy and hold investor.

In 2014, BOK Financial's CEO said: "…I think it's one of our competitive advantages because we have real stability of expectations from shareholders. And, George, as well as management, together, we all own about 70% of the bank, so we are very much aligned with our strategy of generating good long-term results for the bank and it gives us as a management team I think the flexibility to make long-term investments to go contrarian in terms of how we are building business units or how we are building our geography and not to be constrained by what that quarter's impact might be to earnings….we have invested when others haven't. And I think having George set the expectation as a majority shareholder that we have the flexibility to do that and makes us a better company."

Kaiser is concerned with shareholder value as BOK's CEO explained in 2014: "He's never said I won't sell the bank. He said I want to see returns that exceed what I could get by exchanging my shares for another bank. And if can deliver on that, then the bank stays independent. And we've done that for 23 years and we intend to continue to do that."

As a result of this ownership arrangement, BOK Financial focuses more on long-term growth than on dividends or quarterly results. The bank also is very diversified by income source. From 1991 to 2015, assets went from $2 billion to $31 billion. That's the growth focus. The diversification can be seen a little bit in geography with now 46% of deposits coming from outside Oklahoma. But it is much more obvious in revenue sources. Today, BOK makes about 50% of its revenue from fees. It gets 10% of revenue from brokerage and trading. It gets 10% of revenue from its mortgage business. BOK originates mortgages and buys loans from correspondent lenders. It then sells these loans to U.S. government agencies and continues to service them. BOK gets another 10% of revenue from transaction cards. It runs one of the top 10 ATM networks in the country. Then another 9% of revenue comes from trust fees. BOK has $69 billion in asset under management or in custody. The bank gets the last 10% of its revenue from fees through a mix of service charges and other fees that are similar to how most banks earn fee income.

BOK tries not to dilute its shareholders. And it focuses on growth instead of dividends. So, deposit per share growth has been stronger at BOK than at U.S. banks generally. In 1994, BOK had $44 per share in deposits. Today, it has $295 per share in deposits. That is a 10% compound annual growth rate over those 21 years.

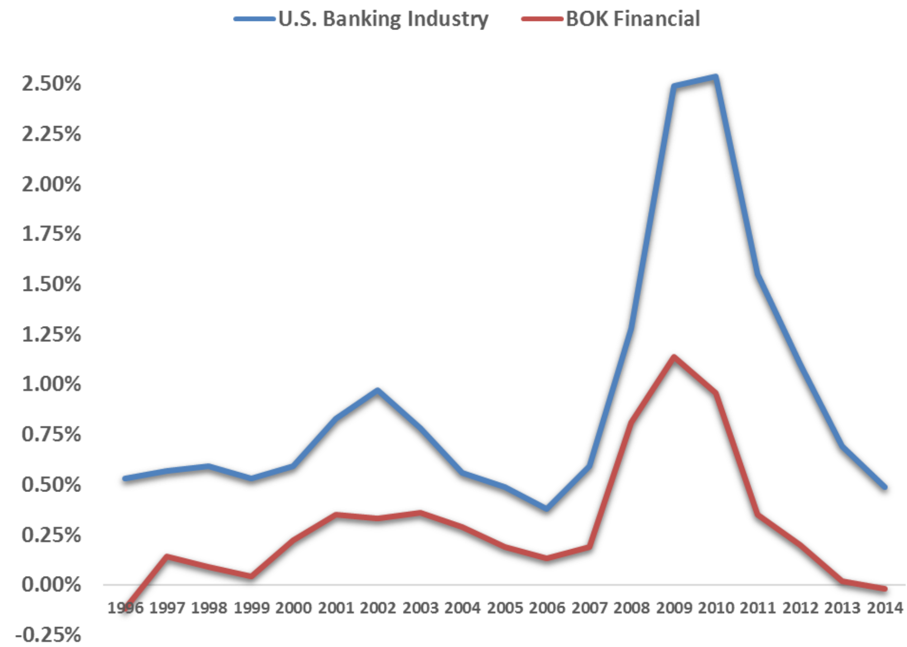
BOK Financial has tiny market share in all but two cities. The bank has 31% of the deposits in Tulsa and 11% of the deposits in Oklahoma city. In all other markets, it has between 1% and 4% of deposits.

Almost all of BOK Financial's growth was organic. The bank acquired a total of $3 billion of assets. Generally, these were small acquisitions to establish a beachhead in a specific state or specific line of business. So, BOK Financial would acquire a small bank in an adjacent state it wanted to enter. Or, it would acquire a small company generating the kind of fee income it wanted to add to its business.

The biggest strategic decision that we can see under George Kaiser's control of the bank is that BOK expanded by diversifying. It increased fee income to reduce the influence of variables it cannot control – like interest rates, stock and bond market performance, commodity prices, and the macro economic cycle. This makes BOK Financial quite different from Frost. If it wasn't for this expansion, the banks would have a lot of similarities in terms of geography (Oklahoma versus Texas) and commercial lending instead of consumer lending and a focus on energy lending. But, BOK Financial is now much more diversified than Frost. It is less sensitive to interest rates. And BOK Financial will benefit less from an increase in the Fed Funds Rate than Frost will. Frost is probably the U.S. bank that will benefit the most from higher rates. BOK Financial is diversified. And so it is not a speculation on higher rates in the same way an investment in Frost is.

DURABILITY

BOK Financial Has Had Lower Loan Charge-offs Than the Banking Industry in Every Single One of the Last 19 Years



Since 1996, BOK Financial has charged off an average of 0.30% of its loans each year versus 0.92% for the U.S. banking industry

Like Frost, one of the big risks at BOK Financial is energy lending. Quan and I don't see this as a very big problem. Because we think Frost is pretty conservative in its energy lending and the evidence suggests that BOK Financial is even more conservative in its energy lending. These banks have concentrations in energy because of their geographic location and because of their history. BOK Financial specializes in energy lending. Not many banks do. So, let's start with just how big BOK Financial's exposure to energy is. We can look at it in two ways. One, is the percent of total loans. Energy is 19% of BOK Financial's total loans. However, BOK also holds securities. Really, it is the percent of assets at risk that matter. About 11% of BOK's earning assets are energy loans. This means that if BOK wrote off 10% of its energy loans it would be writing off 1.1% of its total assets.

What kind of loans are these energy loans? The breakdown is skewed towards production and toward oil. About 61% of all the energy loans are made to oil producers, about 24% are made to natural gas producers, 8% are to energy services companies, 4% are made to midstream companies, and 3% are wholesale and retail of petroleum products. BOK Financial has been in the energy lending business for 105 years.

The Exchange National Bank of Tulsa was founded by Harry Sinclair and other oilmen. The bank is now owned by George Kaiser – another oilman. The last 20 years have been very good years for the oil business. So, they may be completely unfair to use as a benchmark for the future. However, we do have a 20-year record of net charge offs. Over the last 20 years, Bank of Oklahoma's energy loan portfolio had an annual charge-off rate of 0.06% if we exclude a fraud loss in 2008. Including the fraud loss, the 15-year average would be a 0.16% rate and the 10-year average would be a 0.21% rate. Even using just the last 10 years and including the fraud loss – a 0.21% charge-off rate is much lower than other banks can achieve in other kinds of lending. Oil prices were volatile during much of this time. The 20-year record includes oil prices of $140 per barrel and oil prices of $11 per barrel. Financial conditions were also volatile. However, this 20 year period only goes back to the mid-1990s. The real acid test of an energy lender – and, really any lender in Oklahoma and Texas – would be the 1980s. BOK needed to be bailed out in the 1980s because it acquired a bank that had bad loans. The current situation in oil production in the U.S. is most comparable to the 1980s. Back then, oil prices declined all the way down to about $22 per barrel in today's dollars. So, we are not at the same level that oil prices fell to in the 1980s. And certainly the economies of Oklahoma and Texas are not as stressed. And financial conditions are much, much looser for borrowers. So, we still are not seeing as tough a test of lending standards in energy loans as we did in the 1980s. Things could get worse.

About 85% of BOK's energy loans are to producers. The 15% of energy loans that aren't to producers are only about 1.5% of the bank's total assets. So, they're really irrelevant. For our purposes, it only matters whether the loans to energy producers are safe or not. Loans to energy service companies could all go completely bad and BOK would survive just fine. It is really only loans to producers that are big enough to cause problems.

BOK Financial usually lends about 50% to 60% of the collateral value of the producer's reserves using the market price. The bank only lends against producing reserves. It packages a minimum of 10 producing wells into a loan. And no single well is allowed to be more than 20% of the total collateral value. BOK determines the collateral value through appraisals done by their in house engineers. BOK has 9 reservoir engineers. In most years, the collateral value is the market price of the commodity. So, a producing oil well would use the number of barrels and the price per barrel in the spot market. However, BOK Financial capped collateral values at $85 per barrel. The bank ignored market prices when they were above $85 a barrel and simply used $85 per barrel as if it was the market price. In recent years, BOK has done a discounted cash flow calculation using a 3% inflation rate in the price of oil and a 9% discount rate. The collateral value is reset every 6 months depending on market prices. Like other energy lenders, BOK performs stress tests on their portfolio from time to time. The most recent stress test used $40 a barrel oil.

The overall loan portfolio of BOK Financial is: 25% commercial real estate, 19% energy, 19% services, 13% residential mortgage, 11% healthcare, 9% wholesale and retail, 4% manufacturing, 3% other commercial and industrial, and 3% consumer. From 1996 through 2014, U.S. banks generally had a 0.93% charge-off rate for their loans while BOK had a 0.30% charge-off rate. In the crisis years of 2009 and 2010, the industry charged off 2.5% while BOK charged off 1%.

BOK Financial is the largest U.S. bank that rejected TARP money. It was never involved in any subprime lending. The bank's securities portfolio has a risk of a large paper loss. This is true of almost all U.S. regional banks and even lots of other financial institutions like insurers. The bank has $10.8 billion in securities. These are U.S. Treasury bonds and mortgage backed securities. The portfolio's duration is 3.2 years. This is shorter than Frost's duration of 4.7 years. However, it is longer than the portfolio that Progressive keeps. A 3% rise in the Fed Funds Rate (from today's range of 0% to 0.25% to a hypothetical future range of 3% to 3.25%) would cause a paper loss of over $1 billion for BOK. Banks like BOK Financial and Frost are not require to include these mark to market losses when calculating capital ratios. The bank would report the loss to shareholders. But, it would not need to raise capital.

There is some risk of a lack of durability in BOK Financial's mortgage business. This is a very new business for them. During the housing boom, BOK Financial wasn't really involved in residential mortgage lending. After the crisis, they grew the business a lot. In 2006, BOK's mortgage banking revenue was $27 million. In 2012, it hit $169 million as homeowners refinanced to exploit historically low rates. By 2014, it was down to $109 million. BOK Financial originates a lot of loans and generally keeps about 3 weeks' worth of originations on its books. These loans will eventually be sold to U.S. government agencies. The only loans BOK Financial keeps permanently are non-conforming loans. These are generally jumbo loans to customers of BOK Financial. For example, an executive at a business that keeps its accounts with BOK Financial might take out a jumbo mortgage loan with the bank. The borrowers on these jumbo loans have FICO scores above 720 and are allowed a maximum debt to income level of 38%.

How much margin of safety is there in BOK's loan portfolio? How bad would things have to get before the bank would report losses? Right now, loans are only 53% of BOK's earning assets. Securities are the other 47%. The bank's lowest pre-provision return on earning assets was 1.78%. For the bank to report a loss, the charge-off as a percent of the loan portfolio times 0.53 would have to exceed the pre-provision return on assets. The very highest charge-off BOK ever had in the past was 1.14%. Again, that's the charge-off rate on loans. The charge-off rate as a percent of earning assets would be about half that because BOK Financial is diversified about equally between loans and securities. The securities are mostly explicitly or implicitly guaranteed by the U.S. government. Tangible equity is a little over 9% of total assets. A one-time loss of a couple percent of tangible assets would be survivable. But, the safety of BOK Financial does not come from its equity cushion. It comes from the historical record of good lending habits. Today's CEO is not the same CEO who ran the company for most of its history. However, the controlling shareholder is the same. And the current CEO has been with BOK Financial for 24 years. So, we don't expect any changes in risk taking.

MOAT

BOK – like all U.S. Banks – has a Moat insofar as its Depositors Consider Their Checking Accounts to be "Sticky" and Don't Shop Around for Better Rates

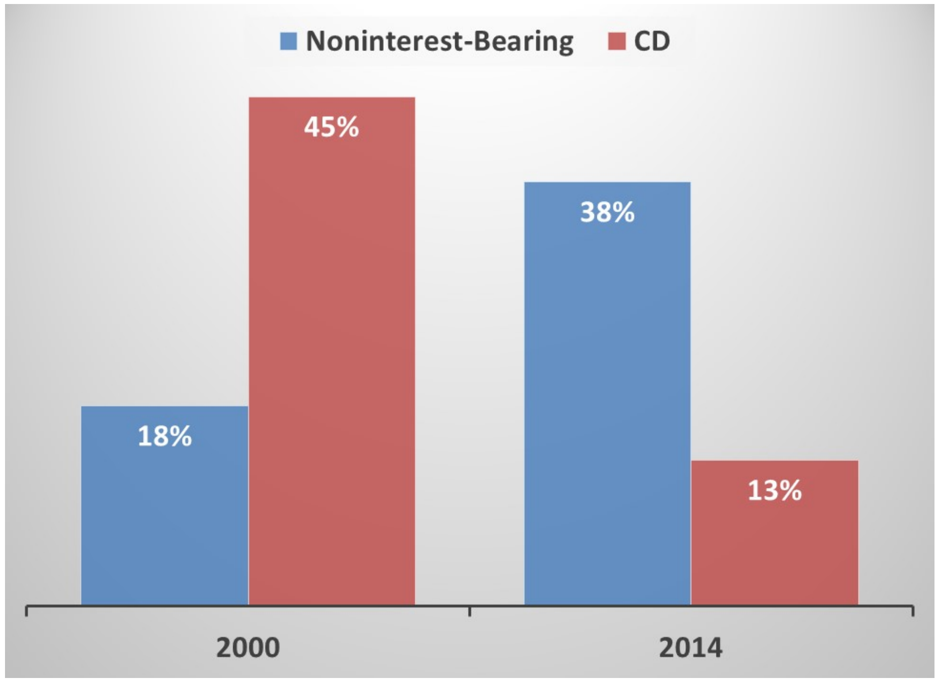
BOK Financial doesn't have a moat except to the extent that all banks have moats. All banks have moats in that sense that funding themselves with customer deposits leads to a cheaper cost of money than other providers of capital have. Bank customers are sticky. Customer retention rates are high. And U.S. depositors – both households and businesses – don't expect to get a meaningful return on their transaction accounts. Americans save through owning stocks and bonds and having equity in their homes. Bank accounts are used for transactions. So, a well-run bank can achieve a good return on equity without necessarily having competitive advantages relative to other banks. This is unusual. But, it is unusual to have an industry where so few customers ever look for an alternative.

BOK Financial does have some differences from other banks that give it a bit more of a moat than other banks have. But, these advantages are just a matter of degrees. Other banks have these same things. Most just have less of them. BOK Financial is not a better bank than Frost. Frost has a wider moat than BOK.

Banks compete aggressively for loans. This is especially true of transactional loans. Competition for commercial and industrial loans are not as intense on rates and terms. However, it is harder to get this business. About 70% of BOK's loans are relationship based. The deposit base at BOK is better than at most banks. Time deposits are 12% of total deposits. Time deposits don't create any economic value. Demand deposits are 86% of total deposits. Demand deposits – checking accounts – can create a lot of value, because the depositor is paid less than the going rate for loans. Non-interest bearing deposits obviously create a ton of value, because they allow a bank to have money that does not cost the bank interest but which can be loaned out to earn the bank interest. This part of the balance sheet is sensitive to interest rate increases. It costs BOK the same amount to have non-interest bearing deposits regardless of how much those deposits can be loaned out for. Total deposits are only 79% of BOK's total liabilities. This is much higher than the U.S. banking industry generally (where total deposits are close to just 50% of the balance sheet). However, it is much lower than Frost, where total deposits are well above 90% of total liabilities. Liabilities other than deposits do not create any economic value for a bank. So, all of the economic value at BOK comes from its demand deposits and especially its non-interesting bearing demand deposits.

At a 3% Fed Funds Rate, BOK Financial would have a more than 0.5% funding advantage versus the industry. Banks can earn the same amount on money they lend out. They can certainly earn the same amount on securities they buy. So, a 0.5% funding advantage is essentially a 0.5% return on assets advantage. With the leverage banks use, that can easily become a 5% return on equity advantage.

BOK Financial has greatly improved its cost of funding over the last 15 years. In 2000, the bank's time deposits were 45% of its total deposits. Today, they are 12% of total deposits. Time deposits usually cost about the same as the Fed Funds Rate. So, they don't create economic value. And all banks tend to pay similar amounts for time deposits. So, there is no competitive advantage in this area either.



Over the last 15 years, BOK Financial increased non-interest bearing deposits from 18% to 38% of total deposits while cutting Certificates of Deposit (CDs) from 45% to just 13% of total deposits

BOK Financial's interest bearing deposits are about 47% of total deposits. It's important to keep in mind just how much better interest bearing deposits are than time deposits. Interest bearing demand deposits do pay interest. So, they are worse than non-interest bearing checking accounts. But, while BOK Financial generally paid about 1 times the Fed Funds Rate for its time deposits, it has usually paid around 0.63 times the Fed Funds Rate for its interest bearing deposits. So, interest bearing deposits – while they aren't free – are about a third cheaper than time deposits. The big change over the last 15 years is the increase in BOK's non-interest bearing deposits. In 2000, BOK only got 18% of its total deposits from non-interest checking accounts. Today, a full 39% of its total deposits pay no interest. This will make BOK Financial much more profitable in the next normal interest rate environment than it was in the last normal interest rate environment.

The improvements in BOK's deposit base since 2006 all seem to have come from commercial banking and private banking. BOK's commercial banking deposits grew 12% a year while its private banking deposits grew 15% a year. Consumer banking grew just 3% a year. This is probably because consumer banking outside of Oklahoma had to rely on time deposits to attract household funds in markets where BOK Financial was not established.

BOK Financial has low net operating expenses. Net operating expenses are the result of non-interest costs minus non-interest revenue. Over the last 20 years, non-interest expenses as a percent of total earning assets declined from 4.73% to 3.35%. This was due in part to good cost control and in part to strong deposit per branch growth. BOK had $42 million in deposits per branch in 1994. In 2014, it had $116 million in deposits per branch. This is an annual growth rate of 5.5%. A bank that grows deposits per branch by 5.5% a year is really achieving something quite similar to a retail chain with same store sales growth of 5.5% a year. This isn't obvious at the time, because interest rate changes disguise the higher normal earning power. But, given the same level of interest rates a 5.5% increase in deposits per branch leads to at least a 5.5% increase in profit per branch – and possibly quite a bit more due to expenses growing slower than deposits. For example, rent does not grow at a 5.5% annual rate and the rent paid on branches is a meaningful expense. So, it is important for banks to grow their deposits per branch faster than the annual increase in rent for their branches and pay for their staff.

BOK Financial's real advantage is its net operating expense. Some other banks have lower non-interest expenses than BOK. But, very few banks have a better combination of low non-interest expenses and high non-interest income. Banks with over $10 billion in assets average a 1.12% net operating cost. BOK has a 0.89% net operating cost. So, it has about a 0.2% operating cost advantage per dollar of earning assets over other big banks. As we explained with the interest costs, a 0.2% advantage per dollar of earning assets can become a 0.2% return on assets advantage and a 2% (with leverage) pre-tax return on equity advantage. If a bank had just a 0.5% interest cost advantage and a 0.2% operating cost advantage, that could translate into an ROE advantage of as much as 7% pre-tax or 4.5% after-tax even without using especially high leverage for a bank. So, while the differences in expenses we are discussing here may sound small – in a normal interest rate environment, they can mean the difference between a bank earning a 10% return on equity and a bank earning a 15% return on equity year after year.

The future of BOK's moat depends on its position between big banks and small banks. BOK offers fee based services that small banks lack the scale to do effectively. It uses separate names for its bank in each state to give them a local feel.

Here is how BOK's investor relations described the company's competitive position: "We are very much built to have product offerings that compete with the largest national banks, while we ourselves remain a midsized regional bank. So we can compete with anybody for a new customer relationship – the bigger banks, where our product set matches up well, and other midsized or smaller banks, the may not have the product depth that we have."

QUALITY

In Normal Times: BOK Financial Can Earn at Least a 15% Return on Equity

BOK Financial can earn a higher return on equity than other banks. Let's start by looking at BOK's actual past returns on equity. BOK's pre-tax return on equity from 1993 to 2014 ranged from 10% to 30%. The median pre-tax ROE was 21%. The variation was low. A 21% pre-tax ROE translates into about a 14% after-tax ROE. However, it is reasonable to expect that BOK will actually make a much higher return on equity over the next 20 years than it did over the last 20 years. This depends in part on interest rates. If interest rates are much lower over the next 20 years than they were over the last 20 years, it is possible that all banks could earn a lower return on equity than they otherwise would. However, the much bigger issue is company specific. How big is BOK Financial's edge over the industry? What was its cost and yield situation versus the industry in the past? And what will it be in the future?

Most banking assets are controlled by big banks with more than $10 billion in assets. We'll compare BOK Financial to this group generally and to some individual examples within that group as well. In the future, BOK could have 1.27% better returns on its earning assets than the group. It can have a 0.44% higher net yield, a 0.60% lower funding cost, and a 0.23% lower operating cost. Banks with more than $10 billion earn about 1.62% pre-tax on their earning assets. So, BOK could theoretically make between 2.7% and 2.9% on its earning assets. With 10 times leverage, this can translate into 27% to 29% pre-tax returns on equity and 17% to 19% after-tax returns on equity. So, roughly speaking, we are talking about a 15% to 20% ROE in a normal environment. This is higher than the historical record. Over the last 20 years, BOK actually achieved more like a 14% average return on equity. Why will the future be better than the past for BOK?

BOK has a lot less time deposits than it used to. It also has more non-interest bearing deposits. This improves its funding position versus the industry. Historically, this had not been much of a strength for BOK. But, now it can be a full 0.6% of earning assets advantage over big bank peers. Like all banks that grow deposits per branch quickly, BOK Financial also has much lower operating costs as a percent of earning assets than it did in the past. This is due to the 5.5% annual growth rate in deposits per branch over 20 years. Growing deposits a lot faster than you grow branches is the key to achieving a low non-interest expense number. BOK's diversification into fee generating businesses gives it a very good net operating cost position. That is an area where big banks excel. The main advantage for big banks over small banks is usually their higher fee income. BOK is not as big as the biggest banks – but it generates fees in many of the same areas that they do. It is unusual for a bank of BOK's size to generate as much fee income as it does.

Smaller banks tend to have higher net operating costs than large banks. Banks with between $1 billion and $10 billion in assets have an average net operating cost of 1.83%. Meanwhile, banks with over $10 billion in assets average a net operating cost of 1.10%. BOK Financial has a net operating cost of 0.89%.

Yield advantages are a little complicated. The amount of loans a bank makes relative to securities can be a factor. The kind of loans it makes can be a factor. And then the conservativeness of lending is a factor. Often, a bank will have a high gross yield – the yield before losses – but will have a lower net yield. This is because it is charging more to make riskier loans, but is not actually charging enough more to offset the risks taken.

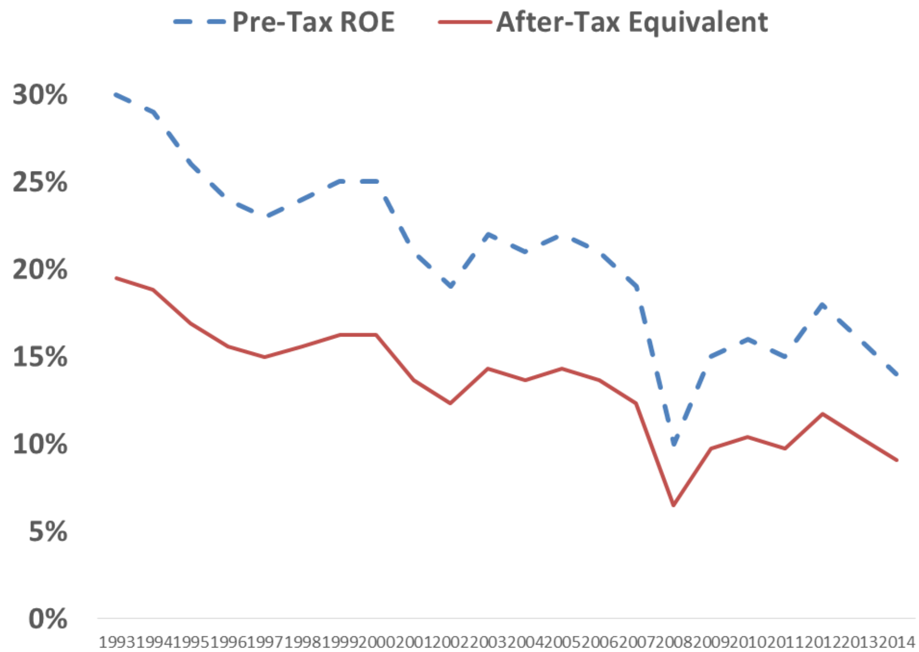
BOK tends to have a lower gross yield than other banks. From 1993 to 2014, Wells Fargo's gross yield was 1.1% higher than BOK's. U.S. Bancorp's was 0.57% higher. And even Frost's gross yield was 0.03% higher. Frost is not a big lender to consumers. It is a conservative lender that focuses on business customers. So, many banks will have a higher gross yield than Frost. But, BOK has essentially the same gross yield as Frost. Like Frost, BOK always has a lot of securities. Securities are usually 40% of earning assets.

If we ignore the securities portfolio, there is still no yield difference between Frost and BOK on a gross basis. U.S. Bancorp's advantage on a gross basis shrinks to 0.15%. But, Wells is still a full 1% higher. This is because Wells Fargo makes a lot of consumer loans. BOK and Frost don't.

But, it isn't gross yields that matter. It is net yields. So, we need to look at charge-offs. What were the average charge-offs for these banks from 2002-2014 as a percent of total loans?

Wells Fargo's average charge-off was 1.17%, U.S. Bancorp's was 1.01%, BOK's was 0.39%, and Frost's was 0.29%. Since BOK and Frost own more securities and make fewer loans, these numbers translate into even lower loan losses relative to the total balance sheet than they do at Wells or U.S. Bancorp – or, indeed, most any other bank.

What matters is the net yield. BOK's net yield on loans from 1993 to 2014 was 0.52% better than U.S. Bancorp. It was 0.44% better than banks with over $10 billion in assets generally. However, it was worse than two peers:



From 1993 to 2007 (the last period with normal interest rates), BOK Financial earned a 15% after-tax ROE despite using much higher cost funding than it does now

Frost and Wells Fargo. Frost and Wells Fargo are good at making loans. Frost has very low loan losses. And Wells Fargo has been able to keep good control of loan losses even while making lots and lots more consumer loans than other banks do. BOK's net yield disadvantage to Frost is tiny at just 0.05%. That's really not meaningful. The disadvantage against Wells is bigger at 0.17%.

Quan and I are not arguing that BOK is a better bank than either Wells Fargo or Frost. We think Frost is the best bank stock in the U.S. And we'd recommend it above BOK. We wouldn't recommend Wells. But, that's not because it isn't high quality – Wells might be the best bank in America. It's because Wells is huge and complicated and subject to too big to fail rules. BOK is easier to understand than Wells although not quite as easy to understand as Frost.

In the past, BOK had a funding disadvantage versus the peers we've been using here. It had a 0.2% and 0.3% disadvantage versus U.S. Bancorp and Wells. BOK's funds cost 0.9% more than Frost's funds. That's a huge disadvantage. But, to be fair – almost everyone's funds cost more than Frost's funds. If we look at BOK's funding in terms of the Fed Funds Rate we'd expect it to be about 0.5 times the Fed Funds Rate. Meanwhile, we'd expect the banking industry as a whole to have a cost of funding that is 0.7 times the Fed Funds Rate. This calculation is done by applying the historical cost ratios for interest bearing deposits, time deposits, etc. to the Fed Funds Rate and then weighting BOK's sources of funding as they are now using those past relationships. You can read the notes to the "Quality" section to see the math involved. We used the same sort of approach when discussing Frost.

BOK has cheaper sources of funding than it did in the past. It is more specialized in energy, healthcare, mortgage banking, wealth management, and ATM networks than other banks its size. BOK is no longer at a disadvantage to the biggest banks in the U.S. in terms of its funding costs. And it actually has a net non-interest cost advantage over big banks. So, it is a high quality bank capable of earning a 15% to 20% return on equity in a normal interest rate environment.

CAPITAL ALLOCATION

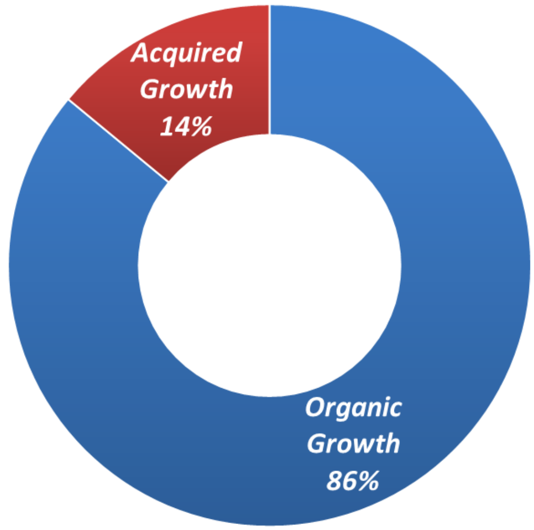
BOK Financial Often Makes Small Acquisitions in Geographic and Product Areas It Wants to Expand Into

BOK Financial is more growth oriented than the average bank. It is a lot more long-term oriented, as several quotes from members of the management team show.

Here is BOK's former Chief Credit Officer in 2010 talking about non-performing loans: "I know all banks say this but we think we've been pretty aggressive in moving items to the non-performing status, so that our specialty team of workout guys in our Special Assets Group can address them timely….BOK's approach is to maximize the value of the NPAs rather than to sell at a distressed or heavily discounted price. We don't believe in allowing a venture capital firm to earn double-digit IRRs at our expense. We will wait patiently in an effort to maximize our return for our shareholders. So we value the long-term economics over the short-term…"

And here is BOK's CFO also in 2010 talking about George Kaiser's attitude toward acquisitions: "He has always been supportive of any acquisition that we feel like is strategic in nature and that is franchise building across this regional footprint…we want to remain as a growth company and utilize our capital from growth as opposed to pass that back to him through dividends (though) we do have a modest dividend. But out first and foremost (goal) is we want to grow. And so, if we find the right strategic franchise building opportunity, he would support us in that effort."

BOK has done acquisitions. They are usually small. They are done as much for cash as possible – though sometimes the seller wants shares. And they are done for qualitative rather than quantitative reasons. BOK hasn't done distressed deals. It hasn't bought banks where it plans to fire a lot of people. What it has tended to do is buy something small and then invest in growing it a lot either in that geographic area or that product area.



Although BOK Financial makes a lot of small acquisitions, the vast majority (86%) of its growth over the last 23 years has actually been organic

In 2011, BOK's CFO said: "We have not run around the country trying to find an FDIC deal that's really a financial transaction. We want to buy something that we can build from, to truly build from, and that's what we're focused on…you haven't seen us be successful at this point on the M&A front, but we have the capital to do it going forward." In fact, BOK has not acquired a bank since 2007. It has bought other things. In 2012, it paid $24 million for an estate and tax planning business. In 2013, it paid $8 million for a wealth management product. It also bought a 401k administrator in Texas. These are new product areas that BOK can cross-sell rather than new geographic areas. They aren't transformative acquisitions. And they are strategic deals rather than financial deals.

This is what BOK's new CEO said about mergers in 2014: "We are not an organization that is particularly interested in turnaround or distressed deals, even though they can, from a transaction standpoint be accretive near term. Our view is that you're going to divert substantial management resources and focus and expertise to run those around and that's going to take away from your opportunity to grow the bank organically in other areas, which we have a good track record of doing. So our M&A approach has been to identify banks that we think would be strategically additive to us…maybe they bring a great relationship in terms of customer base…but have been able to sustain themselves through the downturn."

BOK's former COO (he left the company this year – perhaps because he was passed over for the CEO job) explained why BOK doesn't do distressed deals: "We historically have not bought problem institutions…what we've looked at…are organizations that we've got respect for, that culturally we think is going to be a really good fit for BOK Financial so we don't have any personnel issues…our model is to buy and invest heavily and grow that organization much faster than they would have otherwise been able to grow themselves. We want an organization where we like management. We historically don't buy something and then fire everybody." In fact, the management team BOK acquires sometimes goes on to higher positions in the company. For example, the current CEO joined BOK in 1991 when BOK bought his brokerage business.

So, BOK hasn't made a big acquisition of any bank since 2007. It has only done little niche acquisitions to add certain financial products. What about dividends and share buybacks? BOK hasn't reduced the share count over time. But, it hasn't increased it especially fast either. Over the last 10 years, the number of shares outstanding has grown by 0.4% a year. Before 2005, there was more share dilution due to acquisitions and to the conversion of some preferred stock that had existed from the very beginning of BOK's recapitalization as a new entity in 1991. The preferred stock conversion was a one-time event that had to do with the original circumstances under which the company was created. It is best to ignore that. We can look at the 20 years from 1994 to 2014 and exclude the preferred stock conversion. This includes all sorts of compensation and all of the acquisitions that were done with stock. The rate of share dilution over those 20 years was 0.8% a year.

Compared to other banks, BOK focuses more on allocating capital to organic growth opportunities for the long-term. The company's investor presentations always include 15-year comparisons between BOK and its peers. The company's long-term incentive plan uses a 3-year EPS growth comparison between BOK and its peers. If BOK is in the 80th percentile or higher, management gets 200% of the target compensation. That's not an especially long-term focus for an executive compensation plan. And the board and all the executives other than the controlling shareholder, George Kaiser, own very little of the company. The attitude of management seems to be focused on long-term organic growth. But, there is nothing special in the personal incentives – other than keeping the controlling shareholder happy – that would reinforce the pursuit of long-term organic growth over everything else.

The bank acquisitions BOK made between 1997 and 2007 were done at acceptable prices. On average, BOK paid 0.23 times earning assets. This isn't very different from where some bank stocks trade today. And banks stocks are not in favor right now. BOK would only need to earn a 2.3% pre-tax return on earning assets to make the price paid be the equivalent of buying something for 10 times EBIT. That is a fair price for a deal. And could be a good price for a deal done for strategic rather than purely financial reasons. BOK never made very big acquisitions. The biggest single purchase was the 2007 acquisition of Worth Bancorporation. The price paid was 0.33 times earning assets. That's not an especially low price. But, 2007 wasn't an especially good time to get a deal on buying a bank. Fort Worth, Texas is an attractive market that BOK wanted to enter for strategic reasons. The deal wasn't too big or too expensive. So, there is little risk of BOK's acquisitions doing much harm to shareholders. The company tries to make small purchases, not all of the purchases are banks, the prices paid are within a reasonable range, and BOK uses cash whenever possible. The bank does pay a dividend. Last year, it paid out 38% of its earnings in dividends. But, it does not have a specific payout policy. Investors shouldn't buy BOK for the dividend. This is not a focus of the management or the controlling shareholder. And there are other banks that have set dividend payout policies. But, BOK is unlikely to hoard cash. It will probably pay out excess cash when it accumulates on the balance sheet for too long. The company's leverage position is normal for a bank. There is evidence that BOK is especially conservative in its lending. And there's evidence that BOK wants to keep a higher percentage of securities – usually around 40% – as a part of earning assets than most banks. But, there isn't any evidence that BOK is abnormally conservative when it comes to how much tangible equity it needs to have relative to assets. So, to the extent it has extra cash – it will probably pay out dividends.

VALUE

BOK Is Not Cheap Now – It Will Be Cheap When the Fed Funds Rate Returns to Normal

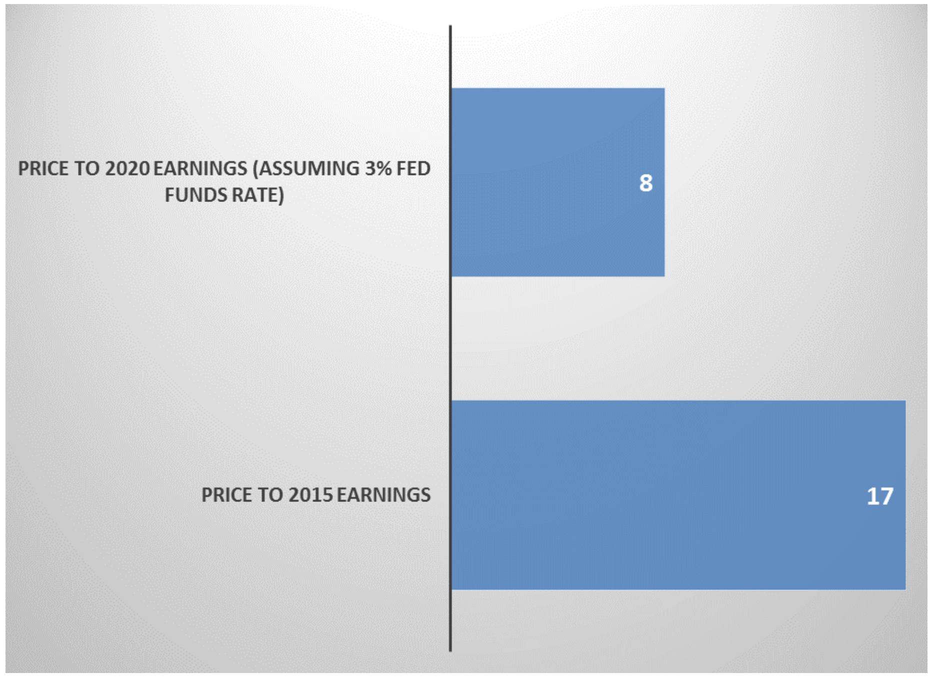
BOK Financial is not cheap based on the current interest rate environment. Its price is completely normal compared to the historical P/E ratios it has traded at. However, interest rates are not normal. It is possible that investors may be able to earn as much as 15% a year in BOK if they buy it today and hold it through 2020. This can happen if the Fed Funds Rate is increased from about 0% today to about 3% by the end of 2020.

BOK is not cheaper than some peers. Both Frost and Commerce (the Missouri bank – there are many banks named "Commerce") are equally attractive in terms of their prices today versus what they would earn with a 3% Fed Funds Rate. But, BOK is much cheaper than other stocks that are available now. It is also much cheaper relative to normal earnings than most stocks have been in most historical time periods.

The speculative aspect of this calculation is what a normal interest rate environment would look like. Quan and I think a 3% Fed Funds Rate is normal. The next speculative aspect of this calculation is when that might happen. That is a much less important part of the calculation. Banks can grow deposits even while they earn little on those deposits. As long as the Fed Funds Rate does eventually rise these deposits will eventually produce a lot of earnings. And as long as interest rates stay very low, it is likely that stock and bond prices will be high. This means the opportunity cost of buying a stock that does not advance in price for several years is lower now than it usually would be. So, the timing of a Fed Funds increase is definitely speculative. But, it's really not very important to the value of a bank stock. It's important if you intend to trade the stock. But, as long as you expect to buy the stock and hold it for a full 5 years – the timing of when the Fed raises rates is not very important unless we are talking about a 10 or 15 year wait instead of a 5 year wait. That would matter. But, whether rates rise in 2016, 2017, 2018, or 2019 isn't very important. Once they do rise, BOK Financial's results will gradually adjust to the increase within 5 years. The stock price may respond even quicker as analysts try to estimate what earnings will be one year out.

If the Fed Funds Rate is as high as 3% in 2020, then today's stock price for BOK is only about 8 times after-tax earnings in 5 years. Quan and I estimate that BOK's normal pre-tax earning power is $751 million or $10.89 a share. This means the company would be capable of earning about $7 per share after-tax today, if the Fed Funds Rate was 3%. The Fed Funds Rate is between 0% and 0.25% right now. And it may be many years before the Fed Funds Rate reaches 3%. Once it does, it could take a few more years for BOK's assets and liabilities to adjust to the level of interest rates. So, we can't say when BOK will earn "normal" earnings again. But, when valuing the stock, we have to use a 3% Fed Funds Rate instead of a 0% Fed Funds Rate, because the 0% rate is obviously not normal while the 3% rate might be. This means we will discuss the stock without referring to its actual recent earnings at all. They aren't relevant. Because a 0% Fed Funds Rate is not normal.

The way we value BOK is the same way we valued Frost. We calculate the return on earning assets in a 3% Fed Funds Rate environment. And we look at how much earning assets are per share. The return on earning assets depends on the net interest spread and the bank's operating cost. BOK used to have a lower net interest spread than



Investors who pay 17 times this year's earnings for BOK Financial will be buying the stock at 8 times the stock's possible earnings in 2020

peers like Wells Fargo, First Financial, Commerce, Frost, U.S. Bancorp, and Prosperity Bancshares. Like in the Frost calculation we have to take into account the impact of Regulation Q's repeal. Regulation Q prevented banks from paying interest on commercial demand deposits. Banks got around this by giving credits to these depositors that could be used to offset service fees. Regulation Q was repealed in 2011. The Fed Funds Rate has been near 0% since 2011. And demand deposits would pay less than the Fed Funds Rate. For example, BOK's interest bearing demand deposits generally paid about 0.63 times the Fed Funds Rate in the past. You can see that if the Fed Funds Rate is between 0% and 0.25% – no customer is going to care much about whether or not they get paid less than two-thirds of that. So, we can't judge the actual impact that the repeal of Regulation Q will one day have. So far, it hasn't had any impact. But, so far, depositors haven't been able to benefit from the repeal of Regulation Q, because interest rates have been near zero. This is what the CEO of BOK said in 2014 when asked about the repeal of Regulation Q: "Customers certainly already benefit from the earnings credit rate as an offset against the fees that they would pay for their treasury service business, so they are already cognizant of that….I wouldn't say that interest on commercial deposits is something that people are talking about, and we are not really seeing much competitive movement there." For this calculation, we will make the very conservative assumption that at a 3% Fed Funds Rate, BOK would pay 0.5 times the Fed Funds Rate (1.5%) in interest on commercial demand deposits. This is a conservative estimate because historically commercial depositors got 0 times the Fed Funds Rate and because BOK's demand deposits that were allowed to pay interest – these are the non-commercial deposits – only paid 0.63 times the Fed Funds Rate. We expect commercial deposits to receive less interest than other demand deposits. So, 0.5 times is a conservative estimate. It is the same estimate we used for Frost.

So, using this approach, BOK's commercial deposits would cost 1.5% when the Fed Funds Rate is 3%. Other interest bearing liabilities are assumed to cost 0.89 times the Fed Funds Rate (so 2.68% if the Fed Fund Rate is 3%). Historically, BOK's median yield was 6.26%. We will assume 5.75% here as normal because that would be a normal margin for BOK over the costs we expect it to have. And, because that's a more conservative approach than using the actual historical yield which is higher. Net charge-offs over the last 20 years were 0.16%. We don't have any insight into what they will be in the future. We don't have a better method for calculating charge-offs than to assume they will be the same in the future as the past. The last 20 years included some bad years for charge-offs in the crisis. But, BOK's results weren't bad. There is definitely a risk we can underestimate normal charge-offs, because almost all banks have much, much higher charge-offs than BOK had historically.

Using these assumptions, BOK's pre-tax return on earning assets would be 2.71%. The bank has $27.65 billion in earning assets. So, that gives a normal pre-tax earnings estimate of $750 million. At today's price, the stock trades for a little over 6 times normal pre-tax earnings. In other words, it has a P/E of no more than 10. Of course, the reported P/E is much higher because the Fed Funds Rate is 0% instead of 3% today. But, we are estimating earnings in normal times and ignoring today's unusual results.

BOK is cheaper than other banks. Using this same approach, BOK would trade at 6 times pre-tax earnings while USB is at 8 times pre-tax earnings, Frost is at 6 times pre-tax earnings, Commerce is at 8 times pre-tax earnings, and First Financial is at 12 times pre-tax earnings. The best peers are definitely Frost and Commerce. They are both cheap. Frost, Commerce, and BOK are all cheap on a normalized basis.

The other way of judging BOK's value is to try to gauge what the stock would return if held for 5 years during which the Fed Funds Rate rises from 0% to 3%. Most Fed members expect the Fed Funds Rate to be in the 3% to 4% range sometime after 2017. So, we will use 5 years as a convenient cut-off. In this way, we will assume the Fed Funds Rate is 3% in 2020 and an investor buys BOK today and holds the stock through 2020. What will his annual rate of return be?

It depends on deposit growth. Historically, BOK has grown deposits quite rapidly. However, an increase in interest rates will cause non-interest bearing deposits to decline somewhat. BOK management said they expect $2 billion in deposits to be withdrawn if interest rates rise 2%. So, we will take that into account. The worst 5-year deposit growth in BOK's history was 6%. We'll use a 5% growth rate assumption for the next 5 years.

That would make earning assets in 2020 be $32.74 billion. Pre-tax earnings would be 2.71% times $32.74 billion which is $887 million. That's about $577 million after taxes. Using today's share count – we actually expect there's a chance BOK might buy back some stock between now and then, but we can't be sure since they hadn't done that in the past – we get an EPS of $8.37 for 2020. BOK has historically traded for 12 to 17 times earnings. Using that range, the stock price in 2020 could be between $100 and $142. The dividend yield is now 2.5%. BOK has no set dividend payout policy. However, the bank has excess capital right now. So, we will just assume the current dividend yield is maintained for the next 5 years. The capital gain on the stock would provide a return of about 12.5% a year if the stock is bought today around $70 a share and sold in 2020 around $125 a share. The dividend yield is another 2.5%. That gives a possible return of 15% a year through 2020. Right now, BOK has $500 million in excess capital. That's about $7 a share. It could use this to do an acquisition, pay a special dividend, or buy back stock. We don't know which the board will choose. But, this $7 in excess capital adds a margin of safety to the future estimate of value. Between 2015 and 2020, there is a good chance BOK will do something with that $7 a share in excess capital that could add to the stock's returns. Whether BOK Financial will return 10% to 15% a year over the next 5 years depends on the Fed Funds Rate. If the stock price follows reported earnings instead of trying to anticipate normal earnings, it will not move up till after the Fed Funds Rate moves up. So, there is a possible argument against BOK in that the Fed Funds Rate may not rise to 3% by 2020. However, BOK is not especially expensive at a Fed Funds Rate of 0%. It is cheap at a Fed Funds Rate above 0%. So, there is really no argument that BOK is overpriced now. And the argument against BOK being cheap is really an argument about timing rather than occurrence. Many people believe the Fed Funds Rate will stay closer to 0% than to 3% for some months or even years. But, they do not actually believe the Fed Funds Rate will average a number closer to 0% than to 3% in the long-run. For a buy and hold investor, it is the long-term average Fed Funds Rate that matters. So, the speculative aspect of BOK is how long you have to wait for a return on your investment – not whether you will get a return.

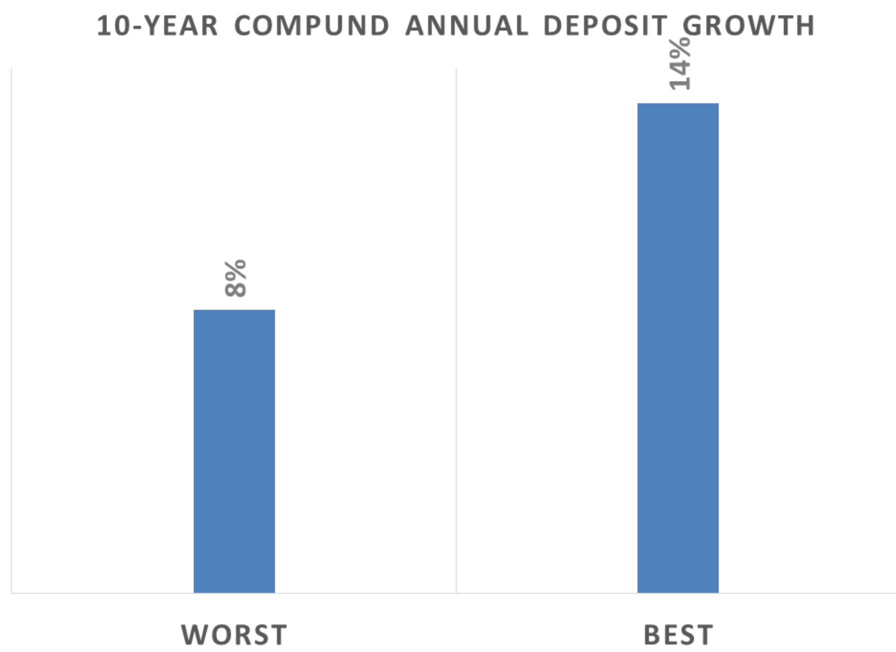
GROWTH

In the Past: BOK Financial Grew Deposits by Over 10% a Year; In the Future: BOK is Almost Certain to Grow Deposits at Least 5% a Year

We are not sure what BOK's growth rate will be. The bank has grown very quickly in the past. This really is a growth stock. And it may continue to be a growth stock. However, we have tried not to count on that in our assumptions of the value of the stock. In our discussion of value, we said that deposits could grow as slow as 5% a year over the next 5 years. That's possible. Generally, bank deposits follow nominal GDP. So, if the economy grows 6% a year long-term, bank deposits grow about 6% a year long-term. If the economy grows 4% a year long-term, bank deposits grow about 4% a year long-term. Quan and I don't have any better insight than you do as to whether 4% or 6% nominal GDP growth is more likely in the U.S. Oklahoma grows about as fast as the U.S. The other states Bank of Oklahoma are in are faster growing economies. For example, if the U.S. grows nominal GDP by 6% a year, we'd expect Texas to grow nominal GDP by at least 7% a year. This is due to population shifts. Sunbelt states like Texas, New Mexico, and Arizona should grow at least 1% faster than the U.S. economy generally. The same may be true of Colorado. Colorado is another destination for many people moving within the United States.

From 1994 to 2014, BOK grew deposits in Oklahoma by about 5% to 6% a year. Deposit growth is somewhat cyclical. When the economy accelerates, deposit growth may be momentarily weak. When the economy slows, it may be especially strong. But, these effects even out within just a few years. So, it's best to use 5-year intervals to measure deposit growth. We have 16 different 5 -year periods to measure deposit growth of BOK in Oklahoma. The slowest was 3.5% annual growth. The fastest was 9.8% annual growth. The mean and median were both 6.4%. Let's be conservative and say that Bank of Oklahoma will grow its deposits in Oklahoma by about the rate of nominal GDP growth in the U.S.

Total deposits in the states BOK are in should grow as fast as national GDP or faster. The question then is whether BOK can grow its market share in these states. Historically, it has. In 1994, BOK had 7.8% deposit share in Oklahoma. In 1999, it had 9.7%. In 2004, it had 13.0%. In 2009, that sank to 10.7%. And then in 2014, it was back up to 13.8%. Bank of Oklahoma only lost market share in Oklahoma during the boom years of 2004-2009. The bank did very well growing deposits. It managed to grow deposits by about 8% a year during that 5 year period. But, total deposits in the state grew 10% a year. That's a very rapid rate of deposit growth. So, BOK's market share performance in Oklahoma has usually been good.



Since 1994, BOK's worst 10-year rolling period for growth in deposits was still 8% compounded annually

There may be some opportunities to acquire banks in Oklahoma. The Oklahoma deposit market is more fragmented than that of neighboring states. In Oklahoma, the top 5 largest banks have 38% of deposits. In Texas, the top 5 banks have 57%. Among the states BOK competes in, the Oklahoma and Arkansas banking industries are especially fragmented. The other states are more consolidated.

BOK grew deposits very quickly in the other states it entered. From 2004 to 2014, it grew deposits in Texas by 10.5% a year. In Colorado, it grew deposits by 15.6% a year over those same 10 years. In New Mexico, it was 8.2% a year. In Arizona, 24% a year. And in Arkansas, it was 16.8% a year. BOK has very low market share in all these states. It has a strong position in Oklahoma. It especially has a very big share of the total deposits in Tulsa. But outside of Oklahoma, BOK has unlimited growth prospects. It is a very small competitor in all of those other states.

BOK Financial uses local names for each state. In Oklahoma, BOK operates under Bank of Oklahoma. In Texas, it is Bank of Texas. In Arkansas, Bank of Arkansas. In Arizona, Bank of Arizona. In New Mexico, it is Bank of Albuquerque. In Missouri, it is Bank of Kansas City. And in Colorado, it is Colorado State Bank & Trust. So, BOK generally presents itself as a regional bank rather than a national bank. However, the products it offers are similar to national banks. Let's look at each of these different product areas now.

The brokerage and trading business grew from $41 million in revenue in 2004 to $134 million in 2014. That is a 12.6% annual growth rate. The transaction card business grew revenue from $65 million in 2004 to $124 million in 2014. That is a 6.7% growth rate. And the asset management business grew revenue from $58 million in 2004 to $116 million in 2014. That is a 7.2% annual growth rate. That last growth rate might be misleading. It is a revenue growth rate rather than an asset growth rate. The wealth management business had lower interest revenue in 2014 ($44 million) than it did in 2006 ($46 million). This is despite growing the deposits in the wealth management business from $1.4 billion to $4.4 billion. So, it's possible that business grew at more like 15% a year even though that is not what you see in the revenue number. Of course, declining stock and bond prices can harm wealth management businesses. So, it is not good to count on having growth in this area during a time when interest rates are rising. But, BOK's past growth record in this area is good. Basically, BOK has been able to grow deposits in every state and to grow every business it is in by more than 5% a year. It has consistently grown faster than nominal GDP. So, the nationwide rate of nominal GDP growth is a good floor for BOK's likely growth rate. It is probably not a good number to use in actually estimating the bank's growth though. This is because BOK is more focused on growth than other banks.

We've only discussed organic growth here. BOK has made some acquisitions in the past. And the company has $500 million in excess capital on hand. The executive compensation plan uses EPS growth relative to peers – not total return of the stock, or dividend growth, or anything like that – so management is incentivized to make an acquisition rather than pay a special dividend. Of course, buying back stock at a good price would also raise EPS. In 2010, BOK's CFO said this about George Kaiser's attitude toward acquisitions: "…we want to remain as a growth company and utilize our capital (for) growth as opposed to pass that back to him through dividends…first and foremost…we want to grow and so if we find the right strategic franchise building opportunity, he would support us in that effort."

BOK's former Chief Operating Officer said this about acquisitions in 2015: "We've got a pretty substantial capital base that we can do acquisitions with where we prefer it to be a cash buyer. We could use our stock if we were forced to but we're a cash buyer. That's our history. That's our preference. We've got north of half a billion (dollars) in liquidity that we could put to work right away…. kind of $500 million to $2.5 billion bank size in… Denver, Kansas City, Dallas, Houston, other markets." However, BOK has not bought a bank since 2007. And it has never done an acquisition as big as $500 million. So, it may use that cash for something else.

In March, the head of investor relations for BOK said: "…we have $500 million or so of excess capital, depending on how you measure it, and a like amount of cash at the holding company to execute on acquisitions. So we would likely be a cash buyer."

And in July, BOK's CEO said: "We remain motivated to efficiently deploy excess capital via share repurchase and M&A as long as prices for both support long-term shareholder value. While we did not buy back shares this quarter, we continue to see share buyback as a significant part of the equation to deploy our excess capital and have approximately 1.3 million shares remaining on our current board authorization." So, BOK may buy back stock instead of acquiring another bank. This would grow deposits per share and earnings per share. But, it would not grow the bank's overall size the way management has preferred to do in the past. At today's low price to normal earnings, we'd prefer BOK used its excess capital to simply buy back stock. However, many other bank stocks are not expensive either. So, any acquisition done with cash would probably not destroy value and it would grow the company.

MISJUDGMENT

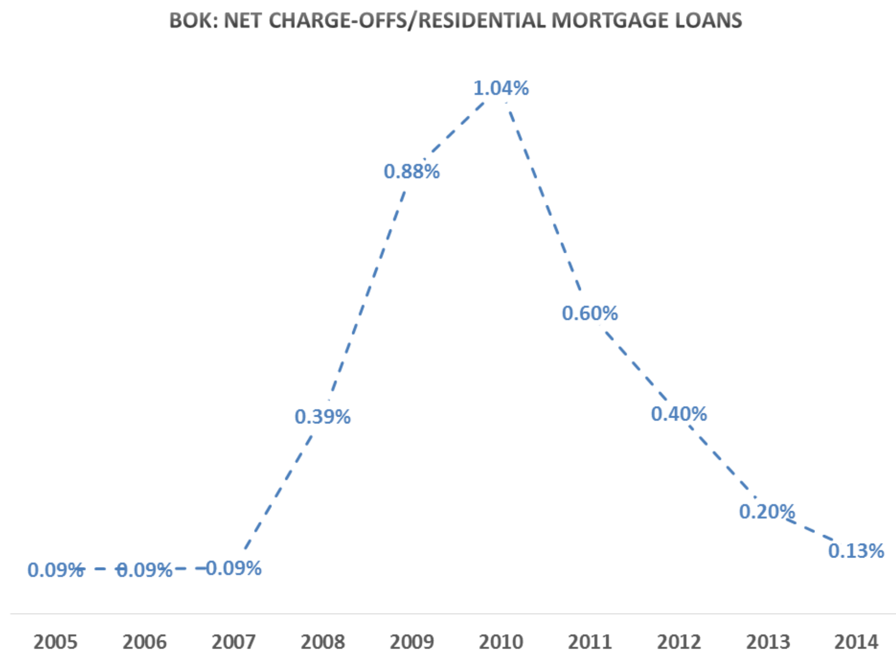
BOK Financial's Controlling Shareholder, George Kaiser, is 73 Years Old

One of the biggest risks with BOK stock is the risk that George Kaiser will one day no longer control the company. He is 73 now. Unlike Frost, BOK does not have a focus on a single state or a single type of financial product. It is diversified by state and by product area. It can make mistakes without the right CEO and the right Chairman. We can't predict when the bank will have different leadership. The current CEO has only been running the company since 2014. However, he was with the company for 20 years. And during all that time, George Kaiser was the controlling shareholder. So, there is continuity of leadership right now. Eventually, there won't be. And that is always a risk.

Because banks lend out customer deposits rather than their own equity – it is always possible that a bank can be wiped out purely through bad lending. BOK has never been a reckless lender. The company has historically had very low loan losses. We might misjudge the future because of the consistency of good results in the past. For example, BOK's losses in its residential mortgage loans were just 0.39% in 2008, 0.88% in 2009, 1.04% in 2010, 0.60% in 2011, and then 0.40% in 2012. That is pretty much the entirety of the financial crisis. Those are not bad losses compared to other banks. And BOK is not at all focused on mortgage lending. Something like energy lending is more their area of expertise.

If we look at energy lending, the 15-year average charge off rate is 0.16% a year. This is much, much lower than other banks charge-off as a percent of their loan portfolios. Of course, most banks don't do much energy lending. So, it is possible that BOK's results are due to especially favorable conditions in energy from 2000 to 2015. Maybe. But, the price of oil was volatile from 2000 through 2015. The price of a barrel of oil ranged from $11 to $140 during those 15 years. In addition to that, there were 6 times when the price of oil dropped 50% within a 6-month time span. Now, this might not matter as much to oil producers and lenders as it does to traders. Producers often hedge their production. So, they are not selling most of their oil at the market price at any one time. If the price of oil is very volatile in the short-term this is not a big problem for them. For example, if oil drops from $100 to $50 a barrel, many producers will actually receive closer to $100 a barrel within the first year of that drop. We can see this by looking at Frost's energy loans. Frost checked how many of its borrowers were hedged and at what prices. Going out 1 to 2 years, a lot of producers had hedged a lot of their production at fairly high prices. So, it may not be enough to look at past price volatility that only lasted for a couple years. Maybe we should only consider periods where oil was at least 50% lower in price than it had been at least 3 years ago. This means we don't really have a good period to look back on except for the 1980s. This was the same as the situation with Frost. You can't really know how bad loan losses will be in the oil business during a bust by looking back at normal times. If we looked at mortgage loan losses at banks from 1985 through 2005, we'd find very, very low loan losses. The period from 2008 on would surprise us. This is because the loans banks made in the early 2000s were much worse than the loans they had made before. Could the same thing have happened during the oil boom as during the housing boom?

We don't know. And we can't know. We can see that in areas where other banks lost a lot of money – BOK did not. So, we can see that BOK didn't participate in making a lot of bad mortgage loans. We also know what prices BOK used to determine collateral values and what loan to value ratios it used. These are more conservative than what mortgage lenders used during the housing boom. But, we don't know enough about energy lending to really know if BOK's loan losses will be low during a crisis. We do have a 20-year history to look at. Without the 2008 fraud loss, BOK charged off a total of 0.06% of the value of its energy loans from 1994-2014. Basically, it had almost no losses. If we are wrong about how bad BOK's energy loan losses can be, it's likely because the last 20 years are not a long enough reference period for a commodity with such a long cycle as oil. Whatever BOK's loan losses in energy are – they will only hit the bank's assets at about one-tenth that rate. This is because energy loans are



Even BOK Financial's residential mortgage loan charge-offs were manageable during the housing bust – peaking at 1.04% in 2010

only about 10% of BOK's total earning assets. So, if we assume BOK will charge off 25% of its entire energy loan portfolio, that would be about 2.5% of the bank's earning assets. Even with the fraud loss, BOK only charged off 0.21% of its energy loans over the last 10 years. So, charging off anything like 25% of its energy loans would mean a more than 100 times spike in losses compared to the past. Is this realistic? No. But, BOK could theoretically lose as much as $1.4 billion before it would need to be recapitalized. Even something like a 25% charge-off rate in the energy loan portfolio would cause only something like an $800 million loss. BOK has excess capital. We may not be able to predict how big energy loan losses could possibly get in the worst case scenario for oil prices. However, we can say that over the last 20 years, BOK's energy loan losses have been about 0.2% a year or lower. And, we can say that BOK could survive having to charge off 25% of its energy loans. To put this in perspective, that would be like charging off more than 5 times everything it charged off over the last two decades in its energy portfolio. It would literally be 100 times the past annual charge-off rate. And it would be survivable. So, while we can't give any decent estimate of what BOK's loan losses will look like in an oil bust – we think we can say that they won't matter to a long-term buy and hold investor. BOK might not have much in the way of energy losses at all. If it does, those losses will be a short-term drag that lasts a few years. The bank can survive even incredibly big losses in energy lending. And there is no reason for us to believe losses big enough to threaten the bank are possible in that energy loan portfolio. But there was an oil bubble just like there was a housing bubble. And banks lost a lot of money in the aftermath of the housing bubble. It is possible energy lenders made the same mistakes mortgage lenders did. However, even if they did, we think they can survive.

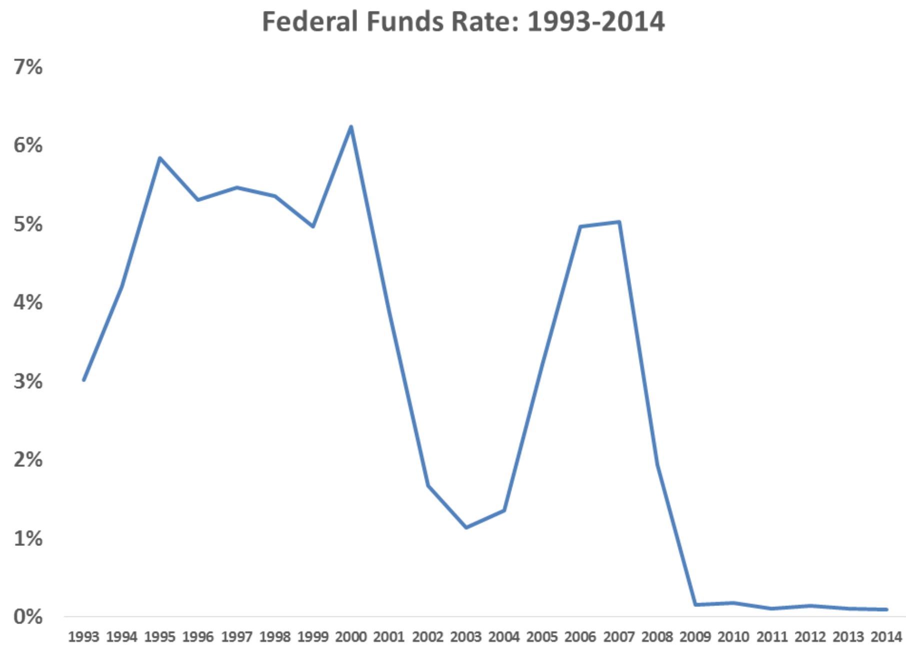
Speaking of housing, BOK has increased its residential mortgage lending since the crisis. BOK sells conforming loans to government sponsored entities. It keeps jumbo mortgages on its balance sheet. It also has about three weeks of conforming mortgages on its balance sheet at any one time as well. Charge-offs in residential mortgages before 2008 and after 2012 were less than 0.40%. During the crisis, BOK's charge-offs spiked to 0.88% in 2009 and finally peaking at 1.04% in 2010 before declining to 0.60% in 2011 and 0.40% in 2012. Residential mortgages were not a focus for BOK before the crisis. So, it's possible that they are taking risks now that they didn't take in the past. But, it seems unlikely. We have the evidence of the charge-offs during the crisis. The very worst year was 1.04%. That's mild compared to a lot of the residential mortgage loan portfolios at other banks. We also know that mortgage lending in the industry generally is a lot tighter. The greatest risk for a lender to make a mistake is during a period when competitors are greedy rather than fearful. While lenders are hardly fearful anymore, they have not loosened credit requirements to the kind of levels we saw in the early 2000s. And BOK didn't have large losses when many other banks did. Residential mortgages are less than 13% of BOK's loan portfolio. And the loan portfolio is only a little over 50% of earning assets. So, even if BOK has problems in its residential mortgage loans – it is unlikely to have larger losses as a percent of its total assets than other banks.

CONCLUSION

BOK is Normally Priced on Current Earnings; It is Cheap Based on Normal Future Earnings

BOK is normally priced versus current earnings. But current earnings are much lower than earnings would be at a normal Fed Funds Rate. This makes BOK an attractive investment to hold from now through 2020. BOK may not make a good short-term speculation. Because the bank's cheapness will only be obvious a few years after the Fed Funds Rate is increased.

BOK may not be a better stock to buy than Frost. Frost is more focused. BOK is more diversified. Frost has a better brand name. This is because it focuses on the state of Texas only and because it focuses on presenting its image as being one of customer service. BOK's competitive position is not as distinctive. It has now grown into several different states. And it has added product areas while Frost has actually exited some (like mortgages and credit cards).



The price of BOK stock only appears reasonable right now because the Federal Funds Rate is unreasonable right now

Frost and BOK have some similarities. They are both regional banks. They both have a bigger focus on commercial and industrial loans than you find at most banks. They have a low funding cost, because of the high amount of transaction accounts. They both own a lot of securities and make fewer loans than banks with the same amount of deposits. They also have low net non-interest expense. So, the overall costs for both Frost and BOK are low.

BOK has grown very fast. It may grow quickly in the future. Probably not as quickly as it once did. But, it could grow faster than other banks. This is difficult to predict. It is a speculation on the management team. BOK is much more dependent on key people than Frost. This is because BOK probably would not look the way it does today unless it were for George Kaiser's involvement with the bank. BOK had one controlling shareholder and one CEO for a long time. There isn't much evidence that the bank's growth was due to anything other than management's focus on growing the business. BOK grew because it actively sought to grow. It picked acquisitions to make in specific states and specific product areas. And then it focused on growing those areas faster than they would have grown under a different owner. BOK has lower deposit share in most markets than Frost does. It has big deposit share in Tulsa. But, it is not especially large elsewhere. BOK uses different names in different states. So, Frost's growth advantage in the future could come from its location in Texas and from the goodwill attached to its brand there. BOK's growth advantage would have to come from the organization itself. Management is always important at a bank. But, management at BOK may be more important than management at Frost. Perhaps culture rather than management is what matters at Frost.

BOK's track record is certainly no worse than Frost's. In fact, it is better in some respects. We talked about the growth numbers for deposits in individual states and in specific business areas. And BOK has made a huge change in its deposit base.

From 2004 to 2014, non-interest bearing deposits rose from 19% of total deposits to 38% of total deposits. Transaction deposits rose from 41% of deposits to 48% of deposits. And time deposits dropped from 38% of deposits to 13% of deposits. BOK's deposit base is now very good. It does not fund itself with quite as much deposits relative to earning assets as Frost does – but almost no bank funds itself as fully with deposits as Frost does. BOK is now much closer to Frost in terms of funding than it was 10 years ago.

Like Frost, BOK's great improvement in intrinsic value over the last 10 years has been obscured by declining interest rates. In the Frost issue, we talked about the way that Frost's deposits tripled when earnings barely budged at all. If the market pays attention to reported EPS, it can miss a big change in intrinsic value. Here, the improvement that is obscured by low interest rates is the change in funding mix. BOK relied on too many time deposits in 2004. At that time, 38% of total deposits were time deposits. And BOK was paying about 1.1 times the Fed Funds Rate for those deposits. Transaction accounts and non-interest bearing accounts cost less than two-thirds of the Fed Funds Rate. In 2004, non-interest bearing accounts and transaction accounts together were 60% of deposits. This 60% of deposits is really where all the economic value in the bank comes from. Today, BOK's non-interest bearing and transaction deposits are now 86% of total deposits. This means the quality of BOK's growth in deposits per share from 2004 to 2014 was especially high. A bank's value increases over time along with its deposits per share and the rate it can earn on those deposits per share in a normal interest rate environment. Over the last 21 years, BOK grew deposits per share by 10% a year. That means the bank increased intrinsic value per share by 10% a year over two decades. More importantly, it also improved its earning power per dollar of deposits. Like other good banks, BOK Financial was able to lower its operating cost (this is the net non-interest expense portion of the business) as it increased in scale. Many large banks were able to accomplish that. However, many large banks did not improve their funding mix over time the way BOK did. This improvement over the least 10 years makes BOK a lot more like Frost today.

Which stock is better? Or should you buy them both? There is certainly nothing wrong with buying equal amounts of Frost and BOK. They are similar in terms of future growth prospects. They are almost identical in terms of price relative to normal earnings. I am not sure you will get a lot of diversification by buying both of them though. The advantage in buying both BOK and Frost is that you can diversify away any specific business risk of the organization itself. So, something like management risk can be reduced by buying two banks instead of one. That's true. However, I'm not sure how big that risk is. The risks many investors who might be wary of Frost or BOK look at would be things like the risk of the Texas economy having problems, the risk of losses in energy loans because of the oil bust, the risk of mark to market losses on the securities portfolio, and the risk that the Fed Funds Rate may not be increased at all for years to come.

Both banks share these risks. Frost is 100% in Texas. BOK is 78% in Oklahoma and Texas. You're not reducing geographic risk much by buying both of them. Both Frost and BOK have more securities than most banks. This means they will have large mark to market losses (which they won't have to include when calculating their capital ratios) when interest rates rise. BOK's bond portfolio is a little shorter term than Frost's. And all banks will have mark to market losses when interest rates rise. Also, banks will benefit a lot from an interest rate rise in terms of increased earning power. So, I am not sure that the negative headlines from large mark to market losses are worth worrying about. Certainly, they shouldn't bother a long-term investor.

That is the important point here. Unless you are willing to commit to owning BOK through 2020, you shouldn't think about buying the stock at all. The price of BOK and other banks is determined each day in the market by institutions who may be more concerned with trading on their expectations for the next Fed meeting and whether there will be a 25 basis point increase in the Fed Funds Rate in December of 2015 or March of 2016. Honestly, that doesn't matter. You shouldn't care about 25 basis points. You should care about 3 full percentage points. And you shouldn't care about what the Fed Funds Rate is in 2016. You should care about what the Fed Funds Rate is in 2020. A stock is an asset with a perpetual coupon of sorts. It doesn't make sense to obsess about exactly what it will earn and pay out in dividends in the next couple years.

It is difficult to say whether Frost or BOK is the better stock. Historically, they have both done a good job growing deposits. They are both about equally cheap. And they have both been conservative lenders. I think Quan prefers Frost over BOK. And I know I much prefer Frost over BOK. But, I would have a hard time suggesting that someone else buy just Frost rather than both BOK and Frost. I think most investors would be happiest buying both BOK and Frost. But, only if they intend to hold both stocks through 2020. Buying BOK to sell it in a year or two would really just be a speculation on interest rates. So, consider buying both BOK and Frost at the same time. But, only if you are committed to holding both banks for the next 5 years.

BOK Financial (NASDAQ: BOKF)
Appraisal: $109

Price-to-Appraisal: 63%

Interest-bearing Deposits	66%
Weighted Average Margin	
Free Funding	1.09%
+ Commercial Demand Deposits	0.59%
+ Interest-bearing Deposits	1.92%
= Weighted Average Margin	3.60%
Return on Earning Asset	
Weighted Average Margin	3.60%
- Operating Costs	0.89%
= Return on Earning Assets	2.71%
Pre-tax Owner Earnings	
Earning Asset	$27,650
* Return on Earning Assets	2.71%
= Pretax Owner Earnings	$751

Business Value

BOK's business value is $7,510 million.

- Pre-tax owner earnings are $751 million
- Fair multiple = 10x pre-tax owner earnings
- $751 million * 10 = $7,510 million

Fair Multiple

BOK is worth 10x pre-tax owner earnings

- BOK can grows deposit by 6-7%
    - While returning 50% of earnings to shareholders
- Investors can make 9-10% return by paying 15x after-tax earnings
    - 3.33% dividend yield
    - 6-7% earning per share growth
- 15x after-tax owner earnings equals 10x pre-tax owner earnings

Share Value

BOK stock is worth $109 a share

- Business value is $7,510 million
- Equity Value = $109/share
    - 68.93 million outstanding shares
    - $7,510 million / 68.93 million = $109

Price to Appraisal

BOK stock is priced at 64% of its appraisal value.

- Business Value = $7,510 million
- Market Cap = $4,825 million
- Price-to-Appraisal = 64% ($4,825 million / $7,510 million)

	Price/Earning Assets	Price/Deposit	Price/EBT	Price/Owner Earnings
Frost	0.17	0.19	9.71	6.17
Commerce Bancshares	0.20	0.23	11.18	6.51
Prosperity Bancshares	0.20	0.22	8.57	8.03
U.S. Bancorp	0.22	0.28	11.12	8.33
First Financial	0.37	0.44	15.25	11.94
Minimum	0.17	0.19	8.57	6.17
Maximum	0.37	0.44	15.25	11.94
Median	0.20	0.23	11.12	8.03
Mean	0.23	0.27	11.17	8.20
STDEV	0.08	0.10	2.52	2.29
CV	34%	37%	23%	28%
BOK Financial (Market Price)	0.17	0.23	10.72	6.43
BOK Financial (Appraisal Value)	0.27	0.36	16.72	10.03

ABOUT THE TEAM

Geoff Gannon, Writer

Geoff is a writer, blogger, podcaster, and interviewer. He has written hundreds of articles for Seeking Alpha and GuruFocus. He hosted the Gannon On Investing Podcast, The Investor Questions Podcast, and The Investor Questions Podcast Interview Series. He wrote the Gannon On Investing newsletter in 2006 and two GuruFocus newsletters from 2010-2012. In 2013, he co-founded The Avid Hog (the predecessor to Singular Diligence) with Quan Hoang. Geoff has been blogging at Gannon On Investing since 2005.

Quan Hoang, Analyst

Quan is a stock analyst. Quan won first prize in Vietnam's National Olympiad in Informatics in 2006. He graduated from Manhattanville College in 2012 with a B.A. in finance and a minor in math. In 2013, Quan co-founded The Avid Hog (the predecessor to Singular Diligence) with Geoff Gannon.

Tobias Carlisle, Publisher

Tobias Carlisle is the founder and managing director of Eyquem Investment Management LLC, and serves as portfolio manager of the Eyquem Fund LP and the separately managed accounts.

He is best known as the author of the well regarded website Greenbackd, the book Deep Value: Why Activists Investors and Other Contrarians Battle for Control of Losing Corporations (2014, Wiley Finance), and Quantitative Value: a Practitioner's Guide to Automating Intelligent Investment and Eliminating Behavioral Errors (2012, Wiley Finance). He has extensive experience in investment management, business valuation, public company corporate governance, and corporate law.

Prior to founding Eyquem in 2010, Tobias was an analyst at an activist hedge fund, general counsel of a company listed on the Australian Stock Exchange, and a corporate advisory lawyer. As a lawyer specializing in mergers and acquisitions he has advised on transactions across a variety of industries in the United States, the United Kingdom, China, Australia, Singapore, Bermuda, Papua New Guinea, New Zealand, and Guam. He is a graduate of the University of Queensland in Australia with degrees in Law (2001) and Business Management (1999).

SINGULAR DILIGENCE

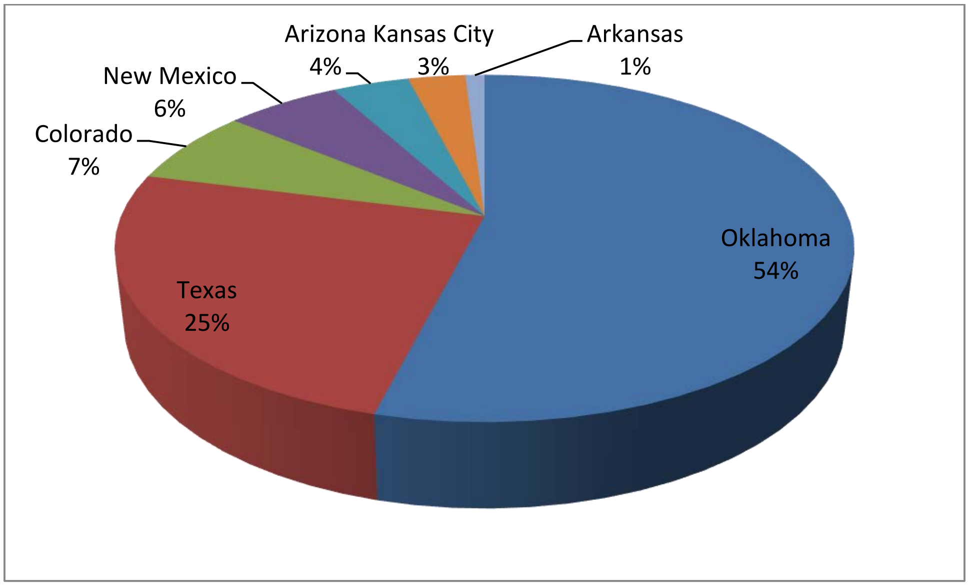
NOTES

BOK Financial

(NASDAQ: BOKF)

Overview

BOK Financial Is the Creation of George Kaiser



Almost ½ of BOK's deposits are outside of Oklahoma

- History
  - BOK traces its roots to the Exchange National Bank of Tulsa
    - Formed in 1910
    - By four oilmen
      - Including Harry Sinclair
        - He founded Sinclair Oil
        - Sinclair Oil was ranked the 7th largest oil company in the U.S.
          - The largest in the Midwest
      - They bought the failed Farmers National Bank in Tulsa
      - Sinclair became the bank's president
  - During the Great Depression, several oilmen pumped $18 million of their own money into Exchange National Bank
    - Including William G. Skelly and J.A. Chapman
      - Skelly founded Skelly Oil Company
        - Was one of the strongest independent producers of oil and gas in the U.S.
    - The cash injection helped the bank to keep it afloat
  - It was a major player in early 1930s oil boom

- It was reorganized as the National Bank of Tulsa (NBT)
  - In 1933
- NBT changed its name to Bank of Oklahoma
  - In 1975
- Bank of Oklahoma acquired Fidelity of Oklahoma in early 1980s[1]
- This acquisition gave Bank of Oklahoma a lot of bad loans
- The oil price plummeted in 1986
  - Fell from $26 to $10
    - Equivalent to falling from $58 to $22 today
  - => crisis in Texas and Oklahoma
  - Over 130 banks in Oklahoma failed
  - Bank of Oklahoma received assistance from FDIC
    - All of BOK's problems were confined to loans made by Fidelity of Oklahoma
- George Kaiser bought Bank of Oklahoma from FDIC
  - In 1991
  - For $61 million
  - Formed BOK financial
    - He injected $10 million additional capital to BOK
  - Stanley Lybarger was appointed as CEO
    - Lybarger had been COO
    - Lybarger as the "fixer" behind problems of Bank of Oklahoma
    - Kaiser was impressed by Lybarger's work in fixing problems at Fidelity of Oklahoma

- George Kaiser is a billionaire
  - About $10 billion net worth
  - He built his family oil business into one of the largest private energy company in the U.S.
  - He is widely regarded as the smartest oilman in the business[2]
    - The most astute investor
    - (according to Chesapeake's former CEO, Aubrey McClendon)
- BOK started its expansion under Kaiser's control
  - Spread revenue stream[3]
    - By building out diverse fee businesses
    - => depend less on uncontrollable factors
      - Interest rates

        - Investment market performance
        - Commodity prices
        - General economic conditions
  - Entered adjacent states
    - Through acquisitions of small community banks
      - Added new products to these banks
      - Grew local market share
  - Assets grew by over 15 times
    - 1991: less than $2 billion
    - 2015: $31 billion
  - Most of growth was organic
    - Acquired less than $3 billion assets
- Mr. Kaiser still control 68% of BOK
- BOK today has banking operations in 7 states
  - Oklahoma: **54%** of BOK's total deposits
  - Texas: **25%**
  - Colorado: 7%
  - New Mexico: 6%
  - Arizona: 4%
  - Kansas City: 3%
  - Arkansas: 1%
- BOK makes about 50% of revenue from fee-based businesses
  - Brokerage & trading: **10%** of total revenue
    - Institutional and retail sales
    - Investment banking
    - Financial risk management services
      - Interest rate hedge
      - Commodity hedge
      - Foreign exchange hedge
      - Etc.
  - Mortgage: **10%**
    - BOK originates mortgage loans and sell to U.S. Government Agencies
      - Self-originates
      - Buys loans from correspondent lenders
      - Originates online
    - BOK services the loans it sells to U.S. Government Agencies

- Transaction card: **9.6%**
  - Offers ATM network to 356 clients
    - TransFund is among the top 10 network in the U.S.
      - 2,080 ATMs
    - Operates in 22 states
      - More than 50% of clients outside Oklahoma
    - Clients include
      - 211 banks
      - 136 credit unions
      - 6 convenience store partners
    - Processed 496 million electronic funds transfers in 2014
  - Process payments for 6,944 merchants and cash advance locations
- Trust fees: **9%**
  - Personal trust
  - Estate and retirement planning
  - Investment management
  - Retirement and institutional benefits
  - Corporate trust
  - Etc.
  - BOK has **$69 billion** asset under management or in custody
    - **$39 billion** in fiduciary assets
- Service charges: **7.1%**
- Other: **3.6%**

- The diverse array of products and services allows BOK to gain market share
  - Compete well with
    - National banks
      - BOK's products match up well
      - But BOK offers better services
    - Regional banks
      - Don't have the product depth that BOK has
- Deposit per share grew 10% annually over the last 21 years
  - 1994: $44 per share
  - 2014: $295 per share
- BOK can continue growing in high single digits for many years
  - Its local market share is still tiny in most market
  - Oklahoma: 14% market share

        - Tulsa: 31%
        - Oklahoma City: 11%
    - Dallas-Fort Worth-Arlington, Texas: 1.77%
    - Houston-The Woodlands-Sugar Land, Texas: 0.91%
    - Denver-Aurora-Lakewood, Colorado: 2.05%
    - Phoenix-Mesa-Scottsdale, Arizona: 0.99%
    - Kansas City, Missouri-Kansas: 0.84%
    - Fayetteville-Springdale-Rogers, Arkansas-Missouri: 3.41%

[1] “Opportunity didn't come without stress. One of his assignments in the 1980s was to build a loan production office in Oklahoma City-BOK's first foray into the state capital-to bulk up a sagging correspondent banking division. While he was there, the management of **BOK made the fateful decision to merge with the state's No.5 institution, Fidelity of Oklahoma**.

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Following the Fidelity merger. Lybarger was tasked with reviewing the books, and it turned him ghost white. **He determined that BOK had just bought itself $20 million to $30 million in embedded, and heretofore unrecognized, losses**. "**That bank had a big concentration of bank-stock loans**." Lybarger recalls. Although most of the loans were from rural communities within the state, "there were a lot of them."

Bank of Oklahoma fired Fidelity's management and asked Lybarger to rebuild that operation. But BOK was still in trouble over the Fidelity mess, and the oil bust that struck the Southwest region began taking a worsening toll. **More than 130 Oklahoma banks failed in the 1980s, and BOK might have been one of them had the FDIC not allowed it to continue operating under a rare open-assistance package**. **Lybarger says the agency agreed to the arrangement because examiners saw the problems were confined to the Fidelity loans**.” – *Lifetime Achievement: Stanley Lybarger*, Glen Fest, American Banker Magazine, December 2013

[2] “Tom Ward, chairman and chief executive officer with SandRidge Energy Inc., based in Oklahoma City, said he has sought Kaiser's advice numerous times throughout his career, calling him "**the most astute investor I've ever met.**"

"I look at George Kaiser as being probably the most influential businessman in my life as far as someone I could look up to and take his advice not only about business but how he lives," Ward said.

McClendon said Kaiser "is widely regarded as the smartest oilman in the business."

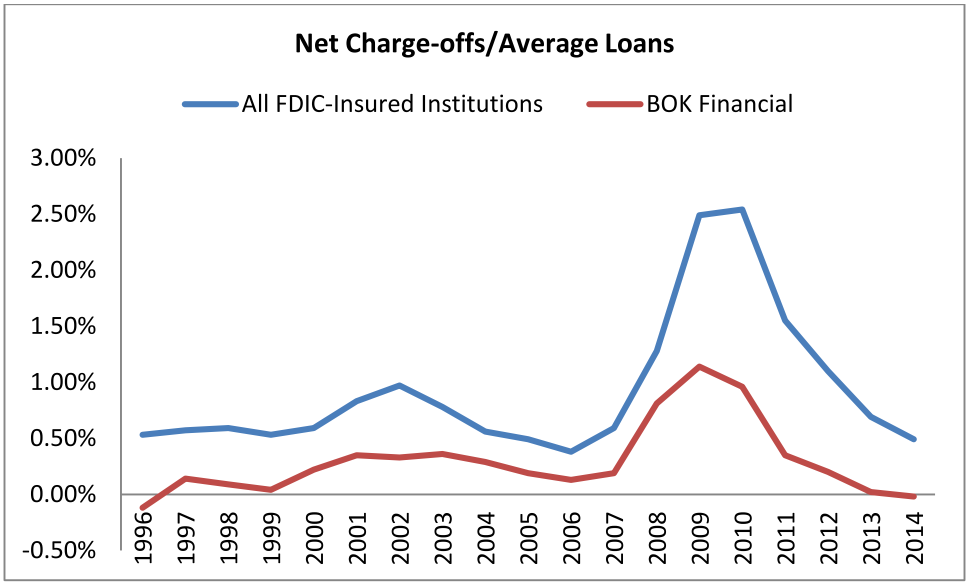
"**He went to work early in his life at a small, family-owned oil company and built it through hard work, good decision-making and reasonable risk-taking into one of the largest private producers of oil and natural gas in the industry."**” – *George Kaiser Makes Mark on Tulsa*, Tulsa World, 16 October 2011

[3] "**Spread revenue always will be a key element in building shareholder value for us**, but unlike many banks, we derive nearly half of our revenue from fee businesses. **It's really been a key strategy since BOK Financial was formed in '91**. **We wanted to build out diverse fee businesses**. **It's a great advantage for us in an industry where most lines of business are linked to factors that are generally beyond our direct control -- interest rates, investment market performance, commodity prices, performance of key industry segments, and just general economic conditions**.

The objective here was threefold. **It was to provide continuity of earnings during poor economic times**; second, it was to propel **earnings growth faster than peers during economic expansion**; and, third, was to have **multiple business units fully capable of acquiring business and quality relationships without reliance on other business units to refer.**" – Steve Bradshaw, BOK's CEO, Morgan Stanley Financials Conference, 11 June 2013

Durability

Conservative Lending and a Broad Array of Products Create BOK's Durability



BOK's net charge-offs is about 1/3 of the industry average

- **Biggest Negative**
  - BOK has big energy exposure
  - BOK is expanding mortgage banking
- BOK has big energy exposure
  - Energy accounts for **19.2%** of total loans
    - $2.9 billion
    - **10.5%** of total earning assets
  - Energy lending breakdown
    - Oil & gas producers: 85%
      - 61% of production loans are secured by oil
        - The rest is by gas
    - Energy services: 8%
    - Midstream: 4%
    - Wholesale and retail: 3%
  - BOK has been in the energy lending business for over 100 years
    - BOK traces its beginning to Exchange National Bank
      - Founded in 1910
        - By Harry Sinclair and other oilmen

        - During the oil boom
    - Exchange National Bank focused on energy lending
- BOK has very low charge-offs for energy loans
  - Without the 2008 fraud loss
    - 10-year average: 0.09%
    - 15-year average: 0.08%
    - 20-year average: 0.06%
  - With the 2008 fraud loss
    - 10-year average: 0.21%
    - 15-year average: 0.16%
  - The low charge-offs was achieved despite great price volatility
    - Oil price ranged from $11 per barrel to $140 per barrel
      - Over the last 20 years
    - There have been 6 oil and gas downturns since 2000
      - Price dipped by 50% over a 6-month period
- BOK survived the energy crisis in 1980s
  - Over 130 banks in Oklahoma failed
  - BOK had to receive assistance from FDIC
    - But all of BOK's problems were confined to loans made by Fidelity of Oklahoma[1]
    - BOK acquired Fidelity of Oklahoma in early 1980s
- BOK mostly lends to producers
  - Cash flow is more stable than service companies
  - Producers usually hedge oil prices
- BOK lends only against producing reserves[2]
  - Doesn't lend against up and developed reserves
  - Requires a minimum of 10 wells in the collateral package
    - Doesn't permit any single well to equal more than 20% of the total collateral value
  - BOK has in-house engineers[3]
    - 9 reservoir engineers
    - 4 engineer techs
    - They appraise collateral values in the space
  - Lends only 50-60% of collateral value[4]
    - BOK has a price deck in determining collateral value
      - Usually market price of oil and gas
        - But the price deck is capped at $85

            - Even if oil price is over $100 per barrel
        - BOK usually assume
            - 3% price inflation
            - 9% discount rate
    - BOK re-determines collateral value every 6 months
    - BOK performs stress test regularly
        - Example:
        - BOK used $55 oil price for stress test in May 2014
            - Oil price were about $100 per barrel
        - BOK used $40 oil price for stress test last quarter
- The chairman is actively involved in the company
    - George Kaiser has an oil & gas empire
        - He's worth $10 billion
    - He is widely regarded as the smartest oilman in the business[5]
        - The most astute investor
        - (according to Chesapeake's former CEO, Aubrey McClendon)
    - He makes calls and speaks to BOK's energy clients[6]

- BOK manages risks by maintaining "balance"
    - BOK keeps CRE loans less than 25% of total loans
        - (Commercial Real Estate loans)
        - BOK is cautious of CRE after observing problems in 1980s[7]
        - BOK could have been much bigger if it wanted to focus on CRE growth[8]
            - BOK just didn't do that
            - Grew CRE proportionately to the rest of BOK's loans
    - Fee incomes
        - Fee incomes are **49.2%** of total revenue
            - Brokerage & trading: 10%
            - Mortgage: 10%
            - Transaction card: 9.6%
            - Trust fees: 9%
            - Service charges: 7.1%
            - Other: 3.6%
        - Most banks have less than **1/3** of revenue from fee income
        - BOK's goal multiple business units that can growth on their own[9]
            - Without reliance on referrals from other business units

        - Fee incomes are more stable than interest income
        - => less pressure to take risk when interest rate is low
    - Investment portfolio helps reduce asset sensitivity
        - BOK has a lot of noninterest-bearing liabilities
        - Most of loans have variable rates
        - => assets re-price faster than liabilities
        - => BOK invest in fixed-rates securities to neutralize sensitivity
            - While maintaining durations between 2 and 3 years
        - => BOK's net interest spread is more stable than peer
            - Net Interest Spread = Yield on Earning Assets – Cost of Interest-bearing deposit
            - Net interest spread was about 3.07% since 1993
                - Min: 2.53%
                - Max: 3.62%
                - Median: 3.07%
                - Mean: 3.06%
                - Standard Deviation: 0.26%
                - Variation: 0.08 (very stable)
- BOK is a conservative lender
    - Example in energy
        - Lend mostly to producers
        - Lend only against producing reserves
        - Lend 50-60% of collateral values
        - Perform stress tests regularly
    - Example in CRE
        - Performs stress tests regularly
        - Assumptions[10]
            - 5% increase in interest rates over a 24 month period
            - Normalized cap rates
            - Normalized occupancy rates
                - Despite limited vacancy in the book and markets
    - Never had exposure to subprime mortgages
        - For both mortgage loan origination and securities portfolio
    - Sells most fixed rate, conforming loan to U.S. government agency
    - Retain most of nonconforming and adjustable-rate mortgage loans[11]
        - Like jumbo mortgage loans
        - Serves very rich customers

                - Over 720 FICO scores
                - A maximum debt-to-income ratio of 38%
            - These loans are to support customers relationship
                - Like management of commercial banking customer
    - Developed specialty lending units
        - Energy
        - Healthcare
            - BOK used to have a decentralized approach to healthcare lending[12]
                - Wasn't strong
                - But BOK developed some expertise
                - And want to oversee some risks inherent in the business
                    - => organize the business similarly to energy
            - This business requires some expertise in[13] [14]
                - Construction of facilities
                - Reimbursement in each state
                - Stick to the top third operators
    - BOK's loan portfolio breakdown
        - Commercial and Industrial: **65%**
            - Or $9.8 billion
            - Energy: 19.2%
            - Services: 18.8%
            - Wholesale/Retail: 9.1%
            - Manufacturing: 3.8%
            - Healthcare: 10.9%
            - Other C&I: 2.9%
        - CRE: **20.1%**
            - Or $3 billion
            - 25% of CRE loans are owner-occupied
        - Residential mortgage: **12.5%**
            - Or $1.9 billion
        - Consumer loans: **2.8%**
            - Or $430 million
    - Charge-offs is low compared to the industry
        - Industry's average net charge-offs is **0.93%** since 1996

- (All FDIC-insured institutions)
- BOK's average is just **0.30%**
- The industry's net charge-offs was about 2.5% in 2009-2010
  - BOK's net charge-offs was about 1%
- BOK was the biggest bank to decline TARP
- BOK's lowest pre-provision return on earnings asset is **1.78%**
  - BOK's highest charge-offs/average loans was **1.14%**
  - Loans is just about 53% of earning assets
  - => BOK can withstand **2.15%** charge-offs before making any loss
- BOK has $2,945 million tangible equity
  - Total assets are $30,726 million
  - => can lose **$1.4 billion** and still have over 5% tangible equity/assets
    - Equals to over **9% loss** in the loan portfolio

- There's risk of accounting loss in the securities portfolio
  - BOK's securities portfolio is about $10.8 billion
  - Credit risk is minimal
    - Almost all of the portfolio is
      - US treasury
      - Prime MBS of U.S. government agencies
  - Duration is 3.2 years
    - Duration may to extend to 3.6 years if interest rates increases by 2% suddenly
      - Because there will be fewer mortgage prepayments
  - 3% increase in interest rates may result in **$1.2 billion** account loss
    - But BOK can afford holding the securities to maturities
  - BOK doesn't have to mark to market in calculating capital ratios
- One risk is that BOK got very big into mortgage
  - BOK took advantage to expand mortgage banking
    - When others walked away from the business after 2008
  - Mortgage Banking Revenue
    - 2006: $27 million
    - 2012: $169 million
      - Thanks to the refinancing boom
    - 2014: $109 million
  - Mortgage loans funded for sale
    - 2006: $766 million

        - 2014: $4,477 million
    - Outstanding principal balance of mortgage loans serviced for others
        - 2006: $4,989 million
        - 2014: $16,163 million
    - From 2008 to 2012, BOK added more than 150 originators[15]
    - BOK got into new mortgage originating channels
        - Correspondent channel
            - Buy loans from other banks or credit unions
        - HomeDirect mortgage
            - Sells online
    - It can be a good business if done conservatively
        - Risk is low
            - BOK doesn't make any subprime loans
            - Sells to U.S. government agencies quickly
                - Turns about 17 times a year
                - Or holds mortgage loans for 3 weeks
            - Underwriting and collection can be done from afar for prime mortgage loans
                - Documents can be verified
                - Local appraisers can be hired
        - Capital requirement is low
            - This business is labor intensive
            - Fixed investment is low
            - The main capital requirement is mortgage loans
                - Yield on mortgage loans is better than C&I loans
            - => ROIC would be high if origination and servicing operations make positive income
        - The business requires some scale
            - Mortgage servicing needs support of origination capabilities[16]
                - Otherwise, mortgage servicing loses revenue stream due to refinancing
            - Mortgage servicing and refinancing support originations
                - Provide stable revenue
                - Refinancing is about 30-40% of production in an normal years
                    - => having a customer base is important

- Example:
- BOK acquired $4.2 billion in mortgage servicing rights[17]
  - In 2010
  - From a distressed seller
  - An opportunity to expand BOK's origination platform in New Mexico
  - Increase mortgage servicing revenue
  - Develop relationships with 34,000 additional mortgage customers
  - Hired 29 mortgage professionals
    - 22 originators and sales managers
    - Added only 6 servicing employees[18]

- Small banks don't want to invest in
  - Staffs needed for compliance[19]
  - Servicing capability
- Small banks don't generate enough volume quickly to sell directly to GSEs

- Competition in correspondent business is intense
  - BOK focuses on relationship
    - BOK pledges not to cross-sell other financial products to mortgagers of the loans it buys
    - BOK pledges to refer to original banks if customers want to refinance
  - This can be a niche
    - Some banks may care more about relationship than price
    - Frost is an example:
    - Frost partners with Cornerstone to offers mortgage loans to its customers
      - Frost gets no fees
      - Frost just doesn't want a lack of mortgage loans hurt its relationship with customers

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[1] "Opportunity didn't come without stress. One of his assignments in the 1980s was to build a loan production office in Oklahoma City-BOK's first foray into the state capital-to bulk up a sagging correspondent banking division. While he was

there, the management of **BOK made the fateful decision to merge with the state's No.5 institution, Fidelity of Oklahoma**.
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[2] "At quarter end our energy portfolio was $2.9 billion, of this 86% or $2.5 billion was exploration and production or E&P. 8% or $222 million was energy services, 3% was midstream, and 3% was wholesale and retail energy. We've long focused on E&P as the safest place to land in the energy sector. As we have discussed with investors we had a long track record of strong asset quality in this business. **We typically advanced only on proving producing reserves, not up and developed reserves**. **We have a team of nine reservoir engineers and four engineering techs on-staff perform our own independent analysis of the declined turfs and the underlying collateral value. Our policy requires a minimum of 10 wells in the collateral package; it does not permit any single well to equal more than 20% of the total collateral.**

During the run up in oil to over $100 per barrel, we capped the pricing on the forge strip at $85. We revalue the collateral set every six months in line with the industry norms. For borrowers bound to have inadequate collateral to support the loan at that time, that you either the over advance over six months or plus additional collateral to support the loan. We also reset our price deck, no less frequently than monthly with mid-month revisions as necessary based on the movement in commodity prices." – Stacy Kymes, BOK's Chief Credit Officer, 2014 Q4 Earning Transcript

[3] "Let's talk about energy lending for a moment. **That is a core competency for BOK Financial and dates back to our formation of the bank back in the early 1900s**. We are known nationwide as one of the top energy lenders for oil and gas producers. **We do business in literally every oil and gas producing region in the continental U.S**. We have a tried and proven discipline for lending to energy producers and as a result, this has been one of our top performing portfolios for decades demonstrated by less than ten basis points of net chargeoffs over the past ten years.

Some of the things that we feel we do differently in this space, one is we **lend only on producing premium reserves**. Second, we have an **in-house engineering team and their job is to independently appraise collateral values in the space**. **And then third, we continuously stress test this portfolio. Currently, we are stress testing to $1.50 per NCF for gas, $55.00 per barrel for oil.**" – Steve Bradshaw, BOK's CEO, DA Davison Financial Institutional Conference, 13 May 2014

[4] "We haven't changed our underwriting standard at all during that period of time. It's always been effectively the same. We have our own independent engineers. We use the same price (inaudible) formula that we've always used in our underwriting throughout that period. We effectively take the (inaudible) of the NYMEX (inaudible) **and use that as an actual price and then escalate it [3%] a year up to a cap. That's effective for oil and/or gas. We then bring forward that cash flow at a discount rate of 9% and then loan approximately 50% to 60% of that value. And that is pretty much the standard underwriting**.

And the price (inaudible) changes regularly, based on rises and falls in prices obviously. And, so, most of our clients have lines of credit-- that we re-determine that volume base at least every six months; we can do it more often. Our documents allow us to do it more often. And **if they have a borrowing base in a (inaudible) where the volume base is now less than they have outstanding, they have several choices. They can pay it off over a six-month period of time, bring in additional properties, which many of them have, or make a lump sum pay down.**

And, so, that's pretty much our standard underwriting. **We also stress test. We're using three different values to stress test. We're using $35 oil, $40 oil, and $45 oil. And we use a different escalation based on which one of those prices we're currently using. For example, at $40 oil, we're holding $40 flat for two years and then escalating it 3%. Our $35 stress test is $35 for one year and then escalated to (inaudible)**. So we're continuing to stress the portfolio all the time looking for trouble. And so far, under our $40 scenario (inaudible) six clients or seven through the end of the year that we need to talk to about setting up monthly payments." – Chuck Cotter, BOK's former Chief Credit Officer, KBW Regional Bank Conference, 04 March, 2009

[5] "Tom Ward, chairman and chief executive officer with SandRidge Energy Inc., based in Oklahoma City, said he has sought Kaiser's advice numerous times throughout his career, calling him "**the most astute investor I've ever met.**"

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[6] "Despite his many business interests outside banking, Kaiser remains involved in the company, Lybarger said.

"**He goes to different markets and speaks to groups of our energy clients, and he makes customer calls in many of our markets**."" – *George Kaiser Makes Mark on Tulsa*, Tulsa World, 16 October 2011

[7] "Lybarger says that **after observing in the 1980s "how challenging commercial real estate can be during a downtown." he was motivated to further dilute BOK's concentration of CRE loans**. The company diversified in the 1990s by focusing on cross-selling brokerage, trust and other fee-income lines of business, and by expanding into payments and transactions services, like its TransFund ATM network." – *Lifetime Achievement: Stanley Lybarger*, Glen Fest, American Banker Magazine, December 2013

[8] "**We could have been a lot bigger as a company if we wanted to concentrate on real estate growth, we just didn't do that. We grew commercial real estate proportionately to the rest of our loans** and we think that's going to serve us very well." – Steve Nell, BOK's CFO, KBW Regional Bank Conference, 25 February 2010

[9] "**Spread revenue always will be a key element in building shareholder value for us, but unlike many banks, we derive nearly half of our revenue from fee businesses**. It's really been a key strategy since BOK Financial was formed in '91. We wanted to build out diverse fee businesses. **It's a great advantage for us in an industry where most lines of business are linked to factors that are generally beyond our direct control -- interest rates, investment market performance, commodity prices, performance of key industry segments, and just general economic conditions.**

The objective here was threefold. **It was to provide continuity of earnings during poor economic times**; second, it was to **propel earnings growth faster than peers during economic expansion**; and, third, was to have **multiple business units fully capable of acquiring business and quality relationships without reliance on other business units to refer.**

In the last several years, we've leveraged the maturity and the capabilities of our fee businesses to offset the negative impact of financial reform and increased regulation. **Eleven of our 20 peers generated less non-interest income in 2012 than they did in 2009, due largely to lower deposit service charges related to Reg. E.**

In contrast, we've grown fee-based revenue at a compound annual rate of 10% over the past three years. If you exclude mortgage banking revenue, which more than doubled during that timeframe, we grew fee-based revenue at a compound annual rate of 4%." – Steven Bradshaw, BOK's CEO, Morgan Stanley Financials Conference, 11 June 2013

[10] "**As a reminder we've been stress testing all new commercial real estate loans at loan origination since 2009**.

The scenario we use includes the following assumptions; **first, a 500 basis point increase in interest rates over a 24-month period; second, normalized cap rates; and third, normalized occupancy rates despite limited vacancy in the book and our markets**. We believe that our real estate loan portfolio is in good shape relative to these stress tests." – Daniel Ellinor, BOK's former COO, 2014 Q4 Earning call Transcript

[11] "Residential mortgage loans totaled $1.9 billion, a $103 million or 5% decrease compared to December 31, 2013. **In general, we sell the majority of our fixed rate loan originations that conform to U.S. government agency standards in the secondary market and retain the majority of our non-conforming and adjustable-rate mortgage loans**. **We have no concentration in sub-prime**

residential mortgage loans. Our mortgage loan portfolio does not include payment option adjustable rate mortgage loans or adjustable rate mortgage loans with initial rates that are below market. **Collateral for 98% of our residential mortgage portfolio is located within our geographic footprint**.

The majority of our permanent mortgage loan portfolio is primarily composed of various non-conforming mortgage programs to support customer relationships including jumbo mortgage loans, non-builder construction loans and special loan programs for high net worth individuals or certain professionals. Jumbo loans may be fixed or variable rate and are fully amortizing. The size of jumbo loans exceed maximums set under government sponsored entity standards, but otherwise generally conform to those standards. **These loans generally require a minimum FICO score of 720 and a maximum debt-to-income ratio ("DTI") of 38%. Loan-to-value ratios ("LTV") are tiered from 60% to 100%**, depending on the market. Special mortgage programs include fixed and variable rate fully amortizing loans tailored to the needs of certain healthcare professionals. Variable rate loans are fully indexed at origination and may have fixed rates for three to ten years, then adjust annually thereafter." – BOK 2014 10-K

[12] "The question is about **how do we accelerate growth in healthcare and our primary focus in bringing it in as a vertical is to organize it and run it much like we do with energy today**.

The way we had run it before was somewhat decentralized. It really wasn't strong in each one of the markets of BOKF and as we took a look at the industry, we liked the dynamics. **We have a lot of internal expertise that we built up over time but there are risk characteristics in that particular portfolio that we wanted to make sure that we built the right governance around** so our idea was to bring that in, put it under single leadership across the organization. **We will still deliver it through all of our markets but deploy, or in some cases, redeploy resources throughout the footprint**.

For example, we didn't have a healthcare banker in Houston and now we've got four in that particular market so we are expanding capabilities kind of across the footprint and believe with this kind of a focused approach that we will be able to accelerate that growth." – Steve Bradshaw, BOK's CEO, DA Davison Financial Institutions Conference, 13 May 2014

[13] "Healthcare lending is likewise a growing specialty of our Company. It is a business line **we formed in the mid-2000s, have recently organized as a vertical specialty unit within the Company to leverage that expertise and to**

accelerate growth. **We serve very specific segments within the industry -- skilled nursing, senior care, memory care and hospitals.**

Healthcare lending requires a very specific skill set for success and we see that as a barrier of entry to a lot of our competition. For us, that means you have to have **expertise in multifamily residential construction** because many of the projects are ground up developments of new facilities. You have to have **a deep knowledge of the reimbursement pattern for states where we do business** and you've got to have an **extensive understanding of the financial trends of those states** so you will understand the impact of future reimbursements.

We focus on the top operators in the industry. We do business throughout our footprint and in select states adjacent to the footprint. At this point we are seeking to double our outstandings in this market over the next three to four years." – Steve Bradshaw, BOK's CEO, DA Davidson Financial Institutions Conference, 13 May 2014

[14] "Healthcare lending is an area that we have begun to focus on more significantly in the last 15 months or so. In particular **we're very focused**, obviously hospitals is an area that we look at, but **particularly, nursing, skilled nursing, senior care** is also areas that we focus on. **We developed a niche around construction of these facilities, developing projects from the ground up, new facilities**, but there is a deep knowledge that we have and I believe is important to **understand in healthcare lending space around Medicare-Medicaid reimbursement rates by state and also the individual state's fiscal condition as it relates to how they can provide reimbursement**. **We think that part of the equation there is sticking to top kind of third of the operators in the business** and doing business throughout the footprint, so we're selective about where we choose to do business based on those factors." – Stacy Kymes, BOK's Executive Vice President of Corporate Banking, DA Davidson Financial Institutions Conference, 12 May 2012

[15] "BOK Financial's commitment to expanding mortgage lending illustrates the company's long-term view. Recognizing the opportunity to serve customers in regional markets, the company began refocusing mortgage banking efforts in 2008 by appointing new leadership and enhancing origination, servicing and risk management processes. **During the past few years as many banks struggled to serve their customers, BOK Financial added approximately 150 mortgage loan originators, more than doubling capacity, opened six new offices and created a correspondent channel of high quality regulated financial institutions**." – BOK's 2012 Letter to Shareholders

[16] "We have in the past, years ago, gone outside our footprint, but it doesn't work out for you as well. **You need the capacity with your origination side of the shop to go after that servicing and the refinance activity since you have a chance to recapture that revenue stream. If you buy servicing all over the U.S. that don't have the origination capability there, then it always goes away from you and you don't get a chance to re-establish that revenue stream**." – Steve Nell, BOK's CFO, KBW Regional Bank Conference, 25 February 2010

[17] "During the first quarter of 2010, **we acquired the rights to service $4.2 billion in residential mortgage loans from a distressed seller. We viewed this unique opportunity as a means to expand our origination platform in New Mexico**, increase mortgage servicing revenue and further develop relationships with approximately 34,000 additional mortgage customers. **In connection with this acquisition, we hired 29 mortgage professionals, including 22 originators and sales managers**. We are seeing the results of our investments in this line of business." – BOK's 2010 Annual Letter to Shareholders

[18] "Yes, in the case of the -- as I mentioned, we have a $7 billion platform now. We add the $4 billion on top of that, which --by the way, it won't come onboard until April. So we don't actually physically have to service it until April. **But once it gets onboard, I think our mortgage guys indicated they need to hire six employees to support that kind of increase**. So we have the platform, we've got the capacity.

Could we go further? The answer is, yes. **We think there's some limit to that, but we think we could add a couple billion more or so of servicing without incrementally having to step up our cost. We're a very low-cost producer**, if you will, or the shop we run on the mortgage servicing side is very efficient. **We're constantly ranked in the top decile by some of the national publications on servicing**. So we're a great servicer and have opportunities there. We're going to try to fill that capacity the best we can." – Steve Nell, BOK's CFO, KBW Regional Bank Conference, 25 February 2010

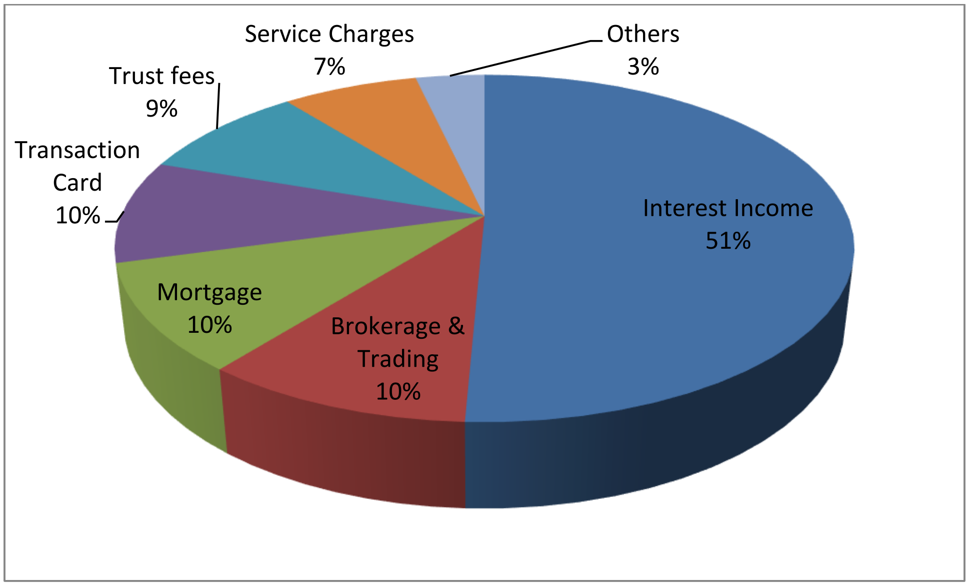
[19] "**The Dodd-Frank Act has increased the regulatory burden and costs on those smaller institutions, he added. That burden, including the additional staff needed for compliance is what is causing the smaller institutions to reassess their place in the mortgage business**.

…

To be able to successful compete in the mortgage business, the originator needs to have size and scale. Larger companies are able to counterbalance the additional costs Dodd-Frank and the associated regulations have brought on, he said." – Outsourcing Mortgages Allows Banks to Keep Customers Happy

Moat

Fee-based Businesses Drive Deposit Market Share Gain



Fee incomes account for almost ½ of BOK's total revenue

- **Biggest Negative**:
    - Consumer Banking isn't strong outside Oklahoma
- **Michael Porter Questions for the banking business**
    - (-) means low
    - (=) means medium
    - (+) means high
    - **For the industry**
        - Is the threat of new entrants high or low?
            - **(-)** About 1-2% new FDIC charters in 2002-2008
            - Almost no new FDIC charters after 2009
        - Is the bargaining power of buyers high or low?
            - **(+)** Borrowers care about rates and terms
        - Is the threat of substitutes high or low?
            - **(-)** No threat of substitutes
            - Online banking isn't a threat
            - People need physical branches for services
        - Is the bargaining power of suppliers high or low?
            - **(=)** Suppliers of money
                - Low for checking accounts

        - High for CDs
      - **(-)** Staff costs are 50-60% of noninterest expenses
        - Bankers are generally not unionized
    - Is the rivalry within the industry high or low?
      - **(+)** banks compete aggressively for loans
  - **For the company**
    - Is the threat of new entrant different for this company specifically?
      - **(-)** similar to the industry
    - Is the bargaining power of buyers different for this company specifically?
      - **(-)** 69% of loans are relationship-based
    - Is the threat of substitutes different for this company specifically?
      - **(-)** no threat of substitutes
    - Is the bargaining power of suppliers different for this company specifically?
      - **(-)** time deposit is just 12% of total deposits
        - Demand deposits are 86% of total deposits
        - Noninterest bearing deposit are 39% of total deposits
      - Total deposits are 79% of total liabilities
    - Is the rivalry within the industry different for this company specifically?
      - **(+)** similar to the industry
- **Michael Porter Questions for fee-based businesses**
  - Fee incomes are almost 50% of BOK's total revenue
    - Services charges and others are 10.7% of total revenue
      - Strongly related to the banking business
    - Mortgage banking account for 10% of revenue
      - Different from other fee-based business
        - Discussed in the "Durability" section
    - Almost 30% of revenue are from
      - Wealth management
      - Transaction card
      - Brokerage and Trading
  - Wealth management: **9%** of revenue
    - Trust services
      - Personal trust
      - Estate and retirement planning

                - Investment management
                - Retirement and institutional benefits
                - Corporate trust
                - Etc.
            - BOK has **$69 billion** asset under management or in custody
                - **$39 billion** in fiduciary assets
    - Transaction card: **9.6%** of revenue
        - Offers ATM network to 356 clients
            - TransFund is among the top 10 network in the U.S.
                - 2,080 ATMs
            - Operates in 22 states
                - More than 50% of clients outside Oklahoma
            - Clients include
                - 211 banks
                - 136 credit unions
                - 6 convenience store partners
            - Processed 496 million electronic funds transfers in 2014
        - Process payments for 6,944 merchants and cash advance locations
    - Brokerage and trading: **10%** of revenue
        - Institutional and retail sales
        - Investment banking
        - Financial risk management services
            - Interest rate hedge
            - Commodity hedge
            - Foreign exchange hedge
            - Etc.
    - **Questions for the industry**
        - Is the threat of new entrants high or low?
            - **(-)** barrier to entry is high for brokerage and transaction card
                - Medium for wealth management
        - Is the bargaining power of buyers high or low?
            - **(-)** low for brokerage and transaction card
                - Wealth management customers might be focused on performance
        - Is the threat of substitutes high or low?

            - **(-)**
        - Is the bargaining power of suppliers high or low?
            - **(-)** low for brokerage and transaction card
                - Employees may have power in wealth management
        - Is the rivalry within the industry high or low?
            - **(-)** competitors don't compete on price
    - **Questions for the company**
        - Is the threat of new entrant different for this company specifically?
            - **(-)** similar to the industry
        - Is the bargaining power of buyers different for this company specifically?
            - **(-)** similar to the industry
        - Is the threat of substitutes different for this company specifically?
            - **(-)** similar to the industry
        - Is the bargaining power of suppliers different for this company specifically?
            - **(-)** similar to the industry
                - Diversified base of wealth management customers
        - Is the rivalry within the industry different for this company specifically?
            - **(-)** similar to the industry
- BOK's moat comes from its strength in the fee-based businesses
    - Strong fee businesses result in
        - **Low Net Operating Cost**
            - Operating Cost = Noninterest Expense/Earning Assets
            - Net Operating Cost = (Noninterest Expense – Noninterest Income)/Earning Assets
        - **Low cost of funding**
            - Cost of funding = Interest Expense/Earning Assets
- Low cost of funding
    - Deposit breakdown
        - Demand deposit: 86%
            - Noninterest-bearing: 39%
            - Interest-bearing: 47%
        - Time deposits: 12%
        - Savings: 2%
    - BOK's liabilities base cost much less than the industry

- BOK
    - Deposits: **70%**
        - Noninterest-bearing: **26%**
        - Interest-bearing: **44%**
    - Other interest-bearing liabilities: **17%**
        - Mostly consist of
            - Federal Home Loan Bank advances: **12%**
            - Repurchase agreement: **3%**
    - Other noninterest-bearing liabilities: **3%**
    - Equity: **11%**
- The industry
    - Based on McKinsey report in 2012
    - Deposit: **49%**
        - Ranged between 40-49% from 2002 to 2012
        - Noninterest bearing is about 20% of total deposits
            - **10%** of total funding
    - Senior debt: **15%**
    - Repo: **6%**
    - Other liabilities: **18%**
    - Equity: **10%**
- 3% federal fund rates can give BOK more than **0.5%** cost of funding advantage

- The evolution in BOK's deposit base indicates the important role of fee-based businesses
    - There was a shift from expensive deposits to cheap deposits
        - Time deposit
            - 2000: 45% of total deposits
            - Today: 12% of total deposits
            - Time deposit is the most expensive deposits
                - Cost about the same as federal fund rates
                    - Similar to most banks
        - Interest-bearing demand deposit
            - 2000: **34%** of total deposits
            - Today: **47%** of total deposits
            - Interest-bearing demand deposit is cheaper
                - Costs about 63% of federal fund rates
        - Noninterest-bearing deposit

            - 2000: **18%** of total deposits
            - Today: **39%** of deposits today
            - This is the free deposit
    - Most of deposit growth was from Commercial and Private Banking
        - Consumer Banking:
            - 2006: $5,123 million
            - 2014: $6,521 million
            - 3% annual growth
                - Dragged down by time deposit
                - Growth in demand deposit was higher than 3%
        - Commercial Banking:
            - 2006: $3,681 million
            - 2014: $8,888 million
            - 12% annual growth
        - Private Banking:
            - 2006: $1,416 million
            - 2014: $4,391 million
            - 15% annual growth
- Hypothesis
    - Consumer Banking is strong in
        - Oklahoma
            - Tulsa: 30% deposit market share
            - Oklahoma City: 12% deposit market share
            - BOK has 1,200 ATMs in Oklahoma
        - New Mexico
            - Albuquerque: 10% deposit market share
    - Consumer Banking isn't strong in other markets
        - Had to offer high rates to get deposits
    - Fee-based businesses helps get deposits in Commercial and Private Banking
        - BOK attracts commercial customers by its wide range of products and services
            - Treasury management
            - Merchant processing
            - Asset and fiduciary management
            - Etc.

- BOK Private Banking
  - Offers services like
    - Traditional banking products
    - Wealth management
    - Estate planning
    - Etc.
  - Attracts
    - Management of commercial customers
    - Other high-net-worth customers
- Deposit growth follows fee-based businesses[1]
  - Example in Kansas City
  - BOK was unable to find an attractive acquisition to enter the market[2]
  - Operated numerous business lines since 1998
  - Lunched a loan production office in 1999
  - As of 2006, BOK's operations in Kansas had[3]
    - $1.3 billion in investor assets
    - $600 million in trust assets
    - Services 4,000 mortgage loan customers
    - $430 million commercial loan commitments
  - Opened Bank of Kansas City
    - In November 2006
  - Deposit grew astronomically
    - 2006: $6 million
    - 2010: $228 million
    - 2014: $580 million
  - Most of the growth was from demand deposit
    - 2006: $0 million
    - 2010: $165 million
      - Noninterest-bearing: $41 million
      - Interest-bearing: $124 million
    - 2014: $533 million
      - Noninterest-bearing: $259 million
      - Interest-bearing: $274 million

- Low net operating cost
  - Operating expense declined overtime
    - Noninterest expense/average total earning assets:

        - 1993: 4.73%
        - 1998: 4.52%
        - 2003: 3.58%
        - 2008: 3.50%
        - 2014: 3.35%
  - The consistent decline indicates good cost control
  - BOK also benefits from growth in deposit per branch
    - 1994: $42 million
    - 1999: $53 million
    - 2004: $65 million
    - 2009: $77 million
    - 2014: $116 million
    - Annual growth was **5.5%** over 20 years
  - A lot of fee incomes result in low net operating cost
    - Net operating cost: **0.89%**
    - Banks with over $10 billion assets has on average **1.12%** net operating cost
      - Based on all FDIC-insured institutions over $10 billion
      - Institutions over $10 billion has lower cost than institutions of smaller size
    - Most regional banks have between **1.6%** and **3.3%** in net operating cost
      - Based on a sample of about 50 publicly trade local banks
- BOK's moat is sustainable
  - BOK's differentiations are
    - Offers a combination of
      - Wide range of products as national banks do
      - Local touch/customized solutions[4]
        - Has local name for each operations
          - Bank of Oklahoma
          - Bank of Texas
          - Bank of Albuquerque
          - Bank of Arkansas
          - Colorado State Bank & Trust
          - Bank of Arizona
          - Bank of Kansas city
        - Big banks tend to have standard products[5]

            - BOK offers customized solutions
        - Fee-based business units can grow without referrals from other business units[6]
            - Evidence:
                - Fee incomes are about 50% of revenue
                    - 1/3 or less of revenue at most banks
            - Example: Wealth Management
                - Open offices outside of BOK's banking footprint[7]
                    - A Corporate Trust office in Lincoln, Nebraska
                    - A Trust/Private Bank office in Austin, Texas
                - Developed external distribution channel
                    - External distribution accounted for **36%** of new sales in 2014[8]
                    - Over **1/3** of inflow into BOK's mutual funds came from external distribution[9]
                        - Registered investment advisors
        - BOK cross-sells products to customers of each business unit[10]
            - Example:
            - Business bankers are a constant source of referrals to
                - TransFund
                - Mortgage
                - Broker dealers
                - Etc.
    - It's difficult for other small banks to replicate
        - Must invest in these businesses
        - Must make changes to the organization
            - Must organized into different specialty verticals
            - Most local banks try to cross-sell fee-based products to banking customers
                - Not the other way around
    - Customers are sticky
        - Banking customers don't change primary bank account often
        - Commercial and Private Banking use many products
            - Merchant processing customers are sticky
            - Trust customers are sticky
            - Etc.
    - Strong customer acquisition + Customer stickiness = Durable moat

[1] "When we want to expand into a market, we'll establish a beachhead either through a small acquisition or – in the case of our Kansas City presence – on a de novo basis. Then, **we add products and services around it to attract what is a largely commercial base of customers.**

We have a broad array of products and services. **I'm sure you noticed that 50% of our revenue comes from product lines such as brokerage and trading, transaction processing, fiduciary and asset management, and mortgage banking**. We are very much built to have product offerings that compete with the largest national banks, while we ourselves remain a midsized regional bank. So **we can compete with anybody for a new customer relationship – the biggest banks, where our product set matches up well, and other midsized or smaller banks, that may not have the product depth that we have**.

The deposit growth has largely followed the growth of the rest of the bank, as we have built out our beachheads in each of the markets we serve – Oklahoma, Texas, New Mexico, Arizona, Colorado, Arkansas, and Missouri/Kansas (Kansas City)." – BOK's Investor Relations said in a personal interview

[2] "**Possibly the greatest test of BOK Financial's strategy was entering the highly competitive Kansas City market as a de novo bank.**

Unable to find an attractive acquisition opportunity after launching a loan production office in 1999, the company opened Bank of Kansas City in November 2006. Despite the downturn in the economy, Bank of Kansas City has established a solid presence and grown loans and fee-based revenue at a compound annual rate of more than 20 percent over the last three years. **Last year Bank of Kansas City's loans grew at a faster rate than 90 percent of the local banks'. With nearly 150 employees, Bank of Kansas City remains in a rapid expansion mode. During 2012, the company broke ground on a new branch in Lee's Summit, Mo. and opened a new mortgage and wealth management office in North Kansas City.**" – BOK's 2012 Annual Letter to Shareholders

[3] "Our regional expansion continued with the launch of Bank of Kansas City in November 2006. **Since 1998, we have operated numerous successful business lines in this market which we consolidated into the Bank of Kansas City brand. The bank has $1.3 billion in investor assets, $600 million in trust assets, services 4,000 mortgage loan customers and has $430 million in commercial loan commitments**. Our corporate food and

agribusiness lending segment is also headquartered in Kansas City." – BOK's 2006 Annual Letter to Shareholders

[4] "**We continue to believe that we carry an advantage over large national competitors by providing the same products and services that they provide, but we do it in much more of a responsive and personalized manner by empowering local, experienced relationship managers to better take care of customers' needs.**" – Steve Nell, BOK's CFO, KBW Regional Bank Conference, 04 March 2009

[5] "Our relationship managers listen to their customers' needs and recommend individualized solutions. **If customers' requirements don't match one of our standard products, we work to accommodate their unique needs. Throughout the organization, our agile and innovative approach allows us to be more responsive and flexible than our large bank competitors.**" – BOK's 2006 Annual Letter to Shareholders

[6] "**Spread revenue always will be a key element in building shareholder value for us, but unlike many banks, we derive nearly half of our revenue from fee businesses**. It's really been a key strategy since BOK Financial was formed in '91. We wanted to build out diverse fee businesses. **It's a great advantage for us in an industry where most lines of business are linked to factors that are generally beyond our direct control -- interest rates, investment market performance, commodity prices, performance of key industry segments, and just general economic conditions.**

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[7] "**Within the Wealth Management division, we added approximately 40 professionals throughout Corporate Trust, the Private Bank and BOSC, the broker-dealer. We also opened a Corporate Trust office in Lincoln, Nebraska and a Trust/Private Bank office in Austin, Texas**. These recent investments contributed to impressive growth of more than $1 billion in new trust assets during the fourth quarter." – BOK's 2011 Annual Letter to Shareholders

[8] "The other big contributor, I think, for us, is we've really been focused on our asset management business. **And for us it's a matter of getting external distribution**, working a little bit more strongly, relative to just distributing investment management internally. **In the first quarter, we saw about 36% of our growth in -- or, I'm sorry, 36% in terms of new sales in our Wealth Management business coming from outside distribution.**" – Steve Bradshaw, BOK's CEO, 2014 Q1 Earning Call Transcript

[9] "Our family of mutual funds that we brand Cavanal Hill, have been recognized nationally for top tier performance in both fixed income and equity management. **Today, over one-third of net inflow to our variable NAV funds come from external distribution in the broker-dealer registered investment advisory industry so we are winning at home and winning on the road as well**." – Steve Bradshaw, DA Davison Financial Institutions Conference, 13 May 2014

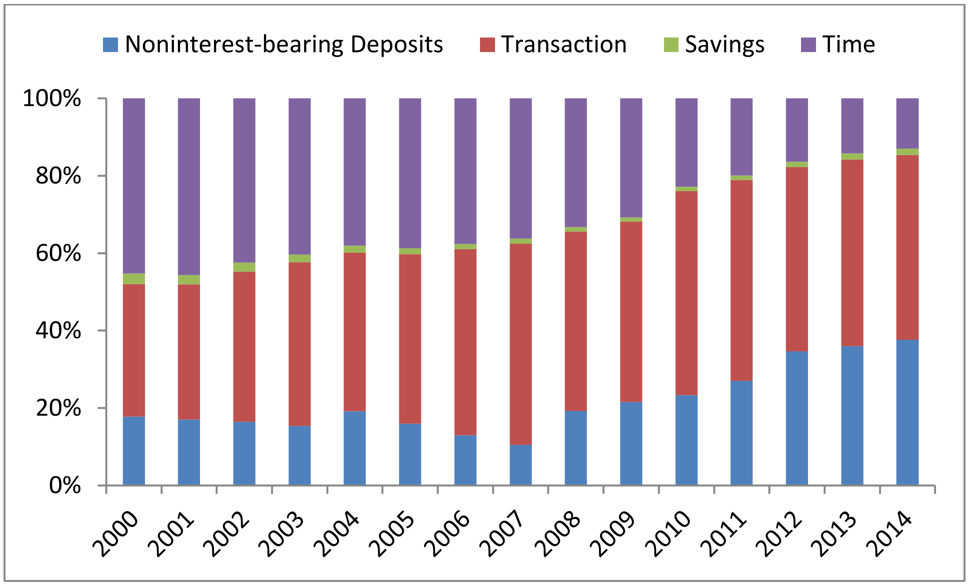
[10] "In terms of continued investments, we have a number of ongoing initiatives to support profitable, balanced loan growth and fee revenue. **Sales calls are at a record high, and we're shifting select administrative duties away from our bankers to enhance their capacity for additional calls.**

Our calling efforts are coordinated through a robust CRM system bank wide, team-based calling, a strong engagement from senior and executive-level leaders. This model delivers the entirety of the bank to customers and prospects and help maintain a balanced approach to generating net interest revenue and fee-based business.

Our business banking initiative is well underway. This group provides differentiated professional services and needs-based cash flow management solutions for small and micro business owners. **Business experts in our branch area are a constant source for referrals to our other areas, including TransFund, mortgage, and our broker dealer, among others.**"- Dan Ellinor, BOK's COO, Morgan Stanley Financials Conference, 11 June 2013

Quality

Low Costs Result In Higher than Average Return on Assets



Expensive time deposits now account for just 12% of total deposits

- **Biggest Negative**:
  - Banks have no pricing power
    - That's why yield declines when interest rates declines
- **Michael Porter Questions**
  - (-) means low
  - (=) means medium
  - (+) means high
  - **For the industry**
    - Can the industry charge a high price?
      - **(=)** The industry charge a stable "Net Interest Margin" over cost of money
    - Does the industry have low costs?
      - **(-)** Banks have the lowest cost of money
        - lower cost of money than pension funds or bond funds
    - Does the industry have low need for assets?
      - **(+)**The industry is capital-intensive
        - Rely on high leverage
        - Leverage depends on regulatory capital ratios

- **For the company**
  - Can the company charge a higher or lower price than the industry?
    - **(+)** BOK has higher net yield than the industry
      - Lower gross yield
      - But much lower net charge-offs
  - Does the company have higher or lower cost than the industry?
    - **(-)** BOK has lower cost than the industry
      - Lower cost of funding
      - Lower operating cost
  - Does the company have more or less need for NTA than the industry?
    - **(=)** the same

- The industry's net interest margin is very stable
  - Net interest margin = yield on earning assets – cost of funding earning assets
  - Based on data of all FDIC-insured institutions
  - Net interest margin was about 3.6% in the 1996-2014 period
    - Min: 3.14%
    - Max: 4.06%
    - Median: **3.60%**
    - Mean: 3.61%
    - Standard deviation: 0.30%
    - Variation: 0.08 (very stable)
  - The stable NIM is because the industry have lower cost of money than competitors
    - Banks can get funding from
      - Non-interest bearing deposit
        - free
      - Time deposit
        - Cost less than Fed funds
      - Other borrowings
    - Bank's average net operating cost is
      - Banks with assets over $10 billion: **1.1%**
      - Banks between $1 billion and $10 billion: **1.83%**
    - => Banks total cost of money is about **1-2%** more than Fed funds
      - Not far from risk-free rates

                - 1954-2014 Median (10-year treasury yield – Fed funds) is **1.06%**
            - => Banks have lower costs than competitors
                - Bond funds
                - Pension funds
                - Etc.
- BOK can get better net yield than the industry average
    - Yield = Interest income/Earning Assets
    - Net yield = (Interest income – provision for loan losses)/Earning Assets
    - BOK has lower gross yield on earning asset
        - 1993-2014 average of (peers' yield - BOK yield) was
            - Wells Fargo: 1.10%
            - U.S. Bancorp: 0.57%
            - Frost: 0.03%
            - FDIC-insured institutions
                - Over 10 billion assets: **0.09%**
                - $1 billion to $10 billion assets: **0.62%**
        - Two reasons
        - BOK buy more securities
            - Securities are consistently about 40% of earning assets
            - BOK want to use fixed-rate securities to neutralize asset sensitivity[1]
        - BOK makes fewer consumer loans than big banks
            - Consumer loans have higher yield than business loans
            - Average of (peer's loan yield - BOK loan yield) was
                - (from 1993 to 2014)
                - Frost: 0.02%
                    - Frost's loan portfolio is similar to BOK
                    - Consumers loans are < 15% of total loans
                - U.S. Bancorp: 0.15%
                - Wells Fargo: 0.98%
                    - Wells Fargo makes a lot of consumer loans
    - BOK has lower charge-offs than the industry
        - Average net charge-offs:
            - (from 2002 to 2014)
            - BOK: 0.39%
            - Frost: 0.29%

        - U.S. Bancorp: 1.01%
        - Wells Fargo: 1.17%
        - FDIC-insured institutions
            - Over 10 billion assets: 1.23%
            - $1 billion to $10 billion assets: 0.75%
    - Average allowance for loan losses/earning assets
        - (from 2002 to 2014)
        - BOK: **0.27%**
        - Frost: 0.18%
        - U.S. Bancorp: 0.84%
        - Wells Fargo: 0.93%
        - FDIC-insured institutions
            - Over 10 billion assets: **0.80%**
            - $1 billion to $10 billion assets: **0.62%**
  - (BOK net yield – net yield of FDIC-insured institutions) is
    - Institutions with over 10 billion assets: **0.44%**
    - Institutions with $1 billion to $10 billion assets: **-0.27%**
    - **Notice**:
        - Institutions with over 10 billion assets hold **80%** of industry's total deposits
        - Institutions with assets between $1 billion and $10 billion hold 10% of total deposits
        - => comparison with institutions with assets of over $10 billion is more meaningful
  - BOK makes better net loan yield than some other big banks
    - Net loan yield = loan yield – net charge-offs
    - Average of (BOK net loan yield – peer's net loan yield) is
        - From 1993 to 2014
        - Frost: -0.05%
        - U.S. Bancorp: 0.52%
        - Wells Fargo: **-0.17%**
            - A disadvantage of 0.17% against Wells Fargo's net loan yield is quite good
- BOK has lower cost than the industry
  - In the past, funding cost was a disadvantage
    - BOK's funding cost disadvantage against peers is

        - = average (BOK's funding cost – each' funding cost)
        - Frost: 0.91%
        - U.S. Bancorp: 0.22%
        - Wells Fargo: 0.34%
        - FDIC-insured institutions
            - Over 10 billion assets: **-0.01%**
            - $1 billion to $10 billion assets: -**0.17%**
            - (negative sign means advantage)
- Now it's an advantage
    - BOK relies on time deposits much less today
        - Time deposits were 45% of total deposits in 2000
            - Are only 12% of total deposits today
    - BOK's liabilities include
        - Deposits: **70%**
            - Noninterest-bearing: **26%**
            - Interest-bearing demand deposit: **35%**
            - Time deposit: **9%**
        - Other interest-bearing liabilities: **17%**
            - Mostly consist of
                - Federal Home Loan Bank advances: **12%**
                - Repurchase agreement: **3%**
        - Other noninterest-bearing liabilities: **3%**
        - Equity: **11%**
    - The industry's liabilities include
        - (Based on McKinsey report in 2012)
        - Deposit: **49%**
            - Ranged between 40-49% from 2002 to 2012
            - Noninterest bearing is about 25% of total deposits
                - **12%** of total funding
        - Senior debt: **15%**
        - Repo: **6%**
        - Other liabilities: **18%**
        - Equity: **10%**
    - Customer's "willingness to pay" varies with each type of deposit
        - Time deposit is the most expensive deposit
            - And for time deposit

        - Well-known, strong banks pay lower rates
        - Weaker banks pay higher rates
    - Customers care less about rates of demand deposit
      - Services and customer relationship can help get free deposit
        - Or low rates for interest-bearing demand deposit
  - In summary
    - BOK's liabilities consist of
      - Free funding: **39%**
        - Noninterest-bearing deposits
        - Equity
        - Other noninterest-bearing liabilities
      - Interest-bearing demand deposits: **35%**
        - Cost about 63% of Fed funds
      - Time deposit and other borrowings: **26%**
        - Cost about 108% of Fed funds
      - => BOK's cost of funding would be **50%** of Fed funds
        - 39% * 0% + 35% * 65% + 26% * 108%
    - The industry's liabilities consist of
      - Free funding: **22%**
        - Noninterest-bearing deposit
        - Equity
      - Interest-bearing deposits: **37%**
        - On average cost about 75-80% of fed funds
      - Other liabilities: **41%**
        - Cost much more than fed funds
      - => the industry's cost of funding would exceed **70%** of fed funds
        - 22% * 0% + 37% * 75% + 41% * 100% = 69%
  - => BOK's advantage is more than 20% of Fed funds
    - A normal 3% Fed funds can results in **0.6%** advantage
- Net operating cost is another advantage
  - BOK: 0.89%
  - FDIC-insured institutions
    - Over 10 billion assets: 1.12%
    - $1 billion to $10 billion assets: 1.95%

        - => BOK has **0.23%** advantage over banks with over $10 billion
            - **1.06%** over banks with $1 billion to $10 billion assets
- BOK can make 17-19% return
    - BOK's pre-tax return on earnings assets can be higher than the industry
        - **1.27%** better return than institutions over $10 billion assets
            - 0.44% more net yield
            - 0.60% lower funding cost
            - 0.23% lower operating cost
        - **1.39%** better return than institutions between $1 billion and $10 billion assets
            - -0.27% less net yield
            - 0.60% lower funding cost
            - 1.06% lower net operating cost
    - The industry's average return on earning assets is
        - Institutions over $10 billion assets: 1.62%
        - Institutions between $1 billion and $10 billion assets: 1.33%
    - => BOK can make about **2.7 – 2.9%** return on earning assets
    - 10x leverage => 27-29% pretax ROE
        - 17-19% after-tax ROE
- 27-29% pre-tax ROE is realistic based on past ROE
    - BOK's past pre-tax ROE was about 21%
        - From 1993 to 2014
            - Min: 10%
            - Max: 30%
            - Median: 21%
            - Mean: 21%
            - Standard deviation: 5%
            - Variation: 0.24 (stable)
    - It's reasonable to expect higher ROE in the future
        - BOK has much less time deposits than in the past
        - BOK has much more noninterest bearing deposits than in the past
        - Net operating cost declined
- Fee-based businesses can make good return
    - Transaction card is the best ROE business that BOK has
        - This business relies on scale
    - ROIC of wealth management and brokerage is hard to judge

- Wealth Management segment includes
    - Wealth management
    - Brokerage
    - Private banking
- After-tax ROIC was great in 2006-2008
    - 2006: 17%
    - 2007: 14%
    - 2008: 16%
- After-tax ROIC is poor since 2009
    - 2009: 7%
    - 2010: 7%
    - 2011: 9%
    - 2012: 11%
    - 2013: 9%
    - 2014: 12%
- Low ROIC in recent years is because of low interest rates
    - Net interest revenue stayed the same
        - 2006: $46 million
        - 2014: $44 million
    - Although total deposits more than tripled
        - 2006: $1.4 billion
        - 2014: $4.4 billion
- These business can have great ROE
    - Labor intensive
    - But capital light
    - ROIC can be great as long as fees exceed expense
        - They do
        - Personnel and non-personnel expenses are about 90% of fee incomes

- 8 dimensions of quality
    - Relative size
        - Great relative to customers
            - BOK focuses on small business
        - Great size relative to supplier of money
            - Consumers
            - Commercial customers
    - Focus

- BOK has operations in 9 states
  - But focuses on current footprint
- BOK has many specialty business units
  - Energy
  - Healthcare
  - Mortgage Banking
  - Wealth Management
  - Transaction Card

- Customer engagement
  - BOK's relationship managers proactively identify customers' needs
    - And cross sell
- Cross-selling
  - 50% of revenue is from fee incomes
- Retention
  - Possibly high
- Words of mouth
  - No information
- Reinvestment rate
- Stock's popularity
  - Short-interest: 10.2%
  - Share turnover: 208%
    - 3-month average daily volume: 165 thousand shares
    - Float: 28.4 million shares
  - No guru investor owns the stock

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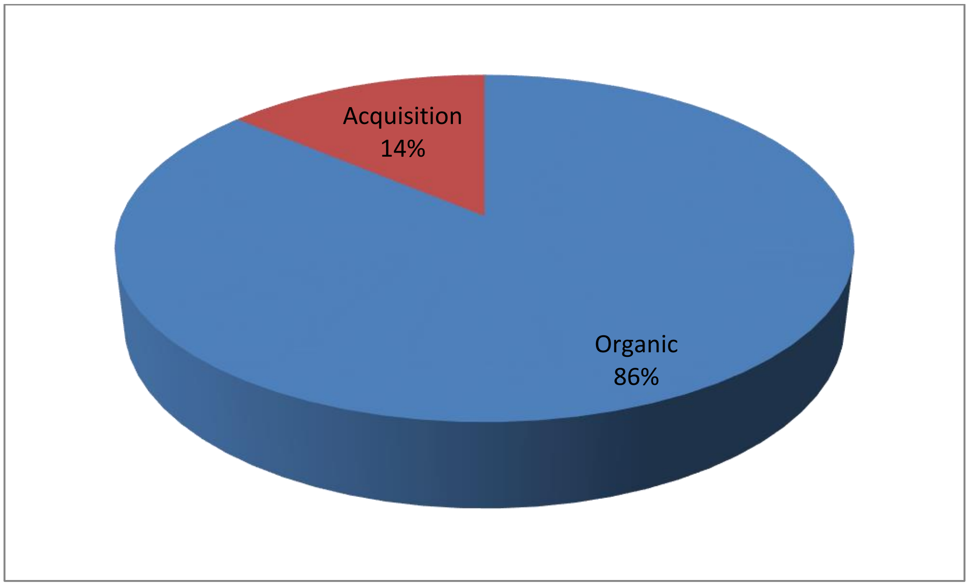
[1] "Talk a little bit about net interest margin. We've been pretty stable. If you look at this chart, the dark black line there is our peer group that I mentioned. The dotted red line is BOK Financial across almost a 10-year period here. **We have been lower than the peer group, that's because of the way we managed the balance sheet. We maintain a larger securities portfolio relative to most of these peers because that fits very well in the context of our asset-sensitive balance sheet**. That securities portfolio can bring back that asset sensitivity to a neutral position and we like to maintain our bank in a very neutral position. **We think it may dilute margin, but it generates more net interest revenue in the long run and over time at lower risk than trying to time the market correctly or directionally time the market.**" – Steve Nell, BOK's CFO, KBW Regional Bank Conference, 25 February 2010

Capital Allocation

BOK Is Focused on Franchise Building



Acquisitions account for only 14% of total growth since 1991

- **Biggest Negative**:
    - No negative
- BOK has minimal dilution
    - Share count increased only **0.4%** annually over the last 10 years
        - 2005: 66.7 million shares
        - 2014: 69.1 million shares
    - Share dilution before 2005 was due mainly to
        - Conversion of preferred stock
            - $250 million
            - Into 7 million shares of common stock
            - The preferred stock existed since the formation of BOK in 1991
        - Share issuance in some acquisitions
            - Issued 1.7 million shares in 2002
                - Acquired Bank of Tanglewood
                - Equivalent to 1.9 million shares today
                    - Adjusted for share dividend
                        - Equivalent to stock split
            - Issued 2.4 million shares in 1999

- Acquired First Muskogee Bancshares
    - The 23rd largest depository organization in Oklahoma
        - $218 million deposit
- Equivalent to 2.7 million shares today
    - Adjusted for share dividend

- Excluding these items and share count increased only **0.4%** related to share dividend
    - 1994: 63.6 million shares
        - Adjusted for share dividend
    - 2014: 69.1 million shares
- Excluding conversion of preferred stock, share dilution was **0.8%**
    - 1994: 58.5 million shares
    - 2014: 69.1 million shares

- BOK is controlled by George Kaiser
    - Mr. Kaiser controls **67.8%** of total shares
        - Owns 57.7%
        - His foundation owns 10.1%
    - He's a long-term shareholder
        - He had become the second largest shareholders of Bank of Oklahoma by 1980
        - He bought Bank of Oklahoma from FDIC in 1991[1]
            - For $61 million
            - Formed BOK financial
                - Injected $10 million additional capital to BOK
    - He's a billionaire
        - About $10 billion net worth
        - He built his family oil business into one of the largest private energy company in the U.S.
        - He is widely regarded as the smartest oilman in the business[2]
            - The most astute investor
            - (according to Chesapeake's former CEO, Aubrey McClendon)
    - He's a publicity-shy businessman[3]
        - Wears a $20 Casio
        - Rarely gives interviews

        - Rather visit prisons or preschool serving poor children than attend a banquet
    - He's a democrat
    - A philanthropist
        - He works 70 hours a week
            - Spends half of his time on philanthropy
        - He has given away over $4 billion
            - Plans to give away all of his fortune
- Mr. Kaiser's ownership gives the management the stability of expectation from shareholders[4]
    - Give the flexibility to make long-term investments
        - Grow business unit
        - Expand footprint
        - Not be constrained by quarterly earnings
- BOK is focused on long-term cash return
    - Example:
        - Don't sell nonperforming loans[5]
            - Don't let VC firms make double digit IRR
                - by buying loans at distressed price
            - BOK may have more non-performing loan than other banks
                - But have much lower net charge-offs
        - BOK always compares 15-year return with peers in presentations
        - Long-term incentive plan is based on BOK's ranking of the trailing 3-year EPS growth among peers
            - Rank **80 percentile** or higher => management gets 200% of target compensation
- BOK prefers franchise-building over acquisitions
    - Total acquired assets since 1997 were only $3.4 billion
        - Total assets are $31 billion
        - => acquisitions accounted for just over **10%** of total assets
    - BOK is only interested in franchise-building opportunities[6]
        - Interested in something BOK can build from[7]
        - BOK isn't interested in turnaround opportunities[8]
            - Didn't pursue FDIC assisted deals
            - Those deal could be accretive near term
            - But would take away management's focus
                - Want to focus on growing organically

- BOK's model is to acquire and invest heavily[9]
  - So the acquired organizations can grow much faster than they could on their own
  - Example:
  - BOK bought small banks in different states
    - Established a beachhead
    - These small banks relied mostly on time deposits
    - BOK equipped these banks with other financial products
      - Attracted commercial customers[10]
      - Got demand deposits
  - BOK bought $4.2 billion MSR in New Mexico[11]
    - (Mortgage Servicing Rights)
    - In 2010
    - From a distressed seller
    - It was an opportunity to expand BOK's origination platform in New Mexico
    - Increase mortgage servicing revenue
    - Develop relationships with 34,000 additional mortgage customers
    - Hired 29 mortgage professionals
      - 22 originators and sales managers
      - Added only 6 servicing employees[12]
- BOK is conscious about price
  - Based on all banks acquisitions BOK made since 1997
    - Total earning assets: $3,089 billion
    - Total price paid: $696 million
    - => Price to Earning Assets: **0.23x**
    - The price is fair
    - BOK can make over 2% pre-tax return on earning assets
  - BOK paid higher multiple for some big acquisitions
    - Worth Bancorporation
      - In 2007
      - Earning assets: $390 million
      - Deposits: $369 million
      - Price paid: $127 million
        - This is the biggest acquisition BOK made
      - Price to Earning Assets: **0.33**

            - Worth Bancorporation is in Fort Worth
                - A very attractive market
    - BOK chose to grow organically in Kansas City
        - Was unable to find the right acquisition
  - BOK hasn't acquired any bank since 2007
    - Made some bolt-on acquisitions related to the fee businesses
      - The Milestone Group[13]
        - In 2012
        - Paid $24 million
        - Added estate and tax planning capabilities
          - Suited to high-net-worth customers
      - GTRUST[14]
        - In 2013
        - Paid $8 million
        - Helped build presence in the Kansas market
        - Gained a new wealth management product
          - Fee-only financial planning for the mass-affluent market
          - => can leverage across BOK's footprint
      - MBM Advisors[15]
        - A 401(k) administrator based in Houston, Texas
        - Brought ERISA 3(38) Fiduciary capabilities
        - Serves as a turnkey 401(k) provider for small and mid-sized business
      - BOK can cross-sells all new products across its footprint
- BOK's focus on growing fee-based businesses create huge value
  - These businesses have high ROIC
    - Labor intensive but capital light
  - These businesses help gain deposit market share
- BOK prefers paying cash for acquisition[16]
  - Only issued stock when BOK is forced to
  - Avoid dilutive activities[17]
- BOK currently pays 38% of earnings in dividends
  - But doesn't have a specific payout rate
  - BOK paid $1 per share special dividend in 2012
  - Mr. Kaiser prefers BOK to reinvest and grow profitably[18]
  - But BOK will return excess cash

- Mr. Kaiser wants BOK to makes better return than what he could get by exchanging his shares for another bank

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[1] "**BOK Financial Corporation ("BOK Financial") was incorporated under the laws of the State of Oklahoma on October 24, 1990. Active operations as a bank holding company commenced on June 7, 1991 with the acquisition of the preferred stock ("BOk Preferred Stock") of Bank of Oklahoma, National Association ("BOk") from the Federal Deposit Insurance Corporation ("FDIC") and the conversion of the BOK Preferred Stock into 99.99% of the common stock of BOK**. BOK Financial is regulated by the Board of Governors of the Federal Reserve System pursuant to the Bank Holding Company Act of 1956, as amended ("BHCA").

BOK Financial operates primarily through BOk, BOk's subsidiaries and Citizens Bank of Northwest Arkansas, National Association ("CBNWA"). The existing and future activities of BOK Financial and its subsidiaries are limited by the BHCA, which prohibits a bank holding company from engaging in any business other than banking, managing or controlling banks, and furnishing and performing certain bank-related services and activities.

On June 7, 1991, BOK Financial paid $60.75 million to the FDIC for the Bok Preferred Stock. To finance this acquisition, BOK Financial issued preferred stock totaling $15.0 million at $6.00 per share and common stock ("Common Stock") totaling $46.0 million at $5.75 per share to George B. Kaiser ("Kaiser"), BOK Financial's principal shareholder. Kaiser purchased an additional $10.0 million to BOK Financial Common Stock at $5.75 per share, and BOK Financial contributed the $10.0 million to BOk as additional capital. Per share amounts reflect a 1-for-100 reverse stock split effective December 17, 1991 ("reverse stock split")." – BOK's 1995 10-K

[2] "Tom Ward, chairman and chief executive officer with SandRidge Energy Inc., based in Oklahoma City, said he has sought Kaiser's advice numerous times throughout his career, calling him "**the most astute investor I've ever met.**"

"I look at George Kaiser as being probably the most influential businessman in my life as far as someone I could look up to and take his advice not only about business but how he lives," Ward said.

McClendon said Kaiser "is widely regarded as the smartest oilman in the business."

"**He went to work early in his life at a small, family-owned oil company and built it through hard work, good decision-making and reasonable risk-**

taking into one of the largest private producers of oil and natural gas in the industry."" – *George Kaiser Makes Mark on Tulsa*, Tulsa World, 16 October 2011

[3] "From bustling preschools in north Tulsa to smoothly paved trails winding along the Arkansas River, George Kaiser's influence is everywhere in Tulsa. Yet Kaiser himself is nowhere.

His family name appears on one building - the oil and gas company he has operated for more than 40 years - despite the fact that his foundation has given more than $300 million to charity in Tulsa over the past decade.

That apparently suits Kaiser - ranked by Forbes magazine as one of America's richest men, with an estimated $10 billion fortune - just fine.

"Naming rights are a seductive philanthropic inducement, yet more anonymous operational support may better advance the charitable purpose," Kaiser writes in an essay for an upcoming issue of the Chronicle of Philanthropy.

Kaiser, 69, eschews publicity and society functions and rarely gives interviews. Friends say he'd rather visit a women's prison or preschool serving poor children than don a tuxedo and attend a banquet." – *George Kaiser Makes Mark on Tulsa*, 16 October 2011, Tulsa World

[4] "**And from our standpoint, I think it's one of our competitive advantages because we have real stability of expectations from shareholders. And George, as well as management, together, we all own about 70% of the bank**, so we are very much aligned with our strategy of generating good long-term results for the bank, and **it gives us as a management team I think the flexibility to make long-term investments to go contrarian in terms of how we are building business units or how we are building our geography and not be constrained by what that quarter's impact might be to earnings**. I think mortgage is a great example of that. There's lots of others where we have invested when others haven't. And I think **having George set the expectation as majority shareholder that we have the flexibility to do that and makes us a better company.**" – Steve Bradshaw, KBW Regional Bank Conference, 26 February 2014

[5] "We think we have been -- I know all banks say this, but we think we've been pretty aggressive in moving items to the non-performing status, so that our specialty team of workout guys in our Special Assets Group can address them

timely. I don't think you'll -- I think you'll see the benefits of this aggressiveness when we look at what our charge-offs have been over the last several quarters. **BOK's approach is to maximize the value of the NPAs rather than to sell at a distressed or heavily discounted price. We don't believe in allowing a venture capital firm to earn double-digit IRRs at our expense. We will wait patiently in an effort to maximize our return for our shareholders. So we value the long-term economics over the short-term objects**." – Chuck Cotter, BOK's former Chief Credit Officer, KBW Regional Bank Conference, 25 February 2010

[6] "Unidentified Audience Member: I guess what would -- if there were a more traditional M&A environment, what would I guess Mr. Kaiser's -- whether you want to see stock being used maybe for transactions to increase liquidity? I guess how is --?

Steve Nell, BOK's CFO: **He has always been supportive of any acquisition that we feel like is strategic in nature and that is franchise building across this regional footprint**. If it is a good deal and he thinks that obviously we can propel longer-term growth because **we want to remain as a growth Company and utilize our capital from growth as opposed to pass that back to him through dividends, or we do have a modest dividend. But our first and foremost is we want to grow and so if we find the right strategic franchise-building opportunity, he would support us in that effort.**" – KBW Regional Bank Conference, 25 February 2010

[7] "And then I think in terms of our capital, which you'll see in a little bit, we are looking for the right M&A partner. But it's been pretty slow at this point in terms of finding **things that fit strategically that are really franchise-building opportunities for us, which is what our focus is**. We have not run around the country trying to find an FDIC deal that's really a financial transaction. **We want to buy something that we can build from, to truly build our franchise from and that's what we're focused on**. So we haven't -- you haven't seen us be successful at this point on the M&A front, but we have the capital to do it going forward." – Steve Nell, BOK's CFO, Raymond James Bank Conference, 10 August 2011

[8] "**We are not an organization that is particularly interested in turn around or distressed deals,** even though they can, from a transaction standpoint, they can be accretive near term. Our view is that you're going to **divert substantial management resources and focus and expertise** to turn those around and that that's going to **take away from your opportunity to grow the bank organically in other areas**, which we have a good track record of doing.

So our M&A approach has been to identify banks that we think would be **strategically additive to us**, either in markets that we are in today. Maybe they **bring a great relationship in terms of their customer base, those kinds of things that could enhance us in places like Dallas and Houston, Kansas City and Denver**, but have been able to sustain themselves throughout the downturn." – Steve Bradshaw, BOK's CEO, KBW Regional Bank Conference, 26 February 2014

[9] "**We historically have not bought problem institutions**, at least that was the concept. Historically, what we've looked at and continue to look at are **organizations that we've got respect for, that culturally we think is going to be a really good fit for BOK Financial so we don't have personnel issues**. In a market that has the kind of dynamics where we can accelerate growth in the niche businesses that we are very good at, energy, healthcare, commercial real estate, wealth management, mortgage, all those kinds of things and a business that doesn't obviously have all those capabilities. Because **our model is to buy and invest heavily and grow that organization much faster than they would have otherwise been able to grow by themselves**. **We want an organization where we like management. We historically don't buy something and then fire everybod**y. That seems to be a kind of a backwards strategy for us. So we like -- we would want to like the leadership team." – Dan Ellinor, BOK's former COO, KBW Regional Bank Conference, 26 February 2015

[10] "When we want to expand into a market, we'll establish a beachhead either through a small acquisition or – in the case of our Kansas City presence – on a de novo basis. Then, **we add products and services around it to attract what is a largely commercial base of customers.**

We have a broad array of products and services. **I'm sure you noticed that 50% of our revenue comes from product lines such as brokerage and trading, transaction processing, fiduciary and asset management, and mortgage banking**. We are very much built to have product offerings that compete with the largest national banks, while we ourselves remain a midsized regional bank. So **we can compete with anybody for a new customer relationship – the biggest banks, where our product set matches up well, and other midsized or smaller banks, that may not have the product depth that we have**.

The deposit growth has largely followed the growth of the rest of the bank, as we have built out our beachheads in each of the markets we serve – Oklahoma, Texas, New Mexico, Arizona, Colorado, Arkansas, and

Missouri/Kansas (Kansas City)." – BOK's Investor Relations said in a personal interview

[11] "During the first quarter of 2010, **we acquired the rights to service $4.2 billion in residential mortgage loans from a distressed seller. We viewed this unique opportunity as a means to expand our origination platform in New Mexico**, increase mortgage servicing revenue and further develop relationships with approximately 34,000 additional mortgage customers. **In connection with this acquisition, we hired 29 mortgage professionals, including 22 originators and sales managers**. We are seeing the results of our investments in this line of business." – BOK's 2010 Annual Letter to Shareholders

[12] "Yes, in the case of the -- as I mentioned, we have a $7 billion platform now. We add the $4 billion on top of that, which --by the way, it won't come onboard until April. So we don't actually physically have to service it until April. **But once it gets onboard, I think our mortgage guys indicated they need to hire six employees to support that kind of increase**. So we have the platform, we've got the capacity.

Could we go further? The answer is, yes. **We think there's some limit to that, but we think we could add a couple billion more or so of servicing without incrementally having to step up our cost. We're a very low-cost producer**, if you will, or the shop we run on the mortgage servicing side is very efficient. **We're constantly ranked in the top decile by some of the national publications on servicing**. So we're a great servicer and have opportunities there. We're going to try to fill that capacity the best we can." – Steve Nell, BOK's CFO, KBW Regional Bank Conference, 25 February 2010

[13] "Most recently, the acquisition of **The Milestone Group in August added a new dimension to wealth advisory services with estate and tax planning capabilities specifically suited to high-net-worth customers**. The Wealth Management division's revenue growth reflects the company's ability to compete effectively with banks and specialty firms in a variety of business segments." – BOK 2012 Annual Letter to Shareholders

[14] "In the wealth management space, we announced the acquisition of GTRUST Financial Corporation, which helped build our presence in the Kansas market. In addition with this acquisition, **we gained a new wealth management product – fee-only financial planning – which can be leveraged across our footprint**." – BOK 2013 Annual Letter to Shareholders

[15] "In the trust business, we completed two acquisitions in 2014: GTRUST, a specialty trust company based in Kansas, and MBM Advisors, a 401(k) administrator based in Houston, Texas. **GTRUST brought with it a differentiated model for fee-only financial planning for the mass-affluent market, while MBM Advisors brought ERISA 3(38) Fiduciary capabilities enabling it to serve as a turnkey 401(k) provider for small and mid-sized businesses. In each case, the firms' areas of expertise can be introduced across our footprint**. This acquisition model replicates the success we have had with our acquisition of Denver-based The Milestone Group in 2012, which has doubled assets under management since joining the BOK Financial family." – BOK 2013 Annual Letter to Shareholders

[16] "We've got a pretty substantial capital base that **we can do acquisitions with where we prefer it be a cash buyer. We could use our stock if we were forced to but we're a cash buyer. That's our history. That's our preference. We've got north of half a billion dollar in liquidity that we could put to work right away.**

We are optimistic that we'll be able to announce a deal in 2015. This may set that back a little bit. We're not exclusively focused on Texas. I mean frankly, kind of $500 million to $2.5 billion bank size in Colorado, Denver, Kansas City, Dallas, Houston, other markets. So we've got some optionality in terms of where we're looking. I think you're correct. **The sellers never seem to migrate towards us. Their expectations are always higher than the buyers**. My sense is that that's probably going to be the case through 2015 and especially if you're in an energy-centric market and you've got a good franchise, it's likely you'll probably press pause for a little bit and ride out this cycle versus moving forward. So we're looking at non-energy markets as well as a result." – Dan Ellinor, BOK's former COO, KBW Regional Bank Conference, 26 February 2015

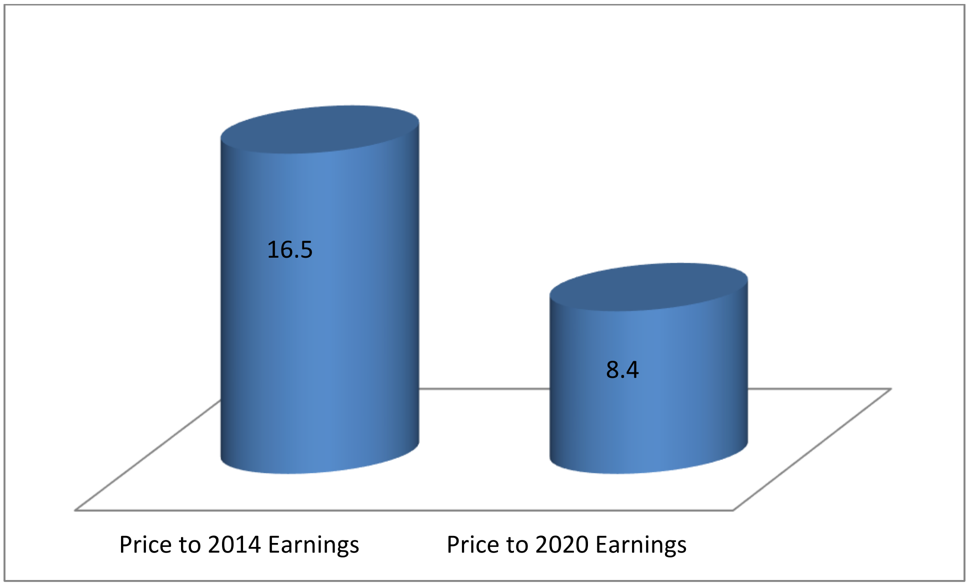
[17] "Fourth, we're shareholder friendly. **We avoid shareholder dilutive activities, we stay disciplined in acquisition pricing and we've increased our dividend in nine consecutive years with the current dividend yield of 2.5%**. And last we've positioned ourselves in some really great markets that will provide excellent growth opportunities going forward." - Steve Nell, BOK's CFO, Morgan Stanley Financials Conference, 11 June 2014

[18] "George [Kaiser] is still very active in the bank, still very engaged in the bank, still very quick to set his expectations for the management team. **He's never said I won't sell the bank. He said I want to see returns that exceed what I could get by exchanging my shares for another bank. And if you can deliver on that, then the bank stays independent**. And we've done that for 23 years and

we intend to continue to do that." – Steve Bradshaw, BOK's CEO, KBW Regional Bank Conference, 26 February 2014

Value

Investors Can Make 15% Annual Return by Buying BOK Today



Current price is about 8.4x estimated after-tax income in 2020

- **Biggest Negative**:
  - Earning power is sensitive to interest rates
- Key inputs
  - Share price: **$70** per share
  - Outstanding shares: 68.93 million
  - Market cap: $4,825 million
  - Short-term investments: $2,130 million
  - Securities: $10,813 million
  - Loans: $14,707 million
  - Earning Assets: $27,650 million
  - Deposit: $21,094 million
- Pre-tax Owner Earnings is **$751 million**
  - **Assumptions**:
    - Cost of interest-bearing liabilities is **89%** of Fed funds
      - Cost of interest-bearing liabilities/Fed funds
        - (1993-2007)
        - Min: 83%
        - Max: 154%
        - Median: **89%**

        - Mean: 101%
        - Standard Deviation: 23%
        - Variation: 0.23 (stable)
    - This assumption overstate BOK's costs
    - Two main components in BOK's interest-bearing liabilities
        - Transaction Deposits
            - Cost about 63% of Fed funds
            - Cost of Transaction Deposit/Fed funds
                - (1993-2007)
                - Min: 47%
                - Max: 89%
                - Median: 63%
                - Mean: 64%
                - Standard Deviation: 12%
                - Variation: 0.19 (stable)
        - Time deposit and other borrowings
            - Cost about 110% of Fed funds
            - The industry pay about 90-110% of Fed funds
            - BOK was more aggressive
                - Paid 110% of Fed funds
                - Bok tried to grow in other states
    - BOK relies on time deposits and other borrowings much less than it used to
        - This component was about 65% of interest-bearing liabilities in the 1993-2007 period
        - It's only 39% today
    - It's okay to be conservative
    - => let's assume cost of interest-bearing liabilities to be 89% of Fed funds
- Net interest spread (NIS): **3.07%**
    - NIS = yield on earning assets – cost of interest-bearing liabilities
    - NIS was very stable about 3.07%
        - From 1993 to 2014
            - Min: 2.53%
            - Max: 3.62%
            - Median: 3.07%

                - Mean: 3.06%
                - Standard Deviation: 0.26%
                - Variation: 0.08 (very stable)
        - BOK has much lower NIS than peers
            - Wells Fargo: 4.52%
            - First Financial: 4.00%
            - Commerce Bancshares: 3.75%
            - Frost: 3.80%
            - U.S. Bancorp: 3.64%
            - Prosperity Bancshares: 3.26%
        - On reason is BOK used to have high cost of funding
            - That has changed
    - Net Operating Cost: 0.89%
        - Good banks tend to have lower operating cost overtime
        - This is true for BOK
        - => It's reasonable to use Net Operating Cost in 2014
    - Commercial demand deposits **50%** of noninterest-bearing deposit
        - Commercial deposits are 51% of total demand deposits
            - 44% of total deposits
        - => it's fair to expect 50% of noninterest-bearing deposits to be from commercial customers
    - BOKF would have to pay 50% of Fed fund rates for commercial demand deposit
        - Regulation Q prevented banks from paying for commercial demand deposit
        - The Regulation Q was repealed in 2011
        - The impact is unclear
        - But banks already circumvented Regulation Q[1]
            - By giving customers earnings credit
                - Offset the fees for services
            - This is tax efficient way of doing business
        - Commercial demand deposit cost money either way
            - Let's assume the cost to be 50% of fed funds
            - This is conservative
            - Transaction deposits cost 63% of Fed funds
            - Commercial demand deposit should be cheaper

                - Service fees weren't hugely depressed in the past
                    - When BOK charged earnings credit against service fees
    - Normal fed funds is 3%
        - Cost of commercial demand deposits: **1.50%**
            - = 3% * 50%
        - Cost of interest-bearing liabilities: **2.68%**
            - = 3% * 89%
        - => yield is about **5.75%**
            - = 2.68% + 3.07%
            - This is lower than BOK's yield in 2005-2007
                - 2005: 5.77%
                - 2006: 6.75%
                - 2007: 6.91%
            - Historical median yield was 6.26%
    - Net charge-offs/average earning assets is 0.16%
        - The average from 1994 to 2014
    - BOK funds earning asset from
        - Free funding: **20%**
            - $5.4 billion
            - Including
                - Noninterest-bearing deposits
                - Equity
        - Commercial demand deposits: **14%**
            - $4 billion
            - One half of noninterest-bearing deposits
        - Interest-bearing liabilities: **66%**
            - $18 billion
            - Including
                - Interest-bearing deposits
                - Other borrowings
    - Pre-tax return on earning assets (ROEA) is 2.71%
        - Margin on free funding is **5.59%**
            - = yield – charge-offs
        - Margin on Commercial demand deposits is **4.09%**
            - = yield – charge-offs – cost of demand deposit

        - Margin on interest-bearing liabilities is **2.91%**
            - = yield – charge-offs – cost of interest-bearing liabilities
        - => weighted average margin is **3.60%**
            - = 5.59% * 20% + 4.09% * 14% + 2.91% * 66%
        - => ROEA is **2.71%**
            - = 3.60% - 0.89% (net operating cost)
    - Total earning assets is $27,650 million
    - => normal pre-tax earnings is **$751** million
        - = $27,650 * 2.71%
- BOK's current valuation
    - P/2014 EBT: 10.72
    - P/Normal EBT: 6.43
- BOK is cheaper than peers
    - We use apply the same approach in calculating normal ROEA to peers
    - Peers include
        - U.S. Bancorp (USB)
            - USB operates in the Midwest and West regions of the U.S.
            - USB has strong fee-based business like BOK
            - Fee incomes are about 50% of total revenue
            - Deposits grew 7.4% annually since 2001
                - Firstar bought USB in 2001
                    - Doubled the size of the company
            - USB's current valuation
                - Share price: $45.59
                - Market Cap: $80 billion
                - P/Deposit: **0.28**
                - P/2014 EBT: 11.12
                - P/Normal EBT: **8.33**
                - Using **2.63%** ROEA
        - Frost
            - Frost is a strong franchise in Texas
            - Focuses mostly on commercial customers like BOK
            - Has a lot of noninterest-bearing deposit like BOK
                - 41% of total deposits
            - Frost's current valuation
                - Share price: $70.26
                - Market Cap: $4,439 million

        - P/Deposit: **0.19**
        - P/2014 EBT: 9.71
        - P/Normal EBT: **6.17**
        - Using **2.81%** ROEA
- Commerce Bancshares
    - Commerce operates in
        - Missouri: 8.64% market share
            - 13.76% market share in Kansas City
            - 8.45% market share in St. Louis
        - Kansas: 5.28% market share
        - Central Illinois
            - 0.30% market share
        - Tulsa, Oklahoma
            - 1.55% market share
            - (BOK has 31% market share)
        - Oklahoma City
            - 0.15% market share
            - (BOK has 11% market share)
        - Denver, Colorado: 0.25% market share
    - Commerce has a strong focus on fee-based business
        - Mortgage banking
        - Trust
        - Card processing
    - Fee incomes are 40% of revenue
        - Higher than most banks
    - Commerce also see fee-based businesses as a key to getting banking customers
    - Deposit grew **5.3%** annually over the last 23 years
        - 4.8% over the last 15 years
        - 6.2% over the last 10 years
    - Commerce's current valuation
        - Share price: $47.55
        - Market Cap: $4,438 million
        - P/Deposit: **0.23**
        - P/2014 EBT: 11.18
        - P/Normal EBT: **6.51**
        - Using **3.02%** ROEA

- Prosperity Bancshares (PB)
  - PB has operation in
    - Texas
    - Tulsa, Oklahoma
      - PB has 9.52% market share
      - (BOK has 31% market share)
    - Oklahoma City, Oklahoma
      - PB has 4.4% market share
      - (BOK has 11% market share)
  - PB grew through acquisitions
    - Deposit CAGR was 27% from 1996 to 2014
      - 1996: $236 million
      - 2014: $16,690 million
  - PB issued a lot of shares
    - 1996: 7 million shares
    - 2014: 70 million shares
  - => deposit per share growth was about 12%
  - PB's current valuation
    - Share price: $54.60
    - Market Cap: $3,824 million
    - P/Deposit: **0.22**
    - P/2014 EBT: 8.57
    - P/Normal EBT: **8.03**
    - Using **2.52%** ROEA
- First Financial Bancshares (FFIN)
  - FFIN tends to have 30-40% market share in very small markets
    - In Texas
  - FFIN Has a lot of noninterest-bearing deposit like BOK
    - 33% of total deposits
  - FFIN's deposit growth was 8% over the last 23 years
  - FFIN's current valuation
    - Share price: $32.79
    - Market Cap: $2,104 million
    - P/Deposit: **0.44**
    - P/2014 EBT: 15.25
    - P/Normal EBT: **11.94**

        - Using **3.08%** ROEA
    - All these banks trade around 10-11 P/2014 EBT
    - Frost and Commerce are the most comparable peers
        - Both these banks are cheap
- BOK is cheap based on historical price
    - Historical price is about 8-11x EBT
        - 12-17x P/E
    - BOK's current price is 10.72x 2014 EBT
        - Totally normal
    - But it's not normal if current earnings is depressed
        - The price is just 6.4x normal EBT
- Buying BOK today can result in over **15%** annual return over 5 years
    - How much earnings can BOK make **in 2020**?
        - It's safe to expect 3% FFR in 2020
            - Most Fed members expect 3-4% FFR after 2017
    - BOK won't make 2.71% ROEA immediately when interest rates rise
        - BOK tends to neutralize asset's sensitivity to interest rates
            - Asset re-price more quickly than deposits
                - Loans tend to have floating rates
            - => asset's sensitivity
            - Offset asset's sensitivity by having fixed rates assets
                - Some fixed rates loan
                - Fixed-rates securities
                - => these asset re-price more slower than interest-bearing deposits
                    - Creating liability's sensitivity
                        - Offset asset's sensitivity
        - But both assets and liabilities will re-price in 5 years
            - Most loans have shorter than 5-year maturities
            - Securities portfolio have 3.2-year duration
    - In 5 years, BOK can grow earning assets to **$32,737 million**
        - 6-7% deposit growth is a realistic expectation for BOK
        - BOK expects $2 billion runoff of noninterest-bearing deposit
            - If interest rates increases by 2% immediately
        - Current earning assets are $27,650 billion
        - Let's assume BOK loses $2 billion deposit immediately
            - **$25,650** million earning assets

        - Let's assume BOK can grow only 5% over the next 5 years
            - End up with **$32,737 million**
                - = $25,650 million * 1.05^5
                - Implies **3.4%** annual growth from today
                - Lower than CAGR of any 5-year period in the past
                    - Minimum was **6%**
    - Pre-tax earnings in 2020 would be **$887 million**
        - = $32,737 million * 2.71%
    - After-tax earnings in 2020 would be **$577 million**
        - = $887 * 65%
    - EPS in 2020 would be **$8.37**
        - = $577/68.93
    - Historical price was 12-17x P/E
    - At 15x P/E
        - Share price is $126
        - **12.5%** annual increase from $70 per share
        - Dividend yield is 2.5%
        - => about **15%** annual return
    - BOK said it now has $500 million excess capital[2]
        - Wanted to make some acquisitions but didn't find appropriate candidates
        - There can be[3]
            - Acquisitions
            - Special dividend
            - Or share repurchase

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[1] "Brady Gailey: Now banks can pay interest on commercial deposits, which will be kind of interesting to see how that unfolds as rates start to head higher. Do think that the businesses that BOKF is talking to, are you they going to want interest and are they going to -- is that going to become a competitive thing now for commercial deposits?

Steve Bradshaw, BOK's CEO: We are not hearing that. **Customers certainly already benefit from the earnings credit rate as an offset against the fees that they would pay for their treasury service business, so they are already cognizant of that. There are sweet vehicles that have been popular in the past when rates were higher that I think people would opt to as well. I wouldn't say that interest on commercial deposits is something that people**

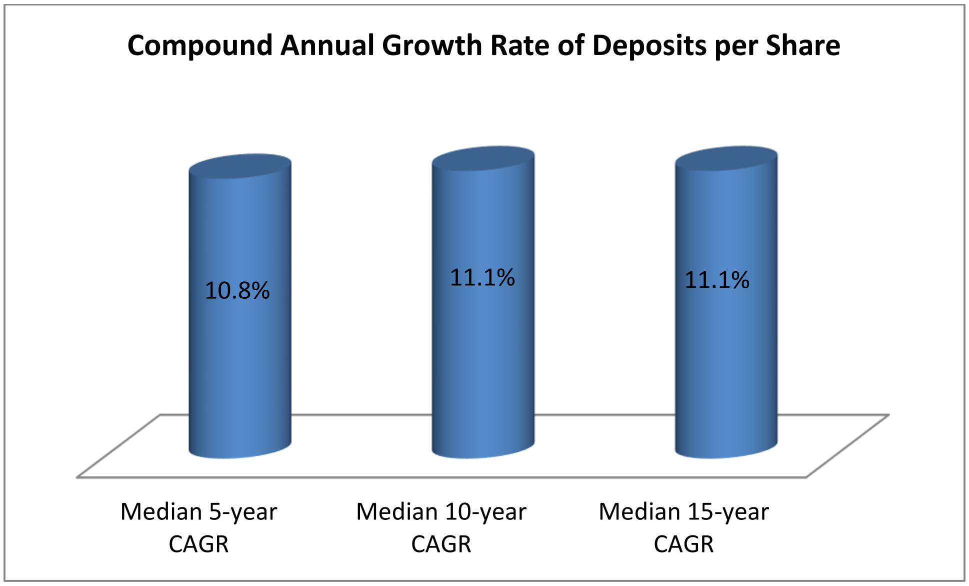
are talking about, and we are not really seeing much competitive movement there either." – KBW Regional Bank Conference, 26 February 2014

[2] "**And we have $500 million or so of excess capital, depending on how you measure it, and a like amount of cash at the holding company to execute on acquisitions**. So we would likely be a cash buyer. And that could drive some significant EPS accretion in year one, if we are successful in that objective." – Joe Crivelli, BOK's head of IR, Drexel Hamilton Financial services Conference, 12 March 2015

[3] "**We remain motivated to efficiently deploy excess capital via share repurchase and M&A as long as prices for both support long-term shareholder value**. While we did not buy back shares this quarter, we continue to see share buyback as a significant part of the equation to deploy our excess capital and **have approximately 1.3 million shares remaining on our current Board authorization.**" – Steve Bradshaw, BOK's CEO, 29 July 2015

Growth

BOK Can Gain Market Share in All of Its Markets



BOK grows deposits by 11% annually in most 5-, 10-, and 15-year periods

- **Biggest Negative**:
    - A 2% increase in interest rates can cause a runoff of $2 billion in noninterest-bearing deposits
- BOK has an attractive geographic mix
    - Oklahoma: **54%** of total deposits
    - Texas: **25%** of total deposits
    - Colorado: 7% of total deposits
    - New Mexico: 6% of total deposits
    - Arizona: 4% of total deposits
    - Kansas City: 3% of total deposit
    - Arkansas: 1% of total deposit
- Total deposit in Oklahoma grows about 5-6% annually
    - From 1994 to 2014
        - 16 5-year periods
            - CAGR of deposits in these periods is about 6.4%
                - Min: 3.5%
                - Max: 9.8%
                - Median: 6.4%
                - Mean: 6.4%

            - Standard Deviation: 2.1%
            - Variation: 0.33 (quite stable)
    - 11 10-year periods
        - CAGR of deposits in these periods is about 5.5%
            - Min: 4.2%
            - Max: 6.3%
            - Median: 5.5%
            - Mean: 5.5%
            - Standard Deviation: 0.8%
            - Variation: 0.15 (quite stable)

- Total deposit in Sun belt states may grow faster than 6%
    - These states grow faster than the U.S. economy
    - These states represent **35%** of BOK's total deposits
        - Texas: 25%
        - New Mexico: 6%
        - Arizona: 4%
- Deposits in other states may grow 5-6%
    - Colorado
    - Kansas City
    - Arkansas
- => deposits in BOK's markets can grow faster than **5%**
- BOK can gain market share in all of its market
- In Oklahoma
    - BOK slowly gained market share in Oklahoma
        - (based on FDIC data)
        - 1994: 7.80% market share
        - 1999: 9.73% market share
        - 2004: 13.02% market share
        - 2009: 10.67% market share
            - Between 2004 and 2009
                - BOK's time deposit declined by $1.2 billion
                - BOK's deposit in grew 7.8% annually
                - But Oklahoma's deposit grew 9.8% annually
        - 2014: 13.82% market share
            - Between 2009 and 2014
                - BOK's deposit grew 5.7% annually
                - Oklahoma's deposit grew 4.8% annually

- BOK can gain more market share in Oklahoma
- The Oklahoma market is more fragmented than most states
  - In Oklahoma
    - Top 5 banks: 38% market share
    - Top 10 banks: 52.5% market share
    - Top 15 banks: 58.3% market share
  - In Texas
    - Top 5 banks: 57% market share
    - Top 10 banks: 68.9% market share
    - Top 15 banks: 74.2% market share
  - In Colorado
    - Top 5 banks: 58.8% market share
    - Top 10 banks: 69.3% market share
    - Top 15 banks: 76.9% market share
  - In New Mexico
    - Top 5 banks: 53.8% market share
    - Top 10 banks: 70.1% market share
    - Top 15 banks: 79% market share
  - In Arizona
    - Top 5 banks: 78.7% market share
    - Top 10 banks: 88.4% market share
    - Top 15 banks: 92.6% market share
  - In Kansas City
    - Top 5 banks: 50.5% market share
    - Top 10 banks: 61.7% market share
    - Top 15 banks: 68.3% market share
  - In Arkansas
    - Top 5 banks: 38.6% market share
    - Top 10 banks: 55.8% market share
    - Top 15 banks: 62.5% market share

- In other states
  - BOK grew demand deposits very fast in other states
    - 10-year CAGR of deposit:
      - Texas: **10.5%**
        - 2004: $1.7 billion
        - 2014: $4.7 billion

- Colorado: **15.6%**
  - 2004: $252 million
  - 2014: $1,078 million
- New Mexico: **8.2%**
  - 2004: $457 million
  - 2014: $1,007 million
- Arizona: **24%**
  - 2005: $103 million
  - 2014: $716 million
- Kansas City: **59%**
  - 2009: $52 million
  - 2014: $533 million
- Arkansas: **16.8%**
  - 2004: $41 million
  - 2014: $194 million

- BOK can continue growing fast in these states
  - BOK has tiny market share in most market
    - Dallas-Fort Worth-Arlington, Texas: 1.77%
    - Houston-The Woodlands-Sugar Land, Texas: 0.91%
    - Denver-Aurora-Lakewood, Colorado: 2.05%
    - Phoenix-Mesa-Scottsdale, Arizona: 0.99%
    - Kansas City, Missouri-Kansas: 0.84%
    - Fayetteville-Springdale-Rogers, Arkansas-Missouri: 3.41%
  - BOK's niche strategy can continue gaining market share
    - Offers a combination of
      - Wide range of products as national banks do
      - Local touch/customized solutions
        - Has local name for each operations
          - Bank of Oklahoma
          - Bank of Texas
          - Bank of Albuquerque
          - Bank of Arkansas
          - Colorado State Bank & Trust
          - Bank of Arizona
          - Bank of Kansas city
        - Big banks tend to have standard products[1]

                - BOK offers customized solutions
            - BOK can do much better than local banks at getting fee-based businesses
                - Deposit growth will follow fee-based businesses

- => 6-7% deposit growth is a realistic expectation for BOK
    - Past growth was much higher
        - 5-year CAGR of deposits
            - We have 17 5-year periods
            - Min: 6.0%
            - Max: 17.1%
            - Median: **11.8%**
            - Mean: 11.7%
            - Standard deviation: 3.2%
            - Variation: 0.27 (quite stable)
        - 10-year CAGR of deposits
            - We have 12 10-year periods
            - Min: 8.0%
            - Max: 14.1%
            - Median: **12.6%**
            - Mean: 11.9%
            - Standard deviation: 2.1%
            - Variation: 0.18 (stable)
    - BOK won't gain market share as much as in the past
        - But the total market grows more than 5%
        - => BOK can grow 6-7%
- Deposit growth in near term can be low if interest rates increases
    - BOK expects a runoff of $2 billion in noninterest-bearing deposits[2]
        - If interest rates increase 2% immediately
        - It can migrate into other interest-bearing products
            - Or migrate out of BOK
- BOK's fee-based business can grow faster than GDP
    - 3 reasons
        - Growth of these business tend to follow GDP growth
            - Brokerage and trading
            - Transaction card
            - Fiduciary and asset management

        - BOK can gain market share
            - BOK is stronger than local banks in these businesses
            - Growth in one business unit can drive growth in others
        - BOK is willing expand outside of its banking footprint
    - 10-year CAGR was
        - Brokerage and trading: **12.6%**
            - 2004: $41 million
            - 2014: $134 million
        - Transaction card: **6.7%**
            - 2004: $65 million
            - 2014: $124 million
        - Fiduciary and asset management: **7.2%**
            - 2004: $58 million
            - 2014: $116 million
- BOK can return **50%** of earnings while growing **6-7%**
    - BOK makes about 15% pre-tax ROE in recent years
        - About 10% after-tax ROE
        - => can payout **1/3** of earnings
        - But Earning Asset/Equity was only 8x in recent years
            - At 10x, pre-tax ROE would be 18-20%
                - 12-13% after-tax ROE
    - If interest rates is normal, BOK can make 15-18% after-tax ROE
        - => can payout 50-60% of earnings
    - => on average BOK can return 50% of earnings

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[1] "Our relationship managers listen to their customers' needs and recommend individualized solutions. **If customers' requirements don't match one of our standard products, we work to accommodate their unique needs. Throughout the organization, our agile and innovative approach allows us to be more responsive and flexible than our large bank competitors.**" – BOK's 2006 Annual Letter to Shareholders

[2] "Unidentified Audience Member: One follow-up for me in terms of deposit pricing. I don't know if you have that in your slide deck. But is there assumption in terms of deposit repricing data relative to the Fed funds? I don't know if you have disclosed that or can disclose that, and what your thinking is?

Norm Bagwell, Chairman and CEO of Bank of Texas: I am not the expert with regards to that.

Joe Crivelli, BOK's Director of IR: I'm out of my depth on that one.

Norm Bagwell, Chairman and CEO of Bank of Texas: But I will tell you that we've modeled a variety of scenarios that would be along the lines of what you would expect with regards to different scenarios. With regards to interest rates, that's better answered by the Treasury.

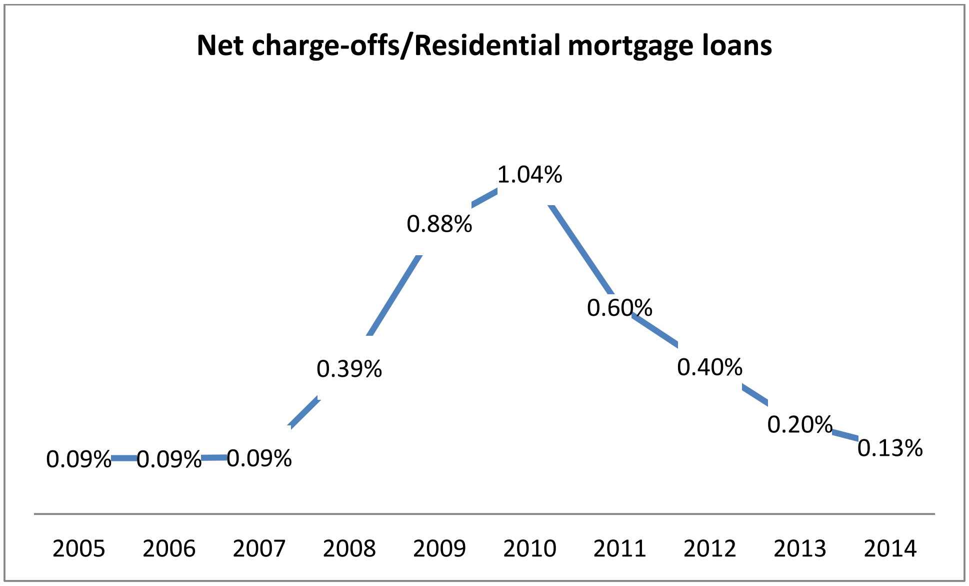
Joe Crivelli, BOK's Director of IR: Yes. And **our stress test does assume $2 billion of deposit runoffs and a parallel of 200 shift on the yield curve**. So we are not like –

Norm Bagwell, Chairman and CEO of Bank of Texas: That's runoff, not shift.

Joe Crivelli, BOK's Director of IR: Well, **it's runoff, but it could migrate into other products that pay an interest rate. So we are not like other -- I've heard other banks have -- know our franchise is just as good if rates go up; our deposit base is strong. And we are not going to see runoff. We don't take that view. We take that view that in an up-rate environment, we will see deposits migrate either out of the Bank or into interest-bearing products**." – Drexel Hamilton Financial Services Conference, 12 March 2015

Misjudgment

In Theory, Loan Losses Can Always Wipe out Equity



Residential mortgage loans averaged only 0.39% charge-offs since 2005

- **Biggest Negative**:
  - We can't be 100% confident that loan losses won't wipe out equity
- How could energy loan charge-offs be so low?
  - Charge-offs of the energy loan portfolio was
    - Without the 2008 fraud loss
      - 10-year average: 0.09%
      - 15-year average: 0.08%
      - 20-year average: 0.06%
    - With the 2008 fraud loss
      - 10-year average: 0.21%
      - 15-year average: 0.16%
  - The low charge-offs was achieved despite great price volatility
    - Oil price ranged from $11 per barrel to $140 per barrel
      - Over the last 20 years
    - There have been 6 oil and gas downturns since 2000
      - Price dipped by 50% over a 6-month period
  - The good
    - BOK seems to have expertise in energy lending
    - The recent oil crisis doesn't seem to cause much trouble this time

- The bad
  - BOK will continue energy lending
  - Energy price is very volatile
    - Create some uncertainties
      - At least in theory
  - But future volatility might not be as much as it was in the past
    - Supply of fracking oil can adjust quickly
      - Oil wells are short lived

- Will Mortgage Banking pose a big risk?
  - It'll be okay if BOK maintains discipline
    - Prime
    - Verify documents
    - Don't make bizarre loans like option ARMs
    - Keep loan-to-value below 80%
  - In theory, competition would force BOK into taking more risks
    - But a dominant player like Wells Fargo was able to stop making prime mortgage loans in 2004
      - A small BOK won't need to take excess risk to grow
- BOK retains nonconforming mortgage loans
  - Like jumbo mortgage loans
  - Serves very rich customers
    - Over 720 FICO scores
    - A maximum debt-to-income ratio of 38%
  - There's risk of "strategic default" by these customers
    - They can stop making payments despite having the financial ability to make the payments
      - When the property is underwater
  - BOK says that these loans are to support customers relationship
    - Like management of commercial banking customer
  - 10-year average net charge-offs/residential mortgage loans was 0.39%
    - Charge-offs during the crisis years were
      - 2008: 0.39%
      - 2009: 0.88%
      - 2010: 1.04%
      - 2011: 0.60%
      - 2012: 0.40%
- How strong is BOK's culture?

- George Kaiser controls BOK
- This is an advantage for BOK[1]
  - Give the management flexibility to make long-term investments
    - Grow business unit
    - Expand footprint
    - Not be constrained by quarterly earnings
- It's unclear how strong BOK's culture is without Mr. Kaiser
  - He's now 73 years old
- Executives officers are young and have been Bok for many years
  - Norman Bagwell
    - 52 years old
    - CEO of Bank of Texas
    - Joined BOK in 2008
    - Before 2008
      - President of the Dallas Region for JPMorgan Chase
      - President of the Dallas Region for Bank One
  - Steven Bradshaw
    - 55 years old
    - President and CEO of BOK Financial
    - Joined BOKF in 1991
      - When he sold his brokerage operation to BOK
    - Became CEO in January 2014
  - Scott Grauer
    - 50 years old
    - Executive Vice President, Wealth Management
    - CEO and Chairman of BOK's broker-dealer subsidiary
      - BOSC
    - Joined BOK in 1991
      - Part of BOK's acquisition of an independent retail brokerage operation
    - Was named manager of BOSC retail in 1996
    - Was named president and CEO of BOSC in 1999
      - Assumed responsibilities for
        - Retail
        - Institutional
        - Investment banking activities

- Stacy Kymes
  - 44 years old
  - Executive Vice President and Chief Credit Officer
  - Joined BOK in 1996
- Rebecca Keesling
  - 42 years old
  - Chief Auditor
  - Joined BOK in 2004
- John Morrow
  - 59 years old
  - Joined BOK in 1993
  - Became Chief Accounting Officer in 2009
- Steven Nell
  - 53 years old
  - Executive Vice President and Chief Financial Officer
  - Joined BOK in 1992
  - Became CFO in 2001
- Donald Parker
  - 54 years old
  - Chief Risk Officer
  - Joined BOK in 2005
- Patrick Piper
  - 55 years old
  - Executive Vice President, Consumer Banking Services
  - Has been with BOK since 1982

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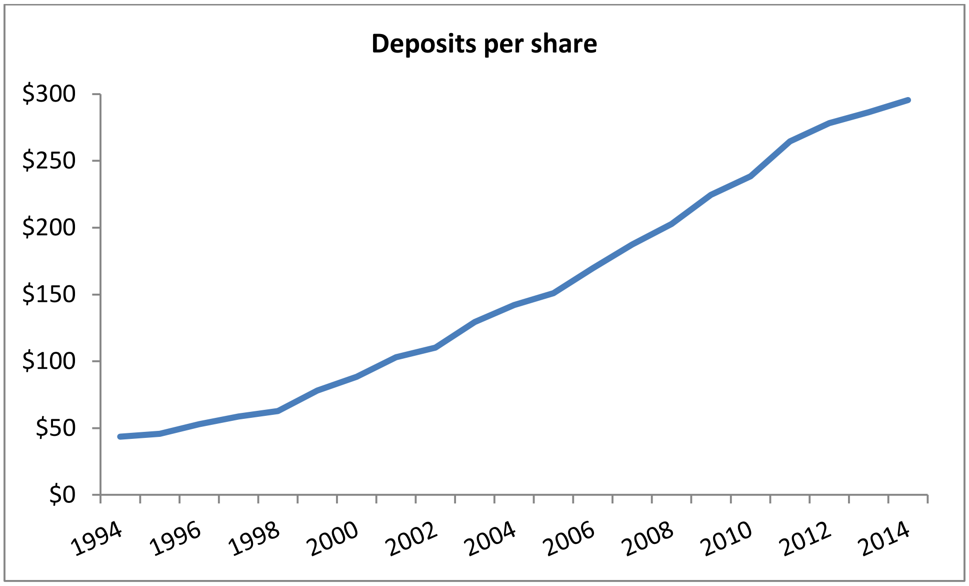
[1] "**And from our standpoint, I think it's one of our competitive advantages because we have real stability of expectations from shareholders. And George, as well as management, together, we all own about 70% of the bank**, so we are very much aligned with our strategy of generating good long-term results for the bank, and **it gives us as a management team I think the flexibility to make long-term investments to go contrarian in terms of how we are building business units or how we are building our geography and not be constrained by what that quarter's impact might be to earnings**. I think mortgage is a great example of that. There's lots of others where we have invested when others haven't. And I think **having George set the expectation as majority shareholder that we have the flexibility to do that and makes us**

a better company." – Steve Bradshaw, KBW Regional Bank Conference, 26 February 2014

Conclusions

BOK Will Keep Compounding Its Intrinsic Value



Deposit per share grew 10% annually over the last 21 years

- BOK vs. Frost
  - Differences
    - Frost is very focused
      - In Texas
      - Build a strong franchise
        - Attracts
          - Consumers
          - C&I customers
      - Exited commodity products
        - Mortgage
        - Credit cards
    - BOK uses "balance" to manage risk
      - Invest in many different business
      - In different states
      - Deposit growth follows fee-based businesses
  - Similarity
    - Strong C&I focus
    - Low funding cost
    - Low operating cost

- It's difficult to compare growth potential
    - BOK's growth potential isn't lower than Frost
    - But Frost enjoy greater industry tailwind
        - In Texas
        - A strong franchise in a fast growing state
    - It's easy to expect 8% growth for Frost
    - It's as certain to expect 8% growth for BOK
        - 6% is a safer expectation

- BOK is a very safe investment at current price
  - $70 per share implies an average price based on 2014 earnings
    - 2.5% dividend yield
    - 6-7% growth can results in 9-10% return
  - But BOK's earnings is hugely depressed
    - BOK's deposit base became much cheaper over the last 10 years
      - Deposit consist of
        - In 2004
          - Noninterest-bearing: 19%
          - Transaction deposits: 41%
          - Savings: 2%
          - Time deposits: 38%
        - In 2014
          - Noninterest-bearing: 38%
          - Transaction deposits: 48%
          - Savings: 2%
          - Time deposits: 13%
    - The benefit is obscured by near-zero interest rates
      - Is neglected by investors
    - At a higher interest rates, BOK's net interest spread will be much higher than in the past
      - BOK also reduced net operating cost
    - => BOK will easily make record ROEA
  - BOK can return 15% over the next 5 years with modest assumptions
    - 3% Federal fund rates
    - 4% deposit growth
    - 2.71% ROEA
    - 15 P/E