

## MUSINGS FROM THE OIL PATCH

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**Note:** *Musings from the Oil Patch* reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating and planning for the future. The newsletter is published every two weeks, but periodically events and travel may alter that schedule. As always, I welcome your comments and observations. Allen Brooks

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### **Summary:**

#### **The Rhyme Of Oil History Should Be Heard And Studied – Part 6**

The deep gas drilling boom in Oklahoma in the early 1980s was quickly followed by a bust when prices fell. What happened in Oklahoma was a precursor of the mid-1980s bust. We retell Oklahoma's story and how it reshaped national banking regulation, which impacted the later oil and service industry restructuring.

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#### **Welcome To Shipping's Low-Sulphur World – Still Operating**

Contrary to the scare scenarios offered for how IMO 2020 would lead to a global catastrophe due to the anticipated fly-up in crude oil prices. Yes, prices for low-sulfur fuel oil is up, but the market seems to be working well with few reported disruptions. IMO 2020 may wind up being another Y2K non-event.

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#### **COP25's Failure And Climate Change's New Reality**

The UN's global climate meeting in Spain in December ended with no meaningful or concrete agreements for advancing the Paris Accord's emissions reduction goal. Now the focus is on the Australian wildfires and their cause – climate change or arson. The media promotes climate change, although arsonists set 10% of the fires.

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## The Rhyme Of Oil History Should Be Heard And Studied – Part 6

The energy industry collapse, and the Southwest regional economic destruction that followed, was caused by the mid-1980s oil price bust. That bust, however, actually had a precursor debacle, which was dismissed by many observers as merely an Oklahoma phenomenon. The reality is that the Oklahoma debacle was just as predictable as the mid-1980s oil price bust if anyone had asked “what if?”

**That boom contained the seeds of its future bust, something inherent with all booms**

Phillip Zweig, in his extensive 1985 dissection of the precursor debacle [Belly Up: The Collapse of the Penn Square Bank](#), says the story started nearly two decades earlier with a vision for tapping the extensive natural gas resources buried deep under the Oklahoma turf. That vision became a reality with the help of a growing natural gas shortage that only became evident with the arrival of the Arctic cold winter of 1976-1977. With the help of politicians who altered the national regulatory structure for natural gas in response to the economic turmoil caused by bitter cold temperatures, the Oklahoma debacle was set in motion. It was further aided and abetted by a small, obscure bank operating from the corner of a shopping center parking lot in Oklahoma City that provided the “grease” for the financial machinery of the oil and gas industry, thus birthing a boom. That boom contained the seeds of its future bust, something inherent with all booms.

**Just as everyone began to believe that the boom would last forever, it evaporated**

Just as everyone began to believe that the boom would last forever, it evaporated, taking down hundreds of enterprises and costing thousands their jobs, not all in the energy business. The shock of the Oklahoma debacle came because no one asked “what if?” – a question often avoided by those in the global oil business. Are we paying the price for having failed to ask “what if?” during the waning days of the recent triple-digit oil price era? Yes. Should we be asking “what if?”, as we contemplate the future of the energy business?

**Either the significance of the Sooner State events was lost on people, or they naively thought “it can’t happen here”**

The July 1982 Penn Square Bank failure marked a turning point in federal monetary and banking regulatory policies in response to events that nearly took down the entire U.S. commercial banking industry – an event we saw repeated in the 2008-2009 financial crisis. The changes dictated by the disaster mitigated the risk of them being repeated, but it doesn’t mean financial risks don’t exist.

For the natural gas industry, its suppliers and service companies, the rapidly changed business environment in Oklahoma in 1982, and within the entire commercial banking industry, should have been a warning shot across the bow for everyone involved in the global crude oil business. Unfortunately, either the significance of the Sooner State events was lost on people, or they naively thought “it can’t happen here.” The reality is that it did happen here. And when it did, the structure of the oil and gas and oilfield service businesses

**The extraordinary steps needed to save the banking system spawned the “too big to fail” concept**

**The parallels with the 1980s energy debacle are striking, although so are the differences**

was intractably altered. The similarities with the events reshaping today’s global oil and gas and oilfield service industries cannot be ignored. Will what happened in the 1980s and 1990s be repeated in the 2020s?

For anyone who lived through the oil and gas boom of the 1970s, the bust of the 1980s, and the industry’s eventual restructuring and recovery in the 1990s, rereading Mr. Zweig’s book is a chance to relive the history of how our oil and gas business was fundamentally reshaped. For those new to the business, Mr. Zweig’s book (as well as Mark Singer’s Funny Money, a shorter version of the Penn Square Bank story) is a history lesson in how hubris, greed, naivety and fraud led to the downfall of a small but highly influential energy bank, which, because of its network within the national banking industry, risked causing a national economic calamity. The fallout from Penn Square Bank’s downfall necessitated years for the banking system to recover. The extraordinary steps needed to save the banking system spawned the “too big to fail” concept. That doctrine continues to impact how regulators and politicians view certain financial institutions. Energy was merely the catalyst for change.

Anyone examining the oil and gas industry today and wondering where its future may lead, the parallels with the 1980s energy debacle are striking, although so are the differences, which are important to contemplate as we limp along the road to recovery. Will those differences lead to a better outcome for the business, or will the recovery follow a similar path as we experienced during the 1990s?

A quick retelling of the Penn Square Bank failure and the Oklahoma debacle will set the stage for understanding what happened to the energy business in the 1980s and how the industry was reshaped during the recovery of the 1990s.

#### Exhibit 1. The Significance Of The Deep Anadarko

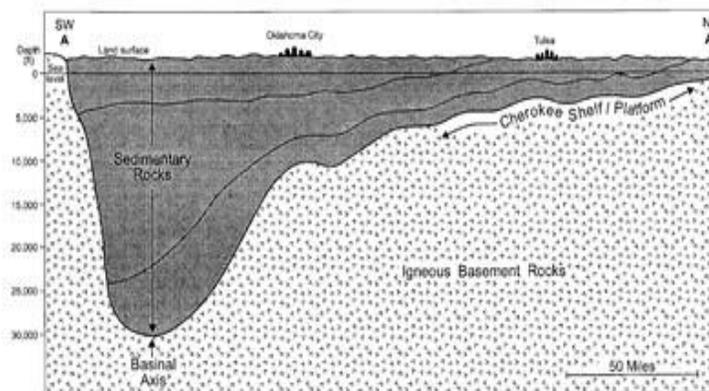


Figure 1. Cross section of the Anadarko geologic basin. Modified from Witt and others (1971). Vertical exaggeration 14:1. Figure 4 is the base map.

Source: Oklahoma Geology Association

**Gas wells froze, as bitter cold temperatures descended all the way to the Gulf of Mexico, cutting off supplies from frustrated pipeline managers**

A cross section of the Anadarko geologic basin highlights the significance of Oklahoma's deep natural gas resources. While this is the genesis of the Oklahoma boom, it only arrived when politicians acted to change the regulation of natural gas prices in an attempt to boost supply to address the shortages that had caused schools and businesses in the East and Midwest to be shuttered during the winter of 1976-1977, costing jobs and leading to unpleasant economic consequences. Fuel oil barges on the Mississippi River and other major rivers were blocked by 8-inch thick ice. Gov. James Rhodes of Ohio personally traveled to Oklahoma seeking natural gas for his constituents. Gas wells froze, as bitter cold temperatures descended all the way to the Gulf of Mexico, cutting off supplies from frustrated pipeline managers. (We sat in a pipeline's operational office watching the lights signaling producing gas wells go dark as the wells froze off.)

Pipeline companies need to maintain minimum pressures in their lines, or customer pilot lights will go out, creating explosion risks when appliances are relit. Interstate pipeline companies were working furiously to reallocate limited gas supplies throughout their networks to prevent people from literally "freezing in the dark," a phrase immortalized on car bumper stickers in the oil patch in response to the political battles waged between the consuming and producing states over energy pricing and regulation. The companies might have done a better job, but that is impossible to prove. What was true was that the public, who suffered from the lack of natural gas, learned the significance of supply shortages and that they would have to adjust their lives and pay higher prices.

**In fact, Exxon forecast in its energy outlook that for 1977-1990, energy prices would increase faster than the U.S. inflation rate through the 1970s**

Jimmy Carter was elected president on November 2, 1976, and his first crisis was the energy supply situation, exacerbated by regulatory issues and the general view that domestic oil and gas resources were limited, which would predictably lead to higher future prices. In fact, Exxon forecast in its energy outlook that for 1977-1990, energy prices would increase faster than the U.S. inflation rate through the 1970s and then rise in tandem with inflation during the 1980s. This was after decades of flat and low energy prices.

The Federal Power Commission, the regulator of interstate natural gas pipelines, allowed emergency sales of gas to these pipelines at prices above the regulated levels, but only for 60-day periods. This was obviously not a realistic solution for the growing nationwide gas shortage. Two weeks following his inauguration, President Carter signed the Emergency Natural Gas Act of 1977, giving him the authority to declare a natural gas emergency and permitting, through July 31, 1977, emergency purchases by interstate pipelines of intrastate gas at unregulated prices. This law set in motion the Carter administration's efforts to draft a national energy plan.

One of the problems was that there were widely different views of the amount of gas resources remaining in the United States. Mobil

**When questioned why he had such a different estimate from the major oil companies, Mr. Hefner responded: “They’re in the oil business and we’re in the gas business”**

Oil Company had published statistics suggesting that there was only 60 trillion cubic feet of gas left to be found in the country. This was a figure that Robert Hefner III, the architect of the Oklahoma deep natural gas drilling boom, estimated was available in the state’s Anadarko Basin, alone. When questioned why he had such a different estimate from the major oil companies, Mr. Hefner responded: “They’re in the oil business and we’re in the gas business.” By this, he meant that the major oil companies estimated gas resources based on the volumes associated with crude oil reserves, and not potential dry-gas supplies. Mr. Hefner’s vision of the deep Anadarko gas resources was reflected in his statement.

On April 18, 1977, President Carter spoke to the nation on national television and declared “the moral equivalent of war” to combat the energy crisis. He warned that the U.S. was confronting a potential “national catastrophe” unless it began conserving fuels and accepting higher energy prices. Two days later he presented the outlines of his energy plan. It included tax incentives and penalties to spur energy conservation, as well as provisions to encourage the conversion of power plants from oil and gas to coal, which was abundant, and the development of unconventional energy sources such as geothermal and solar. With respect to natural gas, rather than decontrolling it as he had hinted in discussions with energy executives, he proposed a ceiling price for new gas to be set at the beginning of 1978 at the energy-equivalent of oil, or \$1.75 per thousand cubic feet of natural gas. He also moved to regulate the price of intrastate gas, which had always been unregulated. The plan did provide for higher price levels for certain categories of high-cost gas, but it was not popular with the industry.

**Prices for these abundant supplies were rapidly bid up by pipelines desperate for new gas supplies**

The jockeying to get favorable energy legislation passed continued all fall, but nothing was accomplished by 1977’s year-end. For the next 11 months, the politicians and lobbyists haggled over the terms of what would eventually be included in the Natural Gas Policy Act of 1978. The legislation was passed by Congress in October, and signed into law in early November. In the reworking of gas regulation, supplies found at depths below 15,000 feet were immediately deregulated. Prices for these abundant supplies were rapidly bid up by pipelines desperate for new gas supplies. In the long-run, this price inflation suppressed natural gas demand, although there were numerous other provisions in the legislation that also impacted gas demand. The incremental gas pricing provisions of the law set the stage for a shift from gas to oil by forcing industrial gas users to accept a disproportionate share of the burden of price increases.

Similarly, the 1978 Powerplant and Industrial Fuel Use Act required any new electric power plant to burn coal instead of gas, which was perceived to be in short supply. It also barred existing power plants from converting to natural gas. A perverse result was that all newly-built power plants in Oklahoma, one of the leading natural gas

**This law further led to a suppression of natural gas and crude oil consumption**

producing states, were forced to use coal imported from Wyoming. This law further led to a suppression of natural gas and crude oil consumption, something that wouldn't become obvious for a few years. The ingredients for the boom were imbedded in the legislation, as well as the seeds for its ultimate bust.

**During the 1971-1978 period, only in 1973 was the oil industry able to generate retained cash flow in excess of its capital expenditures**

In January 1978, the Oklahoma drilling rig count was at a low – 234 active rigs. By July, the count was up to 277. More importantly, the momentum for more drilling was building, driven not only by higher oil and gas prices, but by increases in drilling fund money and commercial bank financing, and in particular, the use of the standby letter of credit to support drilling fund money. Mr. Zweig suggests that the standby letter of credit was first used to entice investors into the Longhorn 1978-II drilling fund. We are not sure if this was merely the first use by Penn Square Bank, or the banking industry as a whole. What we do know, is that this vehicle was used not only by Penn Square Bank, but by Continental Illinois National Bank and Trust, Seattle First National Bank and Chase Manhattan Bank.

Testimony by Dr. Anthony Copp, Vice President of Salomon Brothers, a leading Wall Street investment firm, before the Senate Subcommittee on Energy and Foundations of the Committee on Finance in the spring of 1979 demonstrated the importance of outside funding for the oil and gas business. Dr. Copp showed that during the 1971-1978 period, only in 1973 was the oil industry able to generate retained cash flow in excess of its capital expenditures. Annual capital expenditures in excess of retained cash flow ranged from a low of \$76 million in 1974 to a high of \$6.5 billion in 1975. Over the entire period, the total financing deficit was \$16.9 billion.

In order to finance this capital expenditure deficit, to pay back maturing long-term debt and to maintain working capital at acceptable levels, the oil companies in the Salomon Brothers analysis raised more than \$46.3 billion during 1971-1978 through the issuance of long-term debt and new equity. Drilling funds were also a source of the funding for the companies' capital expenditures.

**Drilling funds were at their peak in the 1960s as a source of funding for the oil and gas industry**

According to testimony at these hearings by James Wallace III and Harold Hammar, respectively of the Energy Economics and Petroleum Divisions of The Chase Manhattan Bank, drilling funds were at their peak in the 1960s as a source of funding for the oil and gas industry. In their prepared statement to the subcommittee, the two bankers wrote that drilling funds "in the aggregate raised somewhat over a billion dollars per year publicly and perhaps a similar amount privately. The drilling fund industry history was one of successes, large failures and frauds. Today, as a result of recent changes in the depletion law and in the tax treatment of individuals, the role of drilling funds is much more limited than in the past. In 1977, approximately \$500 million was raised publicly by drilling funds, a rather small sum versus the tens of billions the industry needs."

**Investors in drilling funds only had to put up 25% of their total commitment in cash, and then obtain letters of credit from their own banks in favor of Penn Square Bank for the difference**

While a small player in industry funding, Penn Square Bank, with the aid of standby letters of credit, magnified its importance and its profits. Investors in drilling funds only had to put up 25% of their total commitment in cash, and then obtain letters of credit from their own banks in favor of Penn Square Bank for the difference. Using those letters of credit as collateral, Penn Square Bank lent the partnership the remaining 75% of the fund's balance plus an "origination fee" of ½% to 1% of the loan amount. In turn, Continental Illinois, or other major banks, would purchase 87% of the loan from Penn Square Bank, leaving its exposure at only 10% of the gross amount of the drilling fund. At the end of the 21-month period of the loan, it was anticipated that the loan would be rolled into a production loan that would be repaid from the sale of oil and gas output from the wells.

**Those participants in the drilling fund financing were often earning 2 ½% above their prime rate at a time when competition for loans was intense**

The individual drilling fund investor would be able to write off 70% of the investment in the drilling program for the same year that Longhorn incurred drilling costs. Someone in the 50% income tax bracket making a minimum \$150,000 investment would be able to write off \$75,000 by putting up only 25%, or \$37,500, in cash. That was a savings of \$37,500 on the investor's tax bill, and possibly more if money was borrowed to pay the taxes.

This was an attractive source of profits for the large banks whose "prime lending rate" was below that of Penn Square Bank's rate. With Penn Square Bank's prime rate at least half a percentage point above the rate of the big banks, those participants in the drilling fund financing were often earning 2 ½% above their prime rate at a time when competition for loans was intense and the spread between loan charges and a bank's cost of funds was being squeezed.

**In December 1980, Mobil Oil signed a farm-out with GHK, giving it \$32 million as a down payment on a \$200 million commitment to drill more than a hundred Anadarko Basin wells**

As the 1970s were drawing to a close, the natural gas boom in Oklahoma was underway! All the ingredients for the boom were present: significant natural gas resources in deep deposits; decontrolled prices for this expensive supply; customers desperate for the natural gas and willing to pay inflated prices; and a commercial bank with avenues to yield hungry large commercial banks outside of Oklahoma and a can't-miss profit-making vehicle. The only things missing were drilling rigs and drilling prospects. Voilà, a drilling rig building boom and lots of acreage deals!

Not all the drilling deals involved independents. In fact, Mr. Hefner's vision of the riches of the deep Anadarko Basin was reflected in a deal Mobil Oil made with his company, GHK. In December 1980, Mobil Oil signed a farm-out with GHK, giving it \$32 million as a down payment on a \$200 million commitment to drill more than a hundred Anadarko Basin wells. In return, Mobil Oil received half of GHK's acreage in the Elk City area, and GHK received a carried interest. According to a GHK executive, it was the biggest onshore domestic farm-out ever at that time. The significance of the farm-out was that

**By 1981, the average bonus was up to \$800 per acre, with some mineral owners in particularly hot areas receiving upwards of \$10,000 per acre**

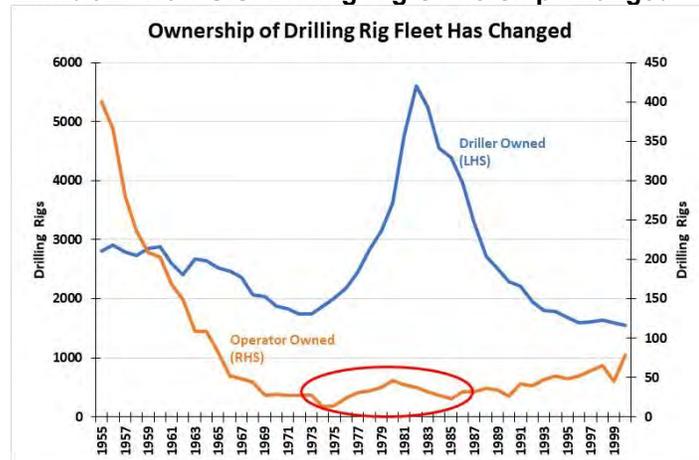
**There was only one year between 1963 and 1983 when there wasn't immediate availability of drilling rigs in the state**

it confirmed that the majors were buying into what had, up until that point, largely been an independents' playground. (Was that deal a precursor of the transition underway in the shale basins?)

According to Mr. Zweig, in 1978, the average bonus in the Anadarko was \$250 per acre for a five-year lease with a one-eighth royalty. By 1980, that had doubled to \$500 for a three-year lease with a three-sixteenths royalty. By 1981, the average bonus was up to \$800 per acre, with some mineral owners in particularly hot areas receiving upwards of \$10,000 per acre. The escalation in bonuses and royalties was fed by informal news networks that spread the details of the latest high-valued deals in a matter of hours. Promoters were also active, buying and selling leases at ever-escalating prices and never having to put up a dime, which was like minting money.

A former energy lender with First National Bank of Oklahoma City, Rob Gilbert, reportedly noted that there was only one year between 1963 and 1983 when there wasn't immediate availability of drilling rigs in the state. That one year was 1981! For whatever reason, oil and gas producers began to believe that they needed to own a few rigs to assure availability. This was the reverse of the historical trend that saw oil and gas producers shed their rig fleets – even the majors who had used them for training drilling engineers. (Note the upturn within the red circle in Exhibit 2.) The wish of producers to own a few rigs further added to the rig building boom.

**Exhibit 2. How U.S. Drilling Rig Ownership Changed**



Source: Reed Tool, PPHB

**The largest rig purchase in history**

A shocking announcement came from Continental Drilling that it had placed an order with Dresser Industries for the construction of 42 new drilling rigs at a total cost of \$263 million, the largest rig purchase in history. The financing was to come from Continental Illinois, Chase Manhattan and Seafirst. Mr. Zweig pointed out that Seafirst was rapidly becoming the world's biggest rig lender. In less than two years, it would become the world's biggest rig owner!

**A rig built in 1972 for \$1.8 million could have been sold for \$7 million in 1981**

According to Mr. Gilbert, a drilling rig is worth nothing more than scrap value, what it will sell for, or the cash flow it will generate over its life. The boom changed some of that thinking. A rig built in 1972 for \$1.8 million could have been sold for \$7 million in 1981. Oilfield equipment costs were escalating at a rate of 1.5% per month. How could you go wrong lending on new drilling equipment?

We remember that during this time, independent oil operator Tom Brown decided to go public. He owned a handful of drilling rigs, like many of his peers. Over the years, at auctions he had bought used rig hardware to be used as spare parts for his rigs. As he was walking through his yard with the investment bankers and analysts doing due diligence for the IPO, he was asked about the pile of “junk” in the corner of the yard. After hearing it was used rig equipment, the bankers told him it needed to be appraised. It turned out that it added a chunk of asset value to the balance sheet. (Unfortunately, we don’t remember the dollar amount.)

**The only solution as the boom ended was to see surplus drilling rigs acquired by industry consolidators, or cut up and sold for scrap**

With expectations of oil and gas prices heading steadily higher, how could rig loans be bad? If bankers had adhered to more conservative lending practices, maybe the damage would have been less. Certainly, there might not have been as many drilling rigs constructed, which might have led to higher drilling costs that would have made many of the drilling prospects uneconomic. But given the euphoria about the future of the business after years of struggles, and the readily available financing provided by bankers who thought they had created perpetual money-machines, the drilling industry rapidly went from booming, only to eventually become a waste land. The only solution as the boom ended was to see surplus drilling rigs acquired by industry consolidators, or cut up and sold for scrap. Neither option was readily embraced by rig owners. The fleet only contracted once rig ownership changed and the new owners focused on extracting cash from the assets.

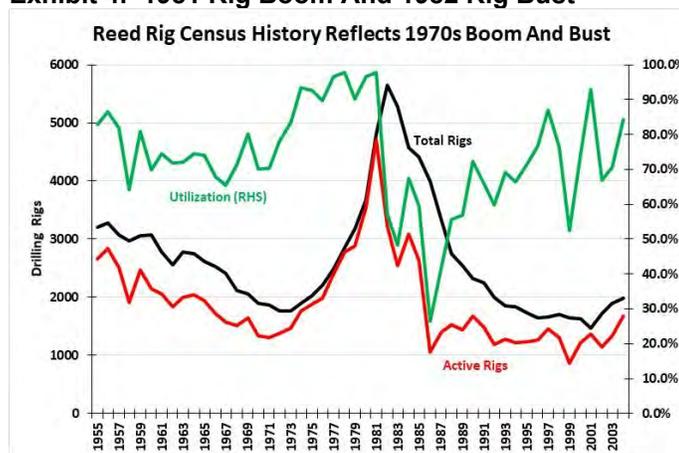
**Exhibit 3. Rig Building Capacity In 1981**

Company	Estimate Total 1981 Production
National Supply	360
Ideco	115
Skytop/Brewster	115
Oilwell (U.S. Steel)	75
Emsco	70
Wilson	50
Cabot	50
Gardner Denver	40
Unit Rig	40
OIME	40
All other manufacturers	255
<b>TOTAL</b>	<b>1,210</b>

Source: The Land Rig Newsletter, PPHB

A 1981 survey of drilling rig construction capacity, at the peak in domestic drilling activity, showed the industry capable of expanding the fleet by more than 20%. As always happens in a drilling downturn, the available supply of rigs grows beyond the peak in activity until new rig construction ceases.

#### Exhibit 4. 1981 Rig Boom And 1982 Rig Bust



Source: Reed Tool, PPHB

**According to Reed Tool, the industry added 1,131 rigs in 1981 (almost full capacity for builders) and another 841 in 1982**

The Reed Tool Rig Census was an annual assessment of the drilling rig fleet and general rig activity. It only required that a rig be active for a portion of the year to be counted as active, rather than weekly, as in the Baker Hughes rig count. In Exhibit 4, the drilling activity peak (red line) occurred in 1981 when the industry's utilization reached 97.9%, but the available fleet peak didn't arrive until the following year. According to Reed Tool, the industry added 1,131 rigs in 1981 (almost full capacity for builders) and another 841 in 1982. From that point forward the fleet contracted steadily. The pace of the contraction fluctuated based on the industry's optimism or pessimism. It may also have been impacted by delays in ownership changes due to bankruptcy proceedings. It was 14 years between the peak in fleet size and the first year of the next rig fleet expansion. During that downturn, 3,995 drilling rigs were eliminated from the fleet.

**The number of rigs needing to be eliminated will be much less**

We already have seen drilling rigs being cut up in this cycle's downturn. Because the total fleet never grew to be as large as during the 1980s due to increased rig efficiency from technology advances, the number of rigs needing to be eliminated will be much less. The size of the future rig fleet will be based on operator expectations for how many drilling rigs will be needed to meet future oil and gas production projections, and over what timeframe. Our guess is that the future rig fleet will be smaller than its most recent maximum size.

The next phase of the energy industry history can only be told with an understanding of the impact of what occurred in Oklahoma City

**In 1984, there were 79 failures and another 120 in 1985, including the Continental Bank of Illinois, the nation's 6th largest commercial bank**

on the banking industry in the Southwest, and, in turn, on how banks dealt with oil and gas and oilfield service companies. As we pointed out earlier, the Penn Square Bank collapse forced the national banking regulators to change how they dealt with failing banks, and how they came to grips with the “too big to fail” approach closing down failed banks.

According to William Seidman, the former head of the Federal Deposit Insurance Corporation (FDIC) during the Reagan and Bush administrations, in his book Full Faith and Credit: The Great S&L Debacle and Other Washington Sagas, the upturn in bank failures after Penn Square Bank's collapse created a challenge for regulators. Prior to 1984, the nation averaged 10-15 bank failures a year. In 1984, there were 79 failures and another 120 in 1985, including the Continental Bank of Illinois, the nation's 6<sup>th</sup> largest commercial bank. This pattern was disturbing, especially when the regulators realized that Continental Illinois's problems arose from its relationship with Penn Square Bank, a second-tier bank in Oklahoma. It was only ten years old and dwarfed by the old-line Bank of Oklahoma and the First National Bank and Trust Company of Oklahoma City who dominated the traditional assets and deposits of the city and state. James McCollom's book, The Continental Affair: The Rise and Fall of The Continental Illinois Bank pointed out that the Penn Square Bank was larger than any of the ten bank failures in 1981, but no bigger than the West Texas banks that failed in 1982 and 1983. The problem was that although Penn Square Bank only had \$33 million in capital, it had managed to attract a lot of money – deposits, loans and participations – from the largest and best-known banks across the country.

**The problem was that Continental Illinois had purchased \$1,056,000,000 in loans from the bank**

In late June 1982, a week before the failure of Penn Square Bank, the CEO of Continental Illinois was made aware of his bank's relationship with the soon-to-be closed bank. He immediately assembled a team to investigate the extent of the relationship. Continental Illinois was a wholesale bank, meaning it dealt largely with large corporations and other large commercial banks. Among its 2,600 correspondent relationships, Penn Square Bank ranked somewhere in the middle. A big bank was one possessing over \$1 billion in deposits, and there were slightly over 400 of them in the nation, and 95% of them were customers of Continental Illinois. Penn Square Bank was not a member of the 400. The problem was that Continental Illinois had purchased \$1,056,000,000 in loans from the bank. This total was six-times the bank's lending limit, but because it was comprised of 250-300 separate loans, virtually all of which were under \$5 million, the exposure to the debacle was unknown. Not for long!

When the rumor of the Penn Square Bank failure emerged, bank analysts began questioning who in the banking world would be hurt. Given the size of the bank, the damage to other banks was thought to be minimal. The scope of damage emerged when Continental

**Actual credit losses charged against reserves totaled \$82.2 million, of which \$45.1 million was from Penn Square Bank**

Illinois reported its second quarter 1982 results – an operating loss of nearly \$61 million, as well as an addition to its loan-loss reserve of \$262 million, of which \$220 million was due to Penn Square Bank. Actual credit losses charged against reserves totaled \$82.2 million, of which \$45.1 million was from Penn Square Bank. Additionally, over a quarter of the nearly half a billion dollars increase in non-performing loans was related to Penn Square Bank loans.

**Where Continental Illinois began to be hurt, however, was in its cost of funding loans**

The loss was a huge embarrassment, but with \$50 billion in assets, it had only a minor impact on the health of Continental Illinois. It added to the list of boneheaded mistakes of a handful of large commercial banks, both in the United States and worldwide. Where Continental Illinois began to be hurt, however, was in its cost of funding loans. Certificate of deposits, which were on a par with all its peers before the quarter's financial results were reported, suddenly needed a 20-basis point premium. Before long, that premium rose to 100 basis points, and ultimately the premium reached 125 basis points. This financial punishment eroded a major source of the bank's income, the spread between loan income and funding costs.

Continental Illinois went through a major management shake-up, a direct result of the Penn Square Bank experience. For a bank that was known as one of the best-managed large commercial banks, the experience was devastating. The problems of the bad energy loans, coupled with the profitability squeeze and ongoing problems in attracting and retaining deposits became the drip-drip-drip eroding the strength of the bank.

On a Saturday in late July 1984, Continental Illinois released a 70-page, single-spaced report on its investigation of the Penn Square Bank debacle of two years earlier. The report's release came after *The Wall Street Journal* and *The Chicago Sun-Times* pushed for its release. Two Federal courts had ordered the release of the data in the report to be part of the official court record of various shareholder lawsuits.

**The problem was that deposits were flowing out of Continental Illinois in response to a Reuters rumor in May about the possibility of the bank's bankruptcy or insolvency**

The report highlighted negligence by lending officers in the energy group, as well as senior management ignoring "red flags." Loan documentation was a problem, as well as faulty controls, and a lack of attention to these problems by the bank's auditors. The result, however, was that the Penn Square Bank issue was put to bed. The problem was that deposits were flowing out of Continental Illinois in response to a *Reuters* rumor in May about the possibility of the bank's bankruptcy or insolvency, as well as the potential of a take-over of the bank by either a Japanese bank, or even a major Chicago or New York City commercial bank.

The May *Reuters* rumors had been denied by the bank's senior management, but the damage was done. A billion dollars in certificates of deposits from Japanese banks were not renewed.

**A mid-July *Wall Street Journal* story estimated a total of \$20 billion in support had been provided the bank to offset its deposit outflow, half its total deposits before the run**

**While the Penn Square Bank relationship had helped to undo Continental Illinois, its love-affair with energy loans also played a role**

This was the start of the run on the bank's deposits that ultimately ended the life of Continental Illinois as an independent bank. About a week after the *Reuters* rumor, Japanese news wires published a story saying that the U.S. Comptroller of the Currency "had asked Japanese or other banks or securities firms to assist Continental...."

The Comptroller, in response to the news story, and after consultation with Continental Illinois's senior management, violated his office's long-standing policy and issued a press release denying the rumors that the bank, the nation's 6<sup>th</sup> largest, was in serious financial trouble. The problem for Continental Illinois was that about 20% of its deposits were overnight deposits from other commercial banks. The government provided some support to offset the loss of deposits. A formal government support package was announced on May 17, 1984, which included \$2 billion from the FDIC and \$5.5 billion arranged from a consortium of U.S. banks. But, the run on the bank was underway, and in a massive way. Six weeks later, the bank had lost \$12 billion in deposits. A mid-July *Wall Street Journal* story estimated a total of \$20 billion in support had been provided the bank to offset its deposit outflow, half its total deposits before the run. At this point, the end of the bank's independence was assured, and eventually the FDIC owned 80% of the bank with its existing shareholders holding the remaining 20%. As part of the final step, the FDIC, Federal Reserve and Comptroller of the Currency jointly agreed to guarantee full protection of all the depositors and general creditors of the bank.

The conclusion of the Continental Illinois saga was that the regulators had taken the correct action, but we were now in a banking world where "too big to fail" judgements would become the standard for determining remedies for financial institutions that failed to adhere to sound, conservative commercial lending policies. While the Penn Square Bank relationship had helped to undo Continental Illinois, its love-affair with energy loans also played a role. One such failed loan was the \$173 million lent to Nucorp Energy Corporation, a tubular goods supplier who had embarked on a strategy of buying up seemingly profitable oil- and gas-related service companies. Nucorp was run by R.L. Burns, described by Mr. Zweig as the "silver-haired, silver-tongued" chairman, who was "aggressive and gregarious." One of his moves had been to recruit A.J. Pearson, one of Continental Illinois's leading energy bankers, providing the bank comfort as it ratcheted up its loans to Nucorp. It was later discovered that from December 1980 onward, senior executives were "cooking the books" by recording tubular goods sales that were not actually shipped, or for which no cash was received.

Mr. Burns was known by the bank and Mr. Pearson, as earlier they had bet \$125 million on him and his oil and coal company, which nearly failed in 1978. During the 1979-1980 period, as an analyst for Citibank Investment Management, we visited with Mr. Burns to research Nucorp. He was seated behind a huge oak desk with his

back to a huge window of a top-floor office in a building overlooking San Diego, the bay and Lindberg Airport. During our interview, we were constantly presented with views of airplanes floating to landings or curving over San Diego Bay after taking off from the airport. More importantly, we were interrupted repeatedly as Mr. Burns fielded phone calls from stockbrokers wanting to discuss the latest details of Nucorp's stock trading activity. Fortunately, we can say, we avoided that disaster! The bankruptcy of Nucorp was merely one more blemish on the energy lending record of Continental Illinois.

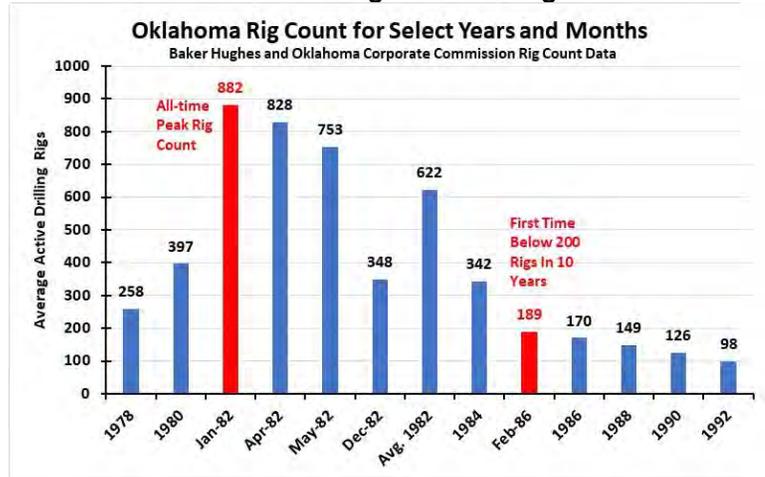
**By the time the gas madness peaked in 1981, deep gas was selling for as much as \$10.10 per thousand cubic feet (Mcf), the equivalent of nearly \$60 per barrel at a time when oil was selling for about \$40 on the international market**

What drove the oil and gas drilling boom was higher prices and expectations that, due to perceived shortages of these commodities, their future prices would be substantially higher. In the case of Oklahoma, it was prospects for deep natural gas that drove drilling activity. The deregulation of deep gas by the Carter administration led to a feeding frenzy by pipelines desperate to secure these abundant supplies. By the time the gas madness peaked in 1981, deep gas was selling for as much as \$10.10 per thousand cubic feet (Mcf), the equivalent of nearly \$60 per barrel at a time when oil was selling for about \$40 on the international market.

**The result was that Transco rolled back its gas prices from an average of \$8.50/Mcf to \$5 for all production purchased**

As expected, high gas prices did have an impact on demand, which was further hurt by the absence of more Arctic cold winters. In the spring of 1982, Transcontinental Gas Pipeline Corporation executives concluded that gas demand was softening and that summer demand would be below normal. They had begun a study the prior year examining the relationship between crude oil and natural gas prices. They analyzed the impact that a dollar for dollar drop in the price of crude oil would have on the price of gas. Transco management concluded that the gas market would come under severe pressure in the months ahead. Therefore, the company announced it would exercise any "market out" provisions in existing gas purchase contracts. The result was that Transco rolled back its gas prices from an average of \$8.50/Mcf to \$5 for all production purchased. While this move did not have any direct impact in Oklahoma, as Transco did not purchase gas there, it did roil the national gas market. Transco was severely criticized by gas producers and other gas pipelines, upset with what the move did to gas pricing. In a matter of weeks, however, the other major gas pipelines followed the Transco move.

**Exhibit 5. How Oklahoma Rig Count Changed Over Time**

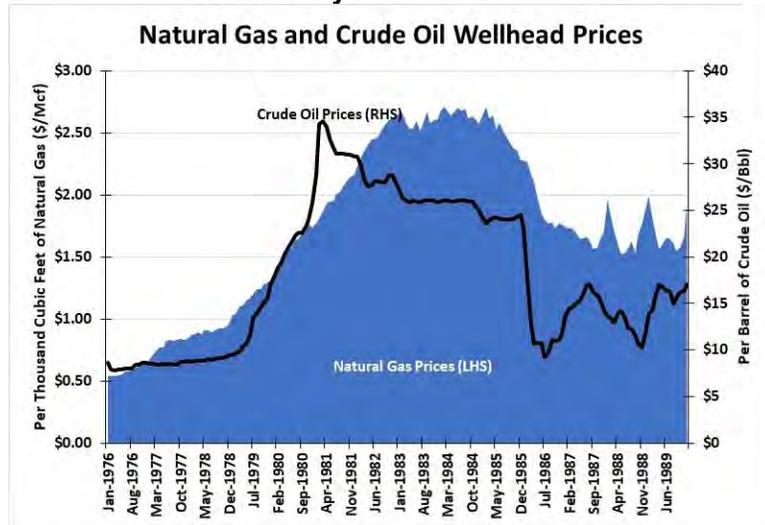


Source: OK Corporate Commission, Hughes Tool, PPHB

**Domestic crude oil prices peaked in March 1981, which resulted in a peak for the U.S. drilling rig count by the end of December**

The Transco gas pricing move had an impact on Oklahoma drilling, but what was going on with crude oil was also significant. Domestic crude oil prices peaked in March 1981, which resulted in a peak for the U.S. drilling rig count by the end of December. Natural gas wellhead prices did not peak until January 1983, due to the impact of regulatory price decontrol that lifted the average wellhead price in the interim. Even with reduced deep gas pricing following the Transco move, the higher prices lifted the average gas price. However, the move by other gas buyers in Oklahoma following Transco’s action decimated deep gas drilling and helped accelerate the state’s drilling decline during 1982-1983. As one Oklahoma oil man put it, “The industry collapsed while we were out to lunch.”

**Exhibit 6. U.S. Commodity Prices In Boom And Bust**



Source: EIA, PPHB

**Not only did we find out who was naked, we also learned about the fraud and mismanagement that permeated the oil patch during the boom**

The dramatic change for oilfield activity after oil prices peaked in 1981 signaled the end of the boom. Virtually no one was prepared for such an abrupt end. As Warren Buffett is famous for saying: when the tide goes out, you quickly see who was swimming naked. Not only did we find out who was naked, we also learned about the fraud and mismanagement that permeated the oil patch during the boom. Mr. Zweig recalls one of the jokes making the rounds in Oklahoma City years after the Penn Square Bank failure:

“There is, for example, the story about the oilman who shows up for a hearing and is asked by a creditor’s lawyer, ‘Well what happened to the money?’

“The oilman: ‘I spent a third of it on a jet, a Mercedes, and Vegas. Another third went for women, dope, and booze.’ He hesitated for a moment until the lawyer asked him, ‘Well what happened to the other third?’ The oilman: ‘Oh, we just pissed that away.’”

There were also stories about oil-patch banks that offered a choice of a set of china or a drilling rig to anyone opening a new account. And who can forget the bumper sticker: Lord, give me one more boom and I promise not to screw it up!

**Real estate was their choice, which later showed that no one asked “What if?”**

Gallows humor spread throughout the oil patch, but like all industry busts, the resolution was years in the making. For the Southwest banking industry, its efforts to diversify away from over-reliance on oil and gas, as commodity prices turned down, proved to be disastrous. Real estate was their choice, which later showed that no one asked “What if?”

**The state’s banking laws also prevented banks from outside the state from entering and buying Texas banks, which would have spread the region’s oil and gas lending pain nationally**

As William Seidman cites, “In 1985, Texas had 1,935 banks, more than any other state; half of all the banks on the FDIC problem list called Texas home.” The proliferation of banks in the state was a result of its unitary banking law, meaning banks couldn’t open branches beyond a few hundred feet of its home office to enable drive-in banking facilities. Banks could form multi-bank holding companies to own stand-alone banks under a common ownership. The state’s banking laws led to a proliferation of small banks requiring little capital, but this meant they were highly vulnerable to economic problems or poor management. Most of these banks received national bank charters, which required them to be insured by the FDIC. The state’s banking laws also prevented banks from outside the state from entering and buying Texas banks, which would have spread the region’s oil and gas lending pain nationally.

A late 1990s study by the staff of the FDIC, called [An Examination of the Banking Crises of the 1980s and Early 1990s](#), which was later discussed in a symposium involving many of the leading banking regulators at the time, examined the problems and issues confronted

by the banks. The participants were looking for guidance in dealing with future banking crises. The study’s authors began the chapter on the banking problems in the Southwest with the following:

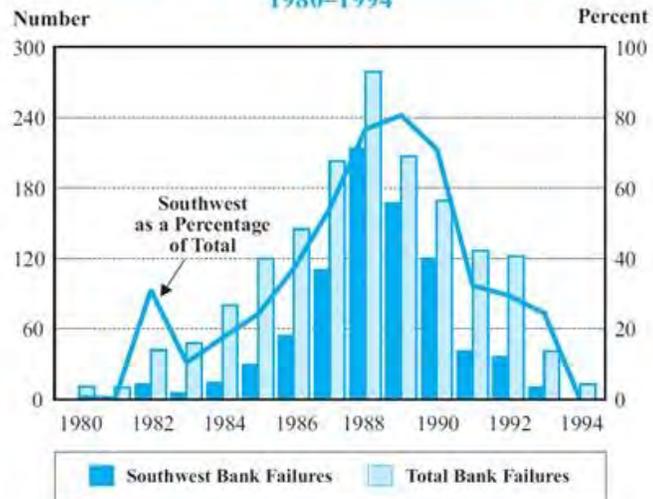
**“From 1987 through 1989, 71 percent of the banks that failed in the United States were southwestern banks (491 out of 689)”**

“Of the total failure-resolution costs borne by the FDIC from 1986 to 1994, half (\$15.3 billion) was accounted for by southwestern bank failures. (This included losses of nearly \$6.3 billion in 1988 and \$5.1 billion in 1989 – 91.1 percent and 82 percent, respectively, of total FDIC failure-resolution costs for those two years.) From 1987 through 1989, 71 percent of the banks that failed in the United States were southwestern banks (491 out of 689), and so were some of the most significant failures, such as banks within the First City Bancorporation, First RepublicBank Corporation, and MCorp holding companies. The pervasiveness of the problems facing the region’s depository institutions is indicated by the fact that the biggest savings and loan debacle also occurred in the Southwest, with Texas alone accounting for 18.3 percent of the Resolution Trust Corporation’s resolutions and 29.2 percent of its resolution costs.

**“From 1980 through 1989, 425 Texas commercial banks failed, including 9 of the state’s 10 largest bank holding companies”**

“The banking collapse in the Southwest was especially devastating to the Texas banking industry. From 1980 through 1989, 425 Texas commercial banks failed, including 9 of the state’s 10 largest bank holding companies. In 1988, 175 Texas banks failed with assets of \$47.3 billion – 25 percent of the state’s 1987 year-end banking assets. The following year 134 Texas banks failed with assets of \$23.2 billion – 13.6 percent of the state’s banking assets.”

**Exhibit 7. The Decimation Of Southwest Banking**  
*Bank Failures, Southwest versus U.S., 1980–1994*



Source: FDIC

**Bankers particularly loved the upfront payments that came from developers, as that helped offset the losses they were accumulating on their oil and gas loans**

What went on in Texas with bank failures was mirrored in Oklahoma and Louisiana. The dramatic change in Texas banks was their shift into real estate lending, as bankers and developers attempted to capitalize on the wealth accumulated in the region from the high oil and gas prices and oilfield activity of the 1970s. Bankers particularly loved the upfront payments that came from developers, as that helped offset the losses they were accumulating on their oil and gas loans. The problem, however, was when job losses mounted and relative economic growth declined in the Southwest, while other regions boomed due to falling oil and gas prices. This was the reverse of what had driven the boom in the Southwest.

A problem Texas banks experienced was the disbelief about the oil and gas downturn. If you never asked “what if,” you were at risk of piling on more bad lending decisions. The FDIC study highlighted this point. As the authors wrote:

**“Even when a continued fall in oil prices was considered possible, bankers sometimes displayed a relaxed or indifferent attitude toward the eventuality”**

“Many banks compounded their troubles by presuming that the weakening in oil prices was merely temporary. For example, James Cochrane, chief economist of Texas Commerce Bancshares, argued that the low level of exploration in mid-1985 would result in future shortages of oil and gas supplies and that ‘by the end of the decade, we will have a serious inability to supply energy products. . . We continue to believe in the long-term future of the industry.’ In March 1986, Eugene C. Fiedorek, executive vice president of RepublicBank of Dallas, told financial analysts that ‘RepublicBank remains committed to the energy industry; it will make new loans based on expectations that oil prices will soon rebound to about \$18 a barrel.’ In late April 1986, James Bruce, chief financial officer of Banks of Mid-America of Oklahoma, said, ‘I don’t know anyone who in their gut believes that prices will stay at these levels. The feeling here is that Saudi Arabia is going to prove its point [by flooding the market with oil] and then prices will recover. A hell of a lot of money that’s fairly smart says they’re going to recover.’ Even when a continued fall in oil prices was considered possible, bankers sometimes displayed a relaxed or indifferent attitude toward the eventuality. For example, in late 1985, when oil fell in just a couple of weeks from \$32 to around \$25 a barrel, Larry Helm, executive vice president and head of the energy division of InterFirst Corp. of Dallas, felt that ‘if the price [of oil] drops to the \$20 range, that might cause some problems on some credits but the magnitude of those problems would not be so great.’”

For those banks that sought refuge from energy lending in the real estate sector, they experienced another market that rapidly became overheated. In Texas, between 1981 and 1983, the number of residential building permits doubled from 211,705 to 424,854. The value of nonresidential permits escalated from \$7.6 billion in 1980 to

**In 1986, the economic downturn cost Texas 100,000 construction jobs, equal to 40% of the state's total job losses, although construction accounted for only 6.7% of Texas total employment**

approximately \$10 billion to \$12 billion annually between 1981 and 1985. With a boom such as that, what could possibly go wrong? In 1986, the economic downturn cost Texas 100,000 construction jobs, equal to 40% of the state's total job losses, although construction accounted for only 6.7% of Texas total employment. People began leaving the state rather than coming. Because building, especially of office towers, is unable to respond to changed economic conditions quickly, the office markets in Dallas, Houston and Oklahoma City went from being short of space to well overbuilt in the span of two years.

#### Exhibit 8. From Boom To Bust In Office Rental Market

##### Office Vacancy Rates, Southwestern Cities versus U.S., 1980-1994



Source: CB Commercial/Torto Wheaton Research, *The Office Outlook Report* (Fall 1995).

Source: FDIC

To gain an appreciation of the magnitude of the residential real estate overbuilding, one only needs to contemplate the following figures for Houston:

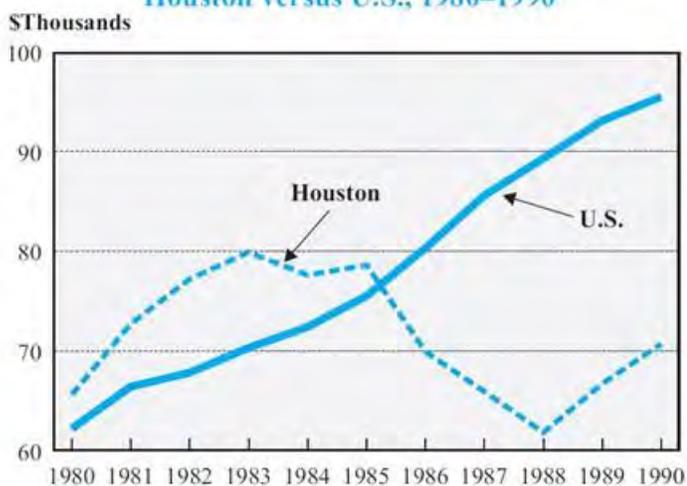
- Between 1980 and 1982, newly issued residential building permits in Houston rose 88%, while the number of single-family housing starts increased by 46%. Nationally, permits and housing starts declined by 17% and 22%, respectively.
- From 1982 to 1987, Houston residential building permits fell 91%, while single-family housing starts dropped 75%. On the other hand, nationally, permits rose 52% and single-family starts increased 73%.

**The costliest housing market debacle since the Great Depression**

The Houston real estate bust was the costliest housing market debacle since the Great Depression. At the start of 1987, one of every six homes and apartments in the city was vacant. The

associated plunge in real estate values cost Harris County (Houston's home) \$8 billion in its tax base. The sharp fall in median home values led to unemployed homeowners who could not find other work to walk away from their homes and mortgages, often picking up and moving out of state.

**Exhibit 9. Houston's Residential Market Boom And Bust**  
**Median Home Resale Prices,**  
**Houston versus U.S., 1980–1990**



Source: National Association of Realtors, *Home Sales*.

Source: FDIC

The result was that at the end of 1985, projections called for total foreclosures in Houston for 1984-1986 to exceed 70,000 homes. That was about the same number as the total new homes constructed in Detroit, Chicago and Seattle, combined.

The combination of the oil and gas downturn and the real estate collapse created significant banking problems in the Southwest. It became acute when on September 10, 1987, the FDIC was forced to inject \$1 billion into Houston's First City's holding company. This was the second largest federal bank rescue in FDIC history, up until then. Once again, the "too big to fail" philosophy drove the banking regulators to act to prevent what they thought might become an even worse outcome for the commercial banking sector.

While the First City failure marked the next phase in massive bank failures, it also marked the start of the restructuring period for the oil and gas and oilfield service industries. While the bumper stickers had proclaimed: Stay alive 'til '85; Get your fix in '86; and Chapter 11 in '87, the gallows humor was dismissed and the industry rolled up its sleeves and began the difficult task of resizing the industry and putting it on a profitable footing. Similarly, the Texas banking industry was restructuring, which resulted in the number of banks in the state shrinking from 1,800 in 1985 to only 1,100 in 1992. These

**This was the second largest federal bank rescue in FDIC history, up until then**

**The gallows humor was dismissed and the industry rolled up its sleeves and began the difficult task of resizing the industry and putting it on a profitable footing**

**Just as in the current industry downturn, debt was the albatross around the neck of the industry**

industry restructurings were not easy tasks, nor ones that could be done quickly. For the energy business, the restructuring often required the help of the bankruptcy courts, along with scrap metal dealers. Just as in the current industry downturn, debt was the albatross around the neck of the industry. Just how big an albatross was not clear, much like now, but the road to profitability was clear – debt had to be reduced. How it was achieved often involved twists and turns in the road to recovery. Will the 1990s recovery path provide a roadmap for the future?

## Welcome To Shipping's Low-Sulphur World – Still Operating

It is early January 2020 and the world has not ended – at least not yet. Despite fears of a catastrophic opening to this year, January 1<sup>st</sup> turned out much like January 1<sup>st</sup>, 2000, did, when Y2K fears were expected to shut down the world's computers and, in turn, the global economy. The 2000 fears proved overblown, although there were isolated instances of computer programs not functioning, primarily because they hadn't been properly updated. The important thing was that the world's economy continued was functioning on January 2<sup>nd</sup> of 2000.

**The dire economic expectation was predicated on the fear that the enforced switching of the global shipping industry to low-sulfur fuel oil would cause a significant spike in crude oil prices**

This time, the dire economic expectation was predicated on the fear that the enforced switching of the global shipping industry to low-sulfur fuel oil would cause a significant spike in crude oil prices, creating serious economic consequences - possibly even a global economic collapse. Remember, the majority of major economic downturns have been preceded by oil price spikes. What would cause this spike? It would be the International Maritime Organization's (IMO) low-sulfur fuel oil rule (IMO 2020, as the rule is referred to) requiring ships to switch from burning fuels with up to a 3.5% sulfur content to ones with only a 0.5% sulfur content.

The rationale behind the oil price spike was simple: There wasn't enough worldwide refining capacity, nor possibly light, sweet crude oil, to produce the volumes of low-sulfur fuel oil needed by the global shipping industry. To address the supply shortfall, ships would buy low-sulfur diesel fuel, which would disrupt those transportation systems relying on diesel to power their vehicles. At the same time, the oil industry would be left with significant volumes of high-sulfur fuel oil without a market. This outlook suggested a major disruption of the global energy business.

**At the heart of the problem is the composition of the world's refining business**

At the heart of the problem is the composition of the world's refining business. It is largely divided into two parts, categorized by the level of sophistication of the refinery. Simple ones produce a limited slate of refined products and require feedstocks that closely match the quality of the output. Sophisticated refineries can process a wider variety of crude oil inputs (light vs. heavy; sweet vs. sour) while producing more light oil products with low-sulfur content. These

**Overnight, IMO 2020 would force the 55,000-plus tankers, dry bulkers, container ships and other commercial vessels plying the world's oceans to switch out their fuel supply**

sophisticated refineries are also capable of utilizing high-sulfur residual oil, a prime output from simple refineries, to produce more light oil products. The unknown for those offering dire forecasts due to IMO 2020 was how quickly and with what volumes could the refining industry increase its output of low-sulfur fuel oil. Secondly, there was the issue of what would happen to the production of high-sulfur fuel oils.

Overnight, IMO 2020 would force the 55,000-plus tankers, dry bulkers, container ships and other commercial vessels plying the world's oceans to switch out their fuel supply. The switch, predicated on the shipping industry's desire to reduce its contribution to global carbon emissions, presented a herculean task for the refining and marine fuels logistic businesses. All of this effort is to hopefully reduce the shipping industry's 2% to 3% contribution to the world's carbon emissions.

Forecasters in 2018, examining the impact of IMO 2020, did a simple analysis that the current 3.5-4.0 million barrels a day of fuel consumed by the global shipping industry would all have to be converted from high-sulfur to low-sulfur fuel oil within 18 months or less. Since major refinery reconfigurations often require years for planning and construction – the remaining months until IMO 2020 went into effect would prove insufficient time for the refining industry to gear up to meet demand. That would translate into significant competition for diesel fuel, driving its price up sharply. The analysis concluded that the market disruptions would send world oil prices to \$250 per barrel, with catastrophic economic consequences.

**What some forecasters have underestimated is that many major refiners had already begun work to upgrade their units to meet the new fuel rule, knowing it would happen eventually, if not in 2020**

When IMO confirmed its rule would go into effect on January 1, 2020, the race to comply heated up. What some forecasters have underestimated is that many major refiners had already begun work to upgrade their units to meet the new fuel rule, knowing it would happen eventually, if not in 2020. At the same time, the shipping industry was acting on other options for meeting the low-sulfur fuel oil requirement. Installing exhaust gas scrubbers while continuing to use high-sulfur fuel oil was an option. Finding fuel oil blends that met the IMO requirement was undertaken. Switching propulsion systems to use liquefied natural gas (LNG), biofuels, or even electric power were also explored. These efforts required economic assessments of the vessels being considered for modifications. How much longer would the vessel operate? What did a scrubber cost? How available, and at what cost, would other fuels be? Moreover, where would they be available? Ultimately, the economic analysis had to determine if the modified vessels could be matched to long-term charters where some or all of the additional cost could be recouped.

For smaller ships traveling short distances on a regular basis (think ferries and local cargo transporters) employing electric power has become an option. Shipowners considered slow-steaming of ships

**There have been some reports of tests of blended fuel mixes that have led to sediments that can damage engines**

to reduce their fuel consumption, which would produce fewer emissions, while also lowering the cost of operating their vessels with higher-cost compliant fuels.

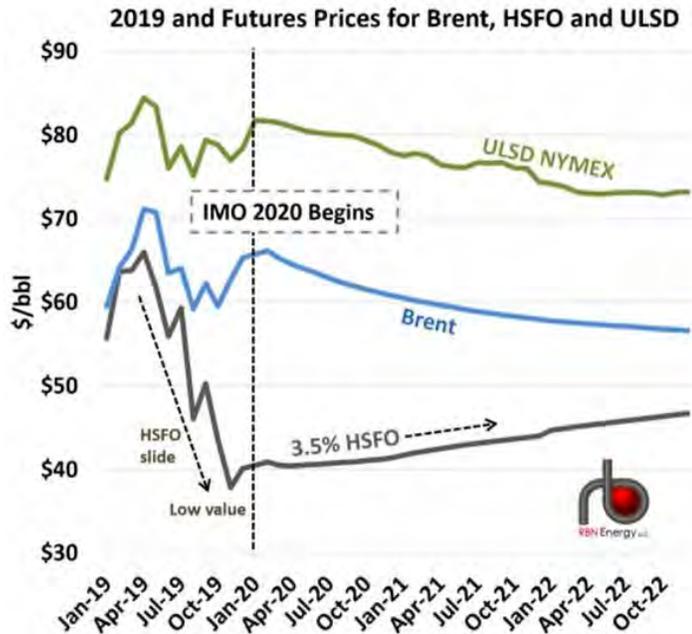
Some fuel logistic companies considered fuel blending options to reduce the sulfur content, while mitigating the higher cost of 100% compliant fuels. There have been some reports of tests of blended fuel mixes that have led to sediments that can damage engines. That could be a serious issue for shipowners, but it is entirely possible that the problems lie with the logistic company operations and not the actual fuel blends.

**Malaysia and the United Arab Emirates have announced they will not require ships operating in their waters to be compliant for now**

Lastly, shipowner non-compliance is an option. They can exercise a provision within IMO rules that provides for exemption from IMO 2020 fuel rules if compliant fuel is not available. Shipowners need to apply for these exemptions, which have to be granted.

Reports suggest that every option is being employed. Rather than the 2,000 ships anticipated to be equipped with scrubbers, upwards of 3,000 or more have been converted, reflecting the aggressiveness of some shipowners. Malaysia and the United Arab Emirates have announced they will not require ships operating in their waters to be compliant for now due to concerns about the availability of low-sulfur fuel oil and the impact the rapid switch will have on their local petroleum industry's ability to meet the new market demands without suffering significant financial losses.

**Exhibit 10. The Impact Of IMO 2020 On Fuel Markets**



Source: RBN

**There are few signs of significant disruptions in the fuels market due to IMO 2020**

Current crude oil prices are being influenced by the tensions from the Iranian-US stand-off. This has raised all oil product prices, but there are few signs of significant disruptions in the fuels market due to IMO 2020. Consultant RBN, in a recent article about the IMO 2020 impact, highlighted a chart (Exhibit 10 on the prior page) showing the history of 2019 high-sulfur fuel oil, ultra-low-sulfur diesel and Brent oil prices, as well as the forward price curves for 2020-2022. High-sulfur fuel oil prices have recovered some of the dramatic drop they experienced in 2019, as more of the product finds a home as more ships employ scrubbers, as well as increased power plant consumption, especially in lesser developed regions of the world – Africa and Latin America, primarily.

**Recent reports suggest the greatest shipping fuel fly-ups are happening in Southeast Asia**

There is little doubt but that the shipping industry's fuel bill will be higher in 2020 and future years than in 2019, but the global economic slowdown, partially caused by U.S. tariffs, is reducing global trade and shipping activity, reducing the industry's fuel consumption. Recent reports suggest the greatest shipping fuel fly-ups are happening in Southeast Asia. Singapore has seen high demand for low-sulfur fuel oil that has pushed the price for this compliant fuel to over \$700 per ton, from around \$550 at the beginning of December. At the same time, high-sulfur fuel oil is selling below \$300 per ton, providing a significant unit cost advantage for ships operating with scrubbers. Some carriers that implemented fuel premiums to cover the anticipated high cost of compliant fuels may still find their costs underwater.

**“It has gone quite seamlessly really”**

Around the world in Rotterdam, low-sulfur fuel oil is selling for only \$580 per ton. Ships with scrubbers are still bunkering with high-sulfur fuel oil and taking on very little compliant fuel to be used only where the emissions restrictions are even tighter.

As *Loadstar* quoted in an article late last week, “It has gone quite seamlessly really,” according to one carrier. “It looks like all the planning and forward ordering has paid off and I haven't heard of one of our ships suffering any delays since 1 January.”

**As more new ships enter service with cleaner propulsion systems, and the refining industry continues to upgrade its output mix, the IMO 2020 disruption will gradually fade and fuel prices are likely to drift lower**

We expect to hear that other countries have been slow to enforce IMO 2020, desiring to maintain their ongoing relations with shippers rather than become troublesome enforcers. It is important to remember that IMO is an advisory agency with no police powers. It relies on the individual countries to impose any fines and penalties levied on shipowners. While insurers have threatened to stop covering shipping companies who willfully violate IMO 2020, we sense this will be a last-ditch action, and only against repeat offenders. As more new ships enter service with cleaner propulsion systems, and the refining industry continues to upgrade its output mix, the IMO 2020 disruption will gradually fade and fuel prices are likely to drift lower.

## COP25's Failure And Climate Change's New Reality

### Some in the media would recoil at the view the conference failed

The current Australian wildfires have allowed the climate change movement and the media to move away from having to explain the failure of the two-week COP25 environmental meeting in Madrid in December. Some in the media would recoil at the view the conference failed, but the headlines sure suggest that reality.

*The Washington Post*: "COP25 U.N. climate change conference ends with doubts"

*BBC*: COP25: "Longest climate talks end with compromise deal"

*UN*: "An important opportunity lost as COP25 ends in compromise"

Even *Climate Change News*, in its opening lines of the December 15 article stated: "Plenary is about to start at #Cop25. The latest text has been released this morning and all the language on ambition has been scrapped."

The inability of the negotiators to develop more specific plans for reducing the world's carbon emissions, let alone deal with some of the more pressing issues from the 2015 Paris Accord, now four years old, makes one wonder what is going on with the climate change movement? Our doubts come despite two of climate change's leading political advocates – Tom Steyer and Michael Bloomberg – running for the Democrat nomination for president.

### She had the opportunity to lecture many of the world's leading politicians over their failure to cure climate change

One of the highlights of COP25 was the participation of environmental phenom Greta Thunberg, *TIME*'s Person of the Year 2019. People likely forget that Ms. Thunberg's celebrity status emerged as she led students out of schools to protest climate change. It was further elevated when she ventured to the United States by sailboat last summer to be able to participate in an environmental conference sponsored by the United Nations in New York City, where she had the opportunity to lecture many of the world's leading politicians over their failure to cure climate change. By coming to North America, not only would she be able to attend the UN meeting but she would also be able to travel by train to Chile for the COP25 conference, thereby keeping her carbon footprint low. Things didn't quite work out as planned, as Chileans rioted last October over a proposed increase in subway fares, economic inequality and social justice issues. This marked the first time a UN conference had to be cancelled and moved, in this case to Spain.

The media played up Ms. Thunberg's travel saga and how much she was doing to cutdown her carbon footprint by not flying across the Atlantic. In reality, though, the sailboat's captain had to fly back to Europe for commitments, while two other sailors had to fly to the United States to sail the boat back to Europe. Hum – three transatlantic airplane trips to avoid one?

**The 183 arrests included 101 individuals from Queensland who were “picked up for setting fires in the bush”**

**The climate change movement, especially as it is covered by a supportive media, has made the Australian wildfires to be only about climate change, while ignoring the long history of climate issues and wildfires on that continent**

With the Chile conference cancelled, Ms. Thunberg had to figure out how to get back to Europe. Another sailboat was the answer. Here again, she avoided flying, but another sailor had to fly to Europe to return the vessel to the U.S. Therefore, no benefit for the world's carbon emissions.

Right now, the public is being treated to intense media coverage of the wildfires in Australia. Reports are that hundreds of millions of animals have died – including kangaroos and koalas. A story spread throughout the Internet that 183 arsonists have been arrested since the start of the bushfire season. Fact checkers rushed to clarify the data. It turns out that the number of arrests is for the entirety of 2019 and for a range of offenses.

An article published by *The Guardian* on January 8th, quoted a Victoria police spokeswoman stating: “There is currently no intelligence to indicate that the fires in East Gippsland and the North East have been caused by arson or any other suspicious behavior.” The 183 arrests included 101 individuals from Queensland who were “picked up for setting fires in the bush.” The Queensland police spokeswoman said the figure was not of total arrests, but a total of “police enforcement actions,” which included the breaching of fire bans. She told *The Guardian*: “Enforcement action includes charging, restorative justice or cautioning.”

Queensland police said between 10 September and 8 January there had been 1,068 reported bushfires in the state, of which 114 had been deliberately or maliciously lit through human involvement and have been subject to police enforcement action. So, 10% of the fires are due to arson, which makes one wonder why anyone sets off wildfires, but the same phenomenon happened in California last year and the year prior with respect to its wildfires.

The misstatements about the number of arson arrests has now morphed into a left-right battle in the media over what *The New York Times* titled “Fueling the Debate On What Is Causing Australia's Wildfires” in its recent coverage of the issue. The article's target was Robert Murdoch, his family and its ownership of News Corp., the largest media company in Australia, that reportedly made the misstatement about the number of arsonists that spread like wildfire across Twitter and other social media courtesy of bots and trolls. The climate change movement, especially as it is covered by a supportive media, has made the Australian wildfires to be only about climate change, while ignoring the long history of climate issues and wildfires on that continent. That includes also ignoring the byzantine rules governing brush management, which is well known to be a contributor to starting wildfires as well as their spread. This is also a disservice by the media. That was a point *The Australian*, owned by News Corp. was trying to make in its wildfire coverage, including in its response to an email inquiry from *The New York Times*.

**However, the idea that there can be no other causes but climate change is just as heartbreaking, as it signals a closed mind**

In a warming world (yes, we are in an interglacial period where warming is a characteristic), the climate change movement resents any explanations besides hot and dry. These fires are always heartbreaking for the devastation they bring. However, the idea that there can be no other causes but climate change is just as heartbreaking, as it signals a closed mind. It would be better if all aspects and theories about how our planet's climate works can be explored. As we see in the evolution of medicine and humans, there is much we don't know, and are only discovering now, with significant life-altering results. Arsonists, even if they start only one fire, should be called out and punished for their cruelty and stupidity.

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