

Independent Shale Oil Producers: The Next Chapter

BY ELEANOR MORRISON

Shale oil production survived the crude oil price collapse in the second half of 2014 and is expected to return to pre-collapse levels in 2018, thereby allowing U.S. oil supply to reach 10 million BPD. Underpinning this resilience is a combination of four key factors: operational efficiency gains, lower service contractor prices, stable oil market prices and technological innovation. Shale oil suppliers are dominated by a combination of private and public traded independent oil producers with sub-investment grade ratings or zero rating. Investors and lenders, while optimistic with the future of improved producer financial performance, continue to be undecided on future financial returns of these firms. Producers still continue to outspend their cash flows which in turn is problematic for long term operations and investor confidence.

Shale and tight oil production increased from 0.8 million to 4.9 million barrels per day (BPD) from 2010 to 2015, rising from 15% to 52% of total U.S. crude oil production.¹ This exceptional growth pattern spurred many long term forecasts predicting United States would soon be independent of crude oil imports. The addition of this production resulted in the global supply curve shift to the left, under constant demand patterns, resulting in lower prices. The price of crude oil declined dramatically in the second half of 2014, and by the year-end 2016, in excess of 90 private and public independent producer firms filed for bankruptcy protection or restructuring², represented over 70 billion in secured and unsecured debt.³

Oil producers are exposed to two types of risk which contribute to cash flow and earnings volatility, market price risk and exploration risk. Market price risk can be hedged with the assumption that market access and cost of hedging is not prohibitive. Oil producers will implement hedging policies to limit downside market risk exposure, using derivative instruments such as forwards, futures, options, and collars. These producer price hedging strategies are based on expected annual production in future years. In the run up to 2014, while some firms had prudent hedging strategies in place, many other firms were exposed

to riskier hedging strategies such as 3-way collars which do not provide floor price protection under large negative oil price innovations. Early termination of hedging also occurred, driven by a firm's desire to lock in profit margins from hedge transactions, to support operating profits. After the 2014 negative price innovations, lenders required oil producers in financial distress to terminate in-the-money hedges and to direct cash flow for mandatory debt repayments. This action exposed producer cash flows to further market price decreases.

Oil producers achieved improved efficiency from drilling optimization complemented with horizontal well operational experience. This has reduced the time from well identification to crude oil extraction from the ground. Improved communication processes mean that experienced workers, laid off during the oil price collapse, can readily return to active employment, minimizing hiring and additional training costs. Producers took advantage of the market price collapse to renegotiate lower prices and more flexible contract terms with service providers. Rigid take-or-pay service provider contracts were one of the contributors to producer financial difficulties. Technological advances throughout the supply chain have improved decision processes, communication, and engineering practices. Since information and data flows from all projects can be analyzed remotely, decision making can occur from a central office.

Artificial intelligence applications in horizontal well drilling are undergoing rapid growth. Sceptics who still prefer the "old way" of basic geological data surveys and gut feel are now considering the merits of large scale applications of data analysis and machine learning models outputs. Large volumes of data from an unconventional well can now be gathered, stored and utilized to increase the speed of analysis on future drilling opportunities.⁴ There is a transition away from the current industry standard of using soft data sources such as fracture length, width, height and conductivity to access probability and size of a potential well to a model that utilizes hard data sources. These sources include field measurements obtained during the fracking process such as

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fluid and proppant type, injection pressure, injection rate and volume. The advantages of this new generation of modeling benefits in finding new viable wells, thereby reducing exploration operations risk. These models also provide guidance on optimisation of actual hydraulic fracturing processes for specific wells.

The majority of small to mid-cap independent producers use Resource Based Lending (RBL) structures, to finance exploration and production operations, as opposed to bonds and term debt products. Commercial banks have accepted upstream producer risk exposure via issuing asset backed RBL facilities, which are sized by calculating the net present value of producing assets and applying a discounting mechanism, to represent asset and firm risk. RBL lenders have unilateral authority to modify the producing asset valuation and associated redetermination of borrowing lines of credit. This feature means that RBL's are a weak form of liquidity, compared to traditional fixed term lending and can increase company default risk. Lenders place maximum and minimum production hedging ratios on borrowers to ensure cash flow availability to service RBL debt instruments.

After numerous bankruptcies during 2015-2016, Shared National Credit (SNC) Program⁵, a federal group that monitors credit risk and risk management practices, reviewed the RBL structures and associated risk reporting, on lender balance sheets. In 2017, SNC announced new provisions on loan underwriting, risk evaluation and covenant maintenance. Lenders must now analyse loan risk on the timely repayment of all outstanding secured debt rather than an individual loan agreement. Attempts by independent producers to add further capital via debt can be highly scrutinized. There must be strict adherence to loan covenant terms in lending agreements for firm's capital profile, debt/total capital, and performance ratio debt/EBITDA.⁶ The resulting impact to borrowers is higher interest rate costs assigned to RBL structures and more rigorous monitoring of financial covenants. Lenders have also discussed implementing policies for excessive cash balances on producer balance sheets, in such a manner that liquidity above a specified threshold must be allocated to reducing the loan principle, putting a constraint on a management's ability to plan for future capital investments.

Cash flow is the important variant for firm's debt holders, for both bond holders and loan

providers. Prudent cash flow and capital structure decisions are important as market prices are unlikely to climb back to pre-2014 levels. Russian and OPEC curtailments have established a market observed floor around 50 USD/Bbl. As oil prices increase, Russian and OPEC constituents will take advantage of higher market prices by increasing production output. This means that independent shale producers need to operate on a positive cash flow basis within an oil price range of 50-60 USD/Bbl. Recently, at these levels of market prices, shale producers are actively hedging, which demonstrate profit margins are positive.

The effect of recent changes to U.S. tax reform remain unknown. Corporate tax reductions from 35% to 21% of net income could stimulate acquisition activity in the E&P sector. The large global oil corporations may decide to increase their presence in the United States shale oil sector to complement existing portfolios of longer term drilling and production resources. In the equity market run up during the Trump Presidency, small to mid-cap producers have lagged the S&P 500 equity index performance. Investor return on equity demands are becoming relevant as this horizontal drilling and production sector matures. Regardless of what the future holds, independent shale oil producers should be mindful of the reticence of investors to weather another wave of bankruptcies. The oil market price collapse in 2014 resulted in many solvency issues and has some analysts and investors questioning the business model. Independent shale producers collectively need to demonstrate positive a cash flow performance for this industry to preserve and grow capital investment.

Footnotes

¹ U.S. Energy Information Association, Supply Update, 2015.

² Haynes and Boone, LLP Oil Patch Bankruptcy Monitor, October 31, 2017, Haynesboone.

³ Oil and Gas Financial Journal, Reserve-based lending, The Evolution through the downturn, Paul F Jansen, May 17, 2017.

⁴ Big Data will keep Shale Boom Rolling, MIT Technology Review, Richard Martin, June 2015.

⁵ Shared National Credit Program is governed by Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of the Currency (OCC).

⁶ Oil and Gas Financial Journal, Reserve-based lending, The Evolution through the downturn, Paul F Jansen, May 17, 2017.