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SHIFTING SHALE: LOOKING AT ENERGY MARKET DYNAMICS

DANIEL BYRNE - ASSISTANT UNDERWRITER, CREDIT & POLITICAL RISK (CPR), ASPEN INSURANCE

Daniel Byrne says that understanding the shifting dynamics of the energy market prompted by the "shale revolution" is becoming increasingly important. These changes relate both directly to oil and gas exploration, extraction, trading and refining activities and indirectly to countries reliant in part or exclusively on oil and gas revenues.

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Exploration and Recovery Risk

The expansion of shale resource extraction encompasses several interrelated elements, including exploration risk, infrastructure project risk, and the risks associated with new or enlarged trade flows and the significant financing needs associated with each stage. Shale exploration and production (E&P) companies are already a diverse group (several thousand E&P companies are believed to be operational in the US alone) and could therefore theoretically present a considerable credit exposure for banks and credit insurers supporting them.[i] While the range of entities represents an opportunity for CPR underwriters, the scale, balance sheet strength, cash flow stability and asset concentration of many of these medium-sized businesses are typically challenging.

The pure credit risk of smaller E&P players is therefore often unattractive, particularly when commodity price and exploration failure risks are factored in. Significant downside risk exists until the technical assumptions of new resources are validated, practical extraction challenges are overcome and consistent production is established. Although vast areas of shale resource, particularly in the US, are now well understood, poor recovery rates continue even in established locations such as Barnett Shale in the US.

Commodity Price Risk

Commodity price risk is also of fundamental importance in such credit evaluations. Although exceptional winter weather has prompted a recent price rebound, the broader trend is a significant decline in US wholesale gas prices due to the supply glut and the export constraints rendering the US a partially-sealed marketplace. In 2013, prices reached lows equivalent to those in the mid-1970s. The opportunity for CPR therefore lies in supporting those E&P companies with appropriate geographical, geological and preferably resource diversity, a sustainable balance between production and exploration assets, and a capital structure capable of withstanding poor recovery rates and/or a sustained price shock.

The significant capital expenditure required to develop the transportation and storage infrastructure associated with new energy resources offers another opportunity. In the US, progress on export terminals has been tentative to date. In addition to the project risk common with any such investment, political factors have also played a part. Shale gas's role in reducing prices and stimulating the domestic US industry has produced substantial opposition to liberalizing gas exports. Nevertheless, the first export terminal – Sabine Pass in Louisiana – is due to start operations in 2015. Worldwide, liquefaction and regasification infrastructure projects are growing in number and scale, and significant opportunities exist for CPR to support those schemes.

Commodity traders are another of CPR's key client groups whose activities will inevitably be impacted by shale developments. Traders have expanded significantly over the past two decades, capitalizing on dislocations between markets and operating in a more nimble and less conservative manner than traditional oil majors and national oil companies (NOCs). The market disruption on which traders have thrived can be expected to be further encouraged by shale, given the relatively mobile and replicable technology on which it relies and the new, relatively small-scale producers which are expected to emerge. Here, too, there are significant opportunities for CPR to support the resultant trade flows.

Structural Shift?

While various such commercial opportunities present themselves in the short-term, the longer-term structural implications are also fundamentally important to CPR's business, especially given the long policy tenors of the class. There are clear political and economic incentives for countries to switch from oil dependence to a more balanced oil/gas mix. Global gas distribution networks do not currently match those for oil, but gas transportation technology continues to advance and unlock new markets. Some analysts now even foresee a realignment in the distribution of natural resources, with the

[i] http://www.foreignaffairs.com/articles/141203/robert-a-hefner-iii/the-united-states-of-gas

pendulum swinging back from developing economies towards the OECD nations as other western states follow the US lead. In the most extreme forecasts, even the seemingly permanent balance of payments gap between the US and China could be reversed as energy imports to the latter balloon while the former consolidates its production gains. The demand/supply dynamic is clearly not a zero sum game, and all such forecasts are fraught with difficulties, but the potential consequences are immense.

Politics at Play

Inevitably, political as well as pure economic factors are at play in these calculations. For example, Russia and Saudi Arabia's reliance on high resource prices to support state expenditure means that 'artificial' budgetary concerns frequently replace extraction cost as the key market driver. Powerful supply-side support for sustained high prices can therefore encourage more complex and costly extraction techniques. Conversely, however, if a sustained global downturn in prices (perhaps driven by greatly expanded shale extraction) materialized, it would ultimately benefit the 'traditional' producing states with easily-realizable (i.e. cheap) reserves. In such a scenario, non-conventional extraction becomes increasingly uneconomic; even with oil prices at current levels, extraction activities such as ultra-deep-water drilling (currently the subject of intense investment off-shore Brazil, among other places) lies perilously close to break-even. The challenge for CPR lies, therefore, in conservatively selecting those companies and countries that are best able to withstand the consequences of a sustained price realignment.

Chinese Constraints

The Chinese experience highlights some of the changing energy market dynamics. China was a net energy exporter just two decades ago but, notwithstanding the current economic slowdown, its secular trend of significantly increased energy usage remains clear. Here, too, huge shale deposits (potentially greater than the US) have been identified, though the extent of recoverability remains controversial. Can the current Chinese model of highly centralized NOCs achieve what hundreds of relatively small US entities did through effective competition and the technological progression it encouraged? Can the technical challenges – including relative depth of resources and scarcity of natural water supplies (crucial for fracking) – be overcome? Such issues are significant, but unlikely to be insurmountable: the Chinese NOCs have invested over $17 billion since 2010 in oil and gas deals in the US and Canada.[ii] Already, therefore, the technology transfer required for successful exploitation is well underway, as in many other areas of the Chinese economy. Ultimately, it seems probable that the benefits for Beijing of increased resource self-sufficiency will prove too great not to be vigorously pursued.

European Experience

The outlook for European shale production is currently less positive, despite the existence of significant reserves. Regulatory issues and public opinion present major hurdles, including legal frameworks for resource ownership differing from the landowner-favoring US model. While Poland has pressed ahead with the aim of greater self-sufficiency, France currently enforces a blanket ban on shale resource extraction. The shortage of drilling equipment in Europe is another constraint; the US currently has 60% of all land drilling rigs, and drilling intensity there remains a multiple of the rest of the world combined.[iii] As things stand, little meaningful impact on the current European energy mix is imminent, despite extensive media coverage.

Economic Stimulus

Irrespective of production geography, in the longer-term, increased and diversified oil and gas production has the potential to act as a significant global economic stimulus. The shift in relative energy costs has already spawned additional activity in North America, notably in the energy-intensive chemical and steel industries. Interestingly, some foresee the potential for a more linear growth path to emerge, with economies less constrained by variable - and thus unpredictable - energy inputs from concentrated and/or politically unreliable sources. In the last five years, global supply was bolstered to a significant degree by increased US production, and prices - albeit still high by historical standards - did not soar despite significant production decreases in Egypt, Iran, Sudan and Libya (among others). To an extent, therefore, tight oil and gas has already played its part in ensuring that the fragile global economic recovery was not retarded by unrelated political events in major resource-exporting countries.

Pricing Control and Power Balance

Unconventional extraction is typically much smaller in scale (and capital outlay) with a shorter average project life than conventional extraction, and can be suspended more rapidly in the event of changing market circumstances. Shale, therefore, also has the potential to act as a pressure valve, regulating global supply to meet changing demand in much the same way as OPEC production quotas have done for decades. Instead of massive, and potentially unprofitable, investment throughout the economic cycle – with supply eventually appearing irrespective of the eventual market conditions – a more responsive market may emerge, with the US (and others) as 'swing' producers, lessening the dramatic price fluctuations of earlier eras.

The concept of US energy self-sufficiency has also provoked much comment on the US's interests in the Middle East, and the persistence of the current support for maintaining extensive military infrastructure in the region. In reality, it is easy to overstate this point, and a significant withdrawal from the region seems unlikely. Even before the development of shale extraction, the Middle East supplied only 10% of US oil needs, and energy is clearly only one of a range of preoccupations for Washington in the area. Nonetheless, more widely dispersed energy resources, and increased self-sufficiency for countries long-used to reliance on imports, will undoubtedly shift the relative balance of power.

[ii] http://online.wsj.com/news/articles/SB10001424052970204883304577223083067806776

[iii] http://belfercenter.ksg.harvard.edu/files/The%20US%20Shale%20Oil%20Boom%20Web.pdf