

Methodology
Rating Oil and Gas Companies

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Insight beyond the rating.

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Rating Oil and Gas Companies

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Introduction to DBRS Methodologies

- In general terms, DBRS ratings are opinions that reflect the creditworthiness of an issuer, a security or an obligation. They are opinions based on an analysis of historic trends and forward-looking measurements that assess an issuer's ability and willingness to make timely payments on outstanding obligations (whether principal, interest, dividend or distributions) with respect to the terms of an obligation.
- DBRS rating methodologies include consideration of general business and financial risk factors applicable to most industries in the corporate sector as well as industry-specific issues and more subjective factors, nuances and intangible considerations. Our approach is not based solely on statistical analysis but includes a combination of both quantitative and qualitative considerations.
- The considerations outlined in DBRS methodologies are not intended to be exhaustive. In certain cases, a major strength can compensate for a weakness and, conversely, there are cases where one weakness is so critical that it overrides the fact that the company may be strong in most other areas.
- DBRS rating methodologies are underpinned by a stable rating philosophy, which means that in order to minimize the rating changes due primarily to economic changes, DBRS strives to factor the impact of a cyclical economic environment into its rating as applicable. Rating revisions do occur, however, when it is clear that a structural change, either positive or negative, has transpired or appears likely to transpire in the near future.
- As a framework, DBRS rating methodologies consist of several components that together form the basis of the ultimate ratings assigned to individual securities. Assessments typically include the industry's business risk profile, the company's general business risk profile, the company's financial risk profile and considerations related to the specific security.
- To some extent, the business risk and financial risk profiles are interrelated. The financial risk for a company must be considered along with the business risks that it faces. In most cases, an entity's business risk will carry more weight in the final issuer rating than will its financial risk.

Business and Financial Risk Overview

- On a high-level macro basis, DBRS has a consistent approach to determining the issuer rating of an entity that is common across many industries. (See the appendix for the definition of "issuer rating.") Our high-level approach can be broken into three stages, as shown on the opposite page.
- Where applicable, DBRS uses the concept of business risk ratings (BRRs) as a tool in assessing the business strength of both industries and individual companies within many methodologies across the corporate finance area. DBRS typically assesses five areas to establish the overall BRR for an industry:
 - Profitability and cash flow.
 - Competitive landscape.
 - Stability.
 - Regulation.
 - Other inherent industry considerations.
- Although there is an overlap in some instances (to some degree, in the long term, all five factors tend to relate to profitability and stability), DBRS has found that considering these five measures in a separate fashion is a useful way of approaching this analysis.
- Using the same factors across different industries provides a common base with which to compare the business risks of various industries, even when they are distinctly different. In all cases, DBRS uses historic performance and our experience to determine an opinion on the future, which is the primary focus. For additional discussion on industry BRRs, please refer to the Industry Business Risk Ratings and Industry Business Risk Rating Definitions sections in the appendix.

Stage 1: Industry Business Risk Rating for the Oil and Gas Industry

DEFINITION OF THE INDUSTRY

- This is a global methodology that applies to companies that are primarily engaged in oil and gas exploration and production (generally known as upstream operations), including oil sands and heavy crude oil/bitumen upgrading for certain operators; independent refiners/marketers of petroleum products (downstream operations); and integrated companies that are engaged in all phases of the business (i.e., upstream and downstream activities); and related industries such as transportation, petrochemical and/or renewable fuels operations.
- DBRS evaluates each of these business segments individually, as well as in the context of the business risk of the integrated company.
- The upstream sector of the oil and gas industry is characterized by substantial volatility in the ultimate prices realized, the significant costs involved in finding, developing and producing reserves, and the often uncertain estimates of recoverable resources.
- The refining operation of the downstream segment is exposed to highly volatile refining margins, with marketing activities providing a certain degree of stability. For integrated operations, downstream usually provides diversification and support to upstream and the opportunity to capture the full value chain.
- The resource base, by its nature, is depleting, and participants in the industry must continually reinvest in the business to find new reserves, to replace and grow production in order to maintain viability. Conventional reserves are also becoming scarcer and discovered in smaller reservoirs.
- The industry, however, continues to benefit from technological advances to improve recovery, while helping to make more difficult, unconventional reserves economic to reach the production stage, notably oil sands, shale plays and tight gas in North America.
- Typically, companies that explore offshore regions entail greater exploration risk than onshore operators, and more capital must be spent on each individual well. In contrast, oil sands operators incur minimal or no exploration risk as the resource is well defined and long-lived, although upfront capital is usually substantial, particularly for mining projects with upgrading facilities.

THE BUSINESS RISK RATING

For the oil and gas industry as defined, DBRS views the BRR as being BBB to BBB (high) based on the five major categories outlined below used by DBRS in assessing industry BRRs. The notable features include the following:

- The industry's above-average profitability and cash flow, driven by its dominant contribution to global economic growth, particularly in emerging markets, partly offset by the high level of volatility in crude oil and natural gas prices.
- Other factors include difficulty in replacing reserves internally, resulting in acquisitive activities to add reserves, and political risks associated with operations in resource-rich countries, such as North Africa and the Middle East, as conventional reserves in developed countries dwindle.
- It should be noted that some companies have the ability to have much stronger individual BRRs than the industry BRR, reflecting major strengths in areas, such as economies of scale and diversification.

INDUSTRY PROFITABILITY AND CASH FLOW

- Profitability and cash flow remain moderately above average versus other industries, led mainly by a general rise in commodity prices over time and, to a less extent, by a rise in production.
- Growing demand from emerging countries, especially China, provides support to the oil prices, which are also affected by rising costs of finding new reserves. The ability of Saudi Arabia to act as a swing producer, reducing supply when prices fall and raising production as prices rise, stabilizes prices to a certain extent.

- Technology advancement continues to aid in the ability of the industry to extract oil and gas, adding to profitability both through efficiency gains and extending reserves.
- Other factors include the price differential between heavy and light oil, and the oil pricing reference point at Cushing, Oklahoma, the West Texas Intermediate (WTI) price (where North American oil is traditionally priced), and the price of Brent crude (where North Sea oil is priced). Price differential also exists between NYMEX natural gas priced at Henry Hub, Louisiana, and at AECO (Alberta).

INDUSTRY COMPETITIVE LANDSCAPE

- The competitive landscape is considered close to the industries average.
- The oil and gas industry is a very competitive commodity-based business and is dependent on demand and supply. There is limited branding of oil and gas, although there is price differential in terms of crude oil quality, such as Canadian light or heavy blend, and sweet and sour gas.
- At the marketing level, convenience is more important for the consumer for gasoline than any one brand name, although brand names are used to create loyalty.
- At the refining level, the rising world refining capacity, coupled with sluggish demand, has created very competitive conditions for refined oil products. Refined products are also commodities that trade based on supply and demand.

INDUSTRY STABILITY

- The industry has a level of volatility that is well above most industries, apart from other commodity-based industries.
- Both volumes and product pricing for most participants move with wider economic considerations, although natural gas prices are also affected by regional factors and new technology as outlined below.
- While volatility is inherently higher than most other industries, this is somewhat offset by capital structure and financial risk management. That is, most industry participants manage their businesses to incorporate commodity price volatility.
- Refining and marketing segments have traditionally provided some stability to revenues for integrated companies. However, this counter-cyclical factor is somewhat affected by increasing refining capacity in developing countries and slowing demand in the developed nations.

INDUSTRY REGULATION

- The industry remains economically unregulated, making this type of regulation less of a factor (neither a strength nor a weakness), although the industry is governed by certain operational regulations.
- Regulation includes safety standards, permitting, especially for offshore drilling, and site reclamation, some of which have become more prominent features in the regulatory framework.
- Regulation also pertains to environmental issues for upstream operations, such as oil spillage, water usage, moving rigs in sensitive areas in the far north and, in refining, air and water quality.

OTHER INHERENT INDUSTRY CONSIDERATIONS

- The overall level of inherent industry risk remains close to the industries average, offset by above-average exposure to areas, such as currency movements, field services costs and particularly for oil sands producers, labour costs.
- Technology advancement and the related improved application have played a large role in improving oil and gas reserves, with major breakthroughs, such as the application of horizontal and multi-level fracture drilling in addition to 3-D seismic, enhancing the ability to find oil and gas, most notably the impact on natural gas supply dynamics emanating from shale gas developments.
- Other technology developments include improved pump and drill bit technology, which enables recovery of oil laden with sand and the drilling of more complex structures, as well as deepwater drilling offshore.
- For participants with material upstream exposure in certain developing countries, political risk could be a factor affecting the business risk profiles, such as the security of reserves/production as a result of political uncertainty, and a change in royalty schemes and tax structure.

Stage 2: Issuer Rating

To move from the generic industry BRR toward the issuer rating for a specific company, two tasks must be performed. Specifically, we must determine the business risk and the financial risk for the individual company.

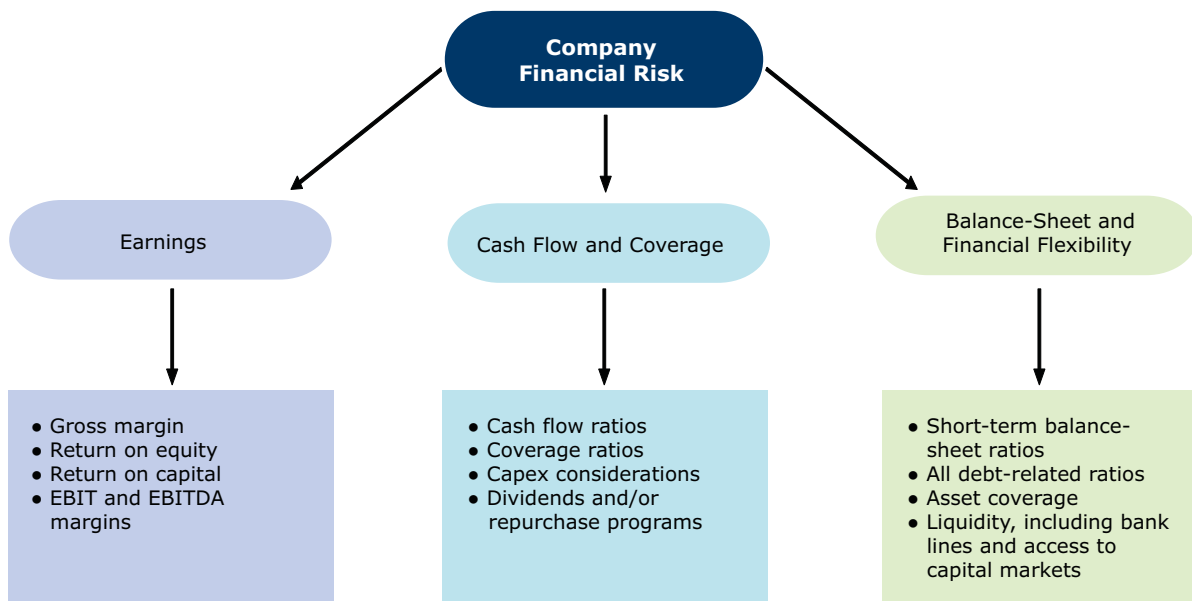
BUSINESS RISK PROFILE

- The business risk profile of the issuer may be better or worse than the industry average due to the presence of unique attributes or challenges that exist at the issuing entity. While not exhaustive, the list of critical factors outlined in the previous section could result in a specific issuer rating being different from the industry BRR.
- This methodology also provides some guidance on which factors are considered the most critical for the industry in question. Issuers may also have meaningful business lines in addition to the base business that extend beyond their most prominent industry, which could add significant attributes or challenges.

FINANCIAL RISK PROFILE

- The graphic below is a visual display of the key financial risk profile considerations that are discussed in the Company-Specific Financial Risk Factors section of this methodology, although even the detail provided there is not meant to be exhaustive.
- The discussion will note that DBRS often makes calculation adjustments in key ratios for risks related to a variety of areas. In some cases, a relationship with a parent or associated company will also be important.

Key Financial Risk Metrics





Company-Specific Business Risk Factors

- We now consider if an individual company in the oil and gas industry would be better, worse or the same as the industry BRR. Our focus here is on the critical business risk factors that relate to this industry in particular. The five critical factors used to determine the industry BRR are applied by DBRS to compare numerous industries and are thus more general in nature.
- By analyzing these key drivers (which will vary on an industry-by-industry basis), the essential strengths and challenges of each industry are captured in an accurate fashion, and transparency is provided. The analysis below is connected to the industry BRR in that the industry BRR establishes where an average company would be considered to score on the matrix. For example, an industry with a BRR of BBB would mean that the following matrix describes the scoring of an average company within the BBB column.

Company-Specific Business Risks – Critical Factors

Business Strength	AA/AAA Exceptional	A Superior	BBB Adequate	BB Weak	B Poor
Reserves of Core Operations (Depleting Reserves)	<ul style="list-style-type: none"> • Abundant high-quality reserves • Industry-leading reserve life • Ability to grow production and reserves 	<ul style="list-style-type: none"> • Substantial good-quality reserves • Long reserve life (generally more than ten years) • Ability to grow production and reserves 	<ul style="list-style-type: none"> • Sufficient quality reserves • Average reserve life (about ten years) • Average ability to grow production and reserves 	<ul style="list-style-type: none"> • Below-average reserve quality and reserve life • Inconsistent production/reserve profile 	<ul style="list-style-type: none"> • Small and weak quality reserve base • Short reserve life (generally less than five years) • Difficulty in growing production and reserves
Cost Competitiveness (Price Taker)	<ul style="list-style-type: none"> • Very low cost base • Operational excellence • Superior infrastructure 	<ul style="list-style-type: none"> • Low cost base • High operational efficiency • Very good infrastructure 	<ul style="list-style-type: none"> • Average cost base • Good operational efficiency • Adequate infrastructure 	<ul style="list-style-type: none"> • High cost base • Below-average operational efficiency • Inadequate infrastructure 	<ul style="list-style-type: none"> • High cost base • Low operational efficiency • Poor infrastructure
Market Volatility (Commodity-Based)	<ul style="list-style-type: none"> • Exceptional operational and financial strength • Excellent ability to withstand inherent volatility of commodity prices and high capital reinvestment risk 	<ul style="list-style-type: none"> • Superior operational and financial strength • Superior ability to withstand inherent volatility of commodity prices and high capital reinvestment risk 	<ul style="list-style-type: none"> • Average operational and financial strength • Average ability to withstand inherent volatility of commodity prices and high capital reinvestment risk 	<ul style="list-style-type: none"> • Below-average operational and/or financial strength • Below average ability to withstand inherent volatility of commodity prices and high capital reinvestment risk 	<ul style="list-style-type: none"> • Weak operational and financial strength • Difficulty in coping with inherent volatility of commodity prices and high capital reinvestment risk
Business Mix and Diversification (Integration, Diversity, Size and Royalty Regime)	<ul style="list-style-type: none"> • Highly integrated, diverse product and business mix • Counter-cyclical upstream and downstream operations, including petrochemical and/or oil sands activities • Excellent economies of scale 	<ul style="list-style-type: none"> • Meaningful integrated and diverse operations or large-scale exploration and production (E&P) companies • Good product mix and superior geographic spread • Economies of scale 	<ul style="list-style-type: none"> • Partially integrated or E&P companies • Average diversity, product mix, critical mass and cash flow stability • Consistent hedging 	<ul style="list-style-type: none"> • Below-average and/or smaller E&P companies • Little diversity, small size and significant cash flow volatility • Inconsistent hedging 	<ul style="list-style-type: none"> • Underperforming or very small E&P companies • Undue cash flow volatility • Insufficient hedging arrangements

Company-Specific Business Risks – Critical Factors

Business Strength	AA/AAA Exceptional	A Superior	BBB Adequate	BB Weak	B Poor
Capital Spending and Capital Management (Capital Intensive)	<ul style="list-style-type: none"> Excellent capital flexibility Superb operating and growth strategies and capital management Very strong cash flow coverage for all financial obligations (see the Company-Specific Financial Risk Factors section for more details) 	<ul style="list-style-type: none"> High capital flexibility Very strong operating and growth strategies supported by conservative capital management Strong cash flow coverage for all financial obligations (see the Company-Specific Financial Risk Factors section for more details) 	<ul style="list-style-type: none"> Average capital flexibility Good operating and growth strategies and capital management Adequate cash flow coverage for all financial obligations (see the Company-Specific Financial Risk Factors section for more details) 	<ul style="list-style-type: none"> Below-average capital flexibility Inconsistent operating and growth strategies High leverage and low cash flow coverage for financial obligations (see the Company-Specific Financial Risk Factors section for more details) 	<ul style="list-style-type: none"> Weak capital flexibility Highly inconsistent operating and growth strategies High leverage with poor cash flow support for financial obligations (see the Company-Specific Financial Risk Factors section for more details)

PRIMARY FACTORS

Reserves of Core Operations (Depleting Reserves)

- A company's production and growth profile is largely dependent on the quality of its reserve base (such as sweet or sour, heavy or light oil and dry or wet gas) and reserve mix (proportion of crude oil and natural gas) in its core operations and whether the proved and probable reserves are in sufficient quantities and commercially accessible for future developments.
- The proportion of developed and undeveloped reserves is also an indication of future development potentials.
- As a result, reserves are the source of a company's earnings and cash flow, which are key considerations to meeting its financial obligations.
- Apart from internal drill bit efforts and technological enhancement (organic growth), a company's portfolio of reserves can be increased or upgraded through selective purchases and disposals.
- Undeveloped reserves and resources are important for organic growth over time and generally require significant investment before these can contribute to cash flow.
- Long reserve lives (defined by DBRS as proved reserves divided by recent annual production volumes) provide a degree of comfort that financial obligations could be met, notwithstanding the cyclical and volatile nature of the industry.

Cost Competitiveness (Price Taker)

- The realized commodity prices and the underlying production and operating costs are key factors affecting an oil and gas company's operating results, or netbacks. A sustained period of low commodity prices could adversely affect performance of industry participants.
- In addition, success rate in exploration is an important element for companies engaged in exploration activities.
- EBITDA netback represents cash operating income per barrel of oil equivalent (boe) from producing operations, which is a significant determinant of profitability and an important rating driver.
- Low-cost producers that consistently generate high netbacks are viewed most favourably by DBRS.
- Given the inherent volatility of commodity prices, DBRS uses various price assumptions to test the sensitivity of an oil and gas company's key credit metrics and operating statistics to changes in price.

- **Price Sensitivity:** The price realization of the commodity is highly dependent on the quality of the product (e.g., sweet versus sour crude, wet versus dry gas, light oil versus heavy oil), given that most upstream production must be processed to varying degrees before consumption. The location of the reserves and the end-user markets are also key factors (e.g., natural gas from the Rocky Mountains versus Equatorial Guinea). For instance, upstream companies often operate in developing countries with abundant reserves but significant geopolitical challenges.
- **Supply/Demand:** Given the substantial number and size of industry participants, individual companies are typically price takers in a very competitive market. Reserves, production and consumption are significant factors that affect price realizations on a global basis in the case of crude oil, and generally on a regional basis for natural gas, which is also affected by storage levels. Refining capacity is an important determinant in the pricing of refined products. It is noteworthy that the Organization of Petroleum Exporting Countries (OPEC), through the cooperative effort of its member states, could affect crude oil prices by setting production quotas and offering fairly substantial spare capacity through Saudi Arabia.
- **Pipeline Availability/Infrastructure Constraints:** DBRS examines the infrastructure and transportation system required to meet the processing and logistical requirements of the industry. Since energy production tends to be remote from the product's ultimate end users, pipeline availability is a significant determinant of producer netbacks. This is especially true for natural gas, for which the transportation cost relative to its realized selling price is much higher than for crude oil.
- **Other Issues:** Other factors include prices for condensate, which is required to transport heavy oil through a pipeline, drilling rig availability/pricing and weather conditions. For instance, some regions are accessible only in winter, while demand for natural gas is tied to the summer air-conditioning and winter heating seasons. Arbitrage opportunities ensure that pricing efficiencies are closely maintained among competing markets.

Market Volatility (Commodity-Based)

- DBRS rates oil and gas companies through a cycle, taking into consideration the inherent volatility of commodity prices, high capital reinvestment risk, cost structure and operating efficiency.
- Cash flow is the most important measure of performance, and DBRS focuses on the sustainability and adequacy of cash flow support for debt protection, funding of capital spending and dividends, and the generation of free cash flow.
- Oil and gas rating analysis focuses on assessing the downside risks to cash flow and incorporates forward-looking DBRS expectations of operating performance and credit quality.
- Operating performance for individual oil and gas companies is consistently monitored in the context of peer group comparative analysis.

Business Mix and Diversification (Integration, Diversity, Size and Royalty Regime)

- There are three broad categories of petroleum companies – independent exploration and production (E&P) companies, independent refiners/marketers and integrations – each with its own specific risk characteristics and credit profiles.
- Generally, companies with more integrated and diverse operations in terms of business activities and geographic spread, with the benefit of scope and economies of scale, are viewed more favourably and could receive higher credit ratings than independent E&P companies or independent refiners/marketers.
- Size measured in terms of barrels of oil equivalent production per day (boe/d) is also among the key considerations in establishing ratings for oil and gas companies. Size becomes less important as certain critical mass, or threshold levels, are reached.
 - **Independent Exploration and Production (E&P) Companies:** These companies can experience significant volatility in earnings and cash flow from their exposure to commodity price swings and the large investments needed to replace reserves.
 - **Independent Refiners/Marketers:** These companies are subject to general economic conditions that determine demand for refined products. Refiners in particular benefit from larger differentials between crude oil feedstock prices and price realizations of refined products. In this respect, refiners in North America are generally focusing on expanding and upgrading their refining capacities to handle heavier crude oil, especially from the Canadian oil sands, and to expand diesel handling capability.

- **Integrates:** DBRS views the integrated oil and gas companies as the most stable and highly rated of the petroleum companies, with more diversified cash flow and often countercyclical upstream and downstream operations. Integrates are typically engaged in all phases of the business, from oil and gas exploration and production to marketing and refining, including transportation, and oil sands and petrochemical operations for certain operators. These companies typically have greater capacity to internally fund capital spending than pure E&P companies.

Capital Spending and Capital Management (Capital Intensive)

- Capital spending analysis provides an understanding of a company's operating strategies, growth plans and areas under investment and divestment.
- Analysis of capital spending begins with an examination of a company's capital needs. Cash flow adequacy is viewed from the standpoint of a company's ability to finance capital maintenance requirements internally, as well as its ability to finance capital additions for growth.
- An important dimension of capital spending is the extent of a company's flexibility to alter the timing of projects without permanent impairment of its operations.
- In the case of oil sands projects, special attention is focused on the substantial front-end capital and the relatively inflexible timeline for developments, particularly for mining projects with upgrading operations.
- Some of these inflexible characteristics also apply to large offshore projects, with long lead times. DBRS also assesses capital spending in the context of the company's capital management, including the impact on its balance sheet and operational capacity.
- DBRS considers a variety of factors associated with a company's capital management policies and practices, including the appropriate use of leverage and other potential funding sources, hedging arrangements and the management of debt maturities and refinancing risk (see the Company-Specific Financial Risk Factors section for more details).

ADDITIONAL FACTORS

Political Risks

- Companies in the oil and gas industry are often confronted with significant political challenges. Included in these risks are unilateral changes in royalties, production sharing contracts and local issues.
- Although these risks can be quantified to some degree using various metrics or tools, such as percentage of production from OECD countries, credit ratings of host countries and concentration of production and reserves, forecasting the actual impact on a company's cash flows over time can be considerably less precise.
- A case in point, the location of reserves is important, since politics plays a key role in the security of reserves. For instance, political upheaval in certain countries in North Africa and the Middle East could affect the global production and the related commodity pricing levels, illustrating the effects of political uncertainty. Royalty schemes and taxes can also vary quite widely between countries and can be changed arbitrarily.
- Thus, diversification between countries is important to reduce political risk and the security of reserves in a given country.

Regulatory/Environmental Factors

- DBRS assesses the extent to which oil and gas companies face government laws and regulations, which can have an impact on a company's business and prospects.
- Among the more stringent laws are those related to safety and the environment, such as safety standards and response requirements for Gulf of Mexico drilling and allowable limits of emissions. Industry participants, whether conventional or unconventional, including oil sands operators, are among the major contributors to greenhouse gas (GHG) emissions, principally as a result of carbon dioxide generated through hydrocarbon production.
- In light of the global push toward lower GHG emissions through regulatory requirements, DBRS views this risk and its associated costs as growing over time.
- DBRS also examines the impact of permitting, especially for offshore drilling; site reclamation, and asset retirement obligations.
- Integrates also face environmental risks from their downstream operations, especially in refining.

COMMON BUSINESS CONSIDERATIONS

- There are two major considerations that were not included with the prior analysis but can have a meaningful impact on an individual company in any industry: country risk and corporate governance (which includes management). These areas tend to be regarded more as potential negative issues that could result in a lower rating than otherwise would be the case, although DBRS would certainly consider exceptional strength in corporate governance as a rating attribute.
- In most cases, our focus on the two areas is to ensure that the company in question does not have any meaningful challenges that are not readily identifiable when reviewing the other business risk considerations and financial metrics outlined in this methodology.

Country Risk

- Governments often intervene in their economies and occasionally make substantial changes that can significantly affect a company's ability to meet its financial obligations; therefore, considerations include the company's main location or country of operation, the extent of government intervention and support and the degree of economic and political stability.
- As such, the sovereign rating itself may in some cases become a limiting factor in an entity's rating, particularly when the sovereign has a lower rating and the entity does not have meaningful diversification outside its domestic economy.

Corporate Governance

- Effective corporate governance requires a healthy tension between management, the board of directors and the public. There is no single approach that will be optimal for all companies.
- A good board will have a profound impact on a company, particularly when there are significant changes, challenges or major decisions facing the company. DBRS will typically assess factors such as the appropriateness of board composition and structure, opportunities for management self-interest, the extent of financial and non-financial disclosure and the strength or weakness of control functions. For more detail on this subject, please refer to the DBRS criteria *Evaluating Corporate Governance*.
- With respect to the pivotal area of management, an objective profile can be obtained by assessing the following: the appropriateness of core strategies; the rigour of key policies, processes and practices; management's reaction to problem situations; the integrity of company business and regulatory dealings; the entity's appetite for growth, either organically by adding new segments or through acquisition; its ability to smoothly integrate acquisitions without business disruption; and its track record in achieving financial results. Retention strategies and succession planning for senior roles can also be considerations.

Company-Specific Financial Risk Factors

KEY METRICS

- Recognizing that any analysis of financial metrics may be prone to misplaced precision, we have limited our key metrics to a small universe of critical ratios. For each of these ratios, DBRS provides a range within which the issuer's financial strength would be considered as supportive for the same level of business risk as the oil and gas industry. For example, a company where the outlook for both business risk and financial risk metrics falls within the BBB category would, all else being equal, be expected to have an issuer rating in the BBB range.
- To be clear, the ratings in the matrix below should not be understood as the final rating for an entity with matching metrics. This would only be the case to the extent that the business risk of the company and a wide range of other financial metrics were also supportive. The final rating is a blend of both the business risk and financial risk considerations in their entirety.

Oil and Gas Industry Financial Metrics

Key Ratio	AA/AAA	A	BBB	BB	B
Debt-to-cash flow	< 1.25x	1.0x to 2.0x	1.50x to 2.25x	2.0x to 3.0x	2.5x to 6.0x
Debt-to-capital	< 25%	25% to 40%	30% to 45%	35% to 55%	45% to 70%
EBIT interest coverage	> 20.0x	8.0x to 15.0x	5.0x to 10.0x	3.0x to 7.0x	< 3.0x

- The ranges outlined above are for indicative purposes only and there are overlaps in the credit metrics among the various rating categories. Due to the volatile nature of the industry, the participants as price takers tend to manage their capital structure and cash flow more conservatively than many other industries, regardless of the size of their operations.
- In many instances, the differentials in credit ratings tend to reflect the business/operational risk levels more than credit metrics.
- DBRS tends to put more emphasis on cash flow coverage ratios rather than pure balance-sheet leverage, although the latter indicates a company's ability to manage its capital structure.
- DBRS favours EBIT coverage rather than EBITDA coverage to recognize the high levels of capex that must be maintained to stabilize production and reserves.
- While the data in the above table are recognized as key factors, they should not be expected to be fully adequate to provide a final financial risk rating for any company. The nature of credit analysis is such that it must incorporate a broad range of financial considerations, and this cannot be limited to a finite number of metrics, regardless of how critical these may be.
- DBRS ratings are based heavily on future performance expectations, so while past metrics are important, any final rating will incorporate DBRS's opinion on future metrics, a subjective but critical consideration.
- It is also not uncommon for a company's key ratios to move in and out of the ranges noted in the ratio matrix above, particularly for cyclical industries. In the application of this matrix, however, DBRS is typically focusing on multi-year ratio averages.
- Notwithstanding these potential limitations, the key ratios are very useful in providing a good starting point in assessing a company's financial risk.
- It is important to note that actual financial ratios for an entity can and will be influenced by both accounting and accounting choices. In Canada, this will include the shift to International Financial Reporting Standards (IFRS). DBRS acknowledges that IFRS and other accounting choices will have an impact on the financial metrics of the companies that it covers. The financial risk factors include ratios based on data from company financial statements that are based on Canadian Generally Accepted Accounting Principles (GAAP) and U.S. GAAP, for the most part. When company financial statements are based on GAAP in other countries, including IFRS, the ratios and ranges may need to be redefined.



- Recognizing that the metrics in the table above do not represent the entire universe of considerations that DBRS examines when evaluating the financial risk profile of a company, the following provides a general overview that encompasses a broader range of metrics and considerations that could be meaningful in some cases.

Overall Considerations in Evaluating a Company's Financial Risk Profile

In addition to the information already provided with respect to key financial metrics, the following financial considerations and ratios are typically part of the analysis for the oil and gas industry. As it is not possible to completely separate business and financial risks, note that many of the following ratios will relate to both areas.

CASH FLOW

- Cash flow is typically defined as earnings before extraordinary items, plus depreciation, depletion and amortization (DD&A) and normal deferred income taxes, adjusted for non-cash items, including unrealized gains or losses from derivatives, asset sales and foreign exchange trading activities.
- The oil and gas industry reports high levels of DD&A and relatively high levels of deferred taxes, which are all non-cash items. For this reason, DBRS believes that cash flow, which is primarily used to fund capital spending, is a more appropriate measure for assessing an oil and gas company's financial performance than is net income.
- Crude oil and natural gas prices can fluctuate widely, depending on factors such as supply and demand fundamentals, inventory levels and weather conditions and seasonal influences. This makes the cash flow of oil and gas companies inherently volatile.
- Among the mitigants to this volatility are hedging arrangements, which, applied on a consistent basis, could provide a certain measure of cash flow stability for the near term. In addition, a production profile that is balanced between crude oil and natural gas can provide an element of relative stability to companies that have a significant weighting in one commodity.

FINANCIAL LEVERAGE

- While DBRS recognizes the importance of traditional debt-to-capital ratios as an indicator of financial leverage, the capitalized value of property, plant and equipment and book equity values may not be reflective of the true underlying value of oil and gas reserves in the ground.
- As a result, DBRS tends to place greater emphasis on debt-to-cash flow, interest and fixed-charge coverage ratios as measures of balance-sheet strength.
- The debt-to-proved reserves ratio is another indicator of financial strength tied to reserves that are considered commercially viable to develop. Debt-to-EBITDA is often used for measuring company leverage targets or for compliance purposes for lesser-quality names with respect to financial covenants established by financial lending institutions.
- The appropriate balance of fixed-rate versus floating-rate debt is also examined. Off-balance-sheet liabilities, such as operating leases, which are most commonly found among oil and gas companies, are also factored into the leverage analysis. DBRS typically treats these leases as a use of debt capacity.

LIQUIDITY

- Liquidity analysis assesses a company's corporate philosophy as well as its ability to meet its capital programs, debt and other obligations.
- Consideration is given to the adequacy of bank credit lines, cash balances and other readily accessible sources of liquidity.
- Other factors include counterparty credit, cash collateral requirements, debt financings and other general liquidity demands.
- Any sharp drop in commodity prices, coupled with turmoil in the credit and capital markets, could heighten the challenges faced by industry participants in maintaining adequate liquidity to fund existing and future obligations.

RATIOS USED IN ANALYSIS

Typical Cash Flow and Coverage Ratios

- Current ratio
- Total debt in capital structure
- Adjusted total debt in capital structure
- Net debt in capital structure
- Total debt-to-cash flow
- Net debt-to-cash flow
- (Cash flow minus dividends)-to-net capex
- Dividend payout ratio
- Total debt-to-proved reserves

Typical Earnings Ratios

- EBIT interest coverage (times)
- EBITDEA interest coverage (times)
- Fixed-charges coverage (times)

Typical Profitability Ratios

- Operating margin
- Profit margin
- Return on common equity
- Return on capital

Typical Segmented Earnings Statistics

- Upstream earnings
- Downstream earnings
- Other Business earnings

Typical Netback Data (Barrel of Oil Equivalent)

- Revenues
- Production and operating costs
- EBITDA and/or EBIT netback

Typical Key Operating Statistics

- Total production
- Percentage of oil, condensate and natural gas liquids (NGL)-to-total and/or percentage of oil sands-to-total
- Proved reserves
- Percentage of oil, condensate and NGL-to-total
- Proved undeveloped reserves-to-total proved reserves
- Annual production replaced
- Proved reserve life index



- Reserves replaced internally
- Finding and development (F&D) costs
- Reserve replacement costs.
- Reserve recycle ratio
- Geographic breakdown of production and reserves
- Return on average capital employed

Typical Downstream Key Operating Statistics

- Refined product sales
- Refined throughput
- Refined capacity utilized
- Refining and marketing margins
- Return on average capital employed

Stage 3: Rating the Security

With respect to Stage 3, the following comments describe how the issuer rating is used to determine ratings on individual securities:

- DBRS uses a hierarchy in rating long-term debt that affects issuers that have classes of debt that do not rank equally. In most cases, lower-ranking classes would receive a lower DBRS rating. For more detail on this subject, please refer to DBRS rating policy entitled “[Underlying Principles](#).”
- In some cases, issued debt is secured by collateral. This is more typical in the non-investment-grade spectrum. For more detail on this subject, please refer to [DBRS Rating Methodology for Leveraged Finance](#).
- The existence of holding companies can have a meaningful impact on individual security ratings. For more detail on this subject, please refer to the criteria [Rating Parent/Holding Companies and Their Subsidiaries](#).

Appendix

INDUSTRY BUSINESS RISK RATINGS

- DBRS uses the concept of business risk ratings (BRRs) as a tool in assessing the business strength of both industries and individual companies within many methodologies across the corporate finance area. (DBRS does not typically use this approach for most financial, government and public finance sectors, where the industry is more challenging to define and this approach is not as useful.)
- The BRR is assessed independently of financial risk, although in some cases there are subtle but important links. As an example, the very low business risk profile of many regulated utilities has historically allowed this sector to operate with debt levels that would not be acceptable for most other industry sectors. Given this reality, it is difficult to consider the utility industry's BRR without acknowledging to some degree that the industry operates with sizable debt levels. This type of relationship exists with many industries, although typically to a much lesser degree.
- When a BRR is applied to an industry, there is an acknowledgment that this is a general assessment and there may in fact be a wide disbursement in the business strength of individual entities within the industry. Nonetheless, this assessment is beneficial to enabling DBRS to clearly delineate our industry opinion and is a useful tool when comparing different industries. An industry BRR is defined as being representative of those entities that the market would consider as "established," meaning that the group of companies being considered would have at least reasonable critical mass and track records. As such, the BRR for an industry does not consider very small players, start-up operations or entities that have unusual strengths or weaknesses relative to the base industry.
- DBRS methodologies note whether they apply to global industries or more specific countries or regions. When analyzing individual credits, DBRS considers the degree to which regional considerations may differ from the geographic area applicable within the industry methodology. Many entities have business units that transcend industries and in these cases, more than one BRR would be considered, including the possible benefits or challenges that may exist when all businesses are analyzed as part of a combined group.
- The BRR is a tool that provides additional clarity regarding the business risk of the industry overall, but it should be viewed as just one aspect in the complex analysis of setting ratings and should by no means be seen as either a floor or ceiling for issuers within a given industry. Although DBRS does not anticipate volatility in an industry's BRR, changes are possible over time if there are meaningful structural developments in the industry. When such a change does occur, DBRS will make this clear and note any impact on related individual ratings within the industry as applicable.
- DBRS assesses five areas to establish the overall BRR for an industry. Although there is an overlap in some instances (to some degree, in the long term, all five factors tend to relate to profitability and stability), DBRS has found that considering these five measures in a separate fashion is a useful way of approaching its analysis. In all cases, DBRS uses historic performance and our experience to determine an opinion on the future, which is the primary focus.

Industry Profitability and Cash Flow

- When ratios such as return on equity, return on capital and a variety of cash flow metrics are considered, some industries are simply more profitable than others. While standard economics would suggest a reversion to the mean through new competitors, this often occurs at a very slow pace over a long time horizon and in some cases may not occur at all because of barriers to entry.
- The benefits from above-average profits and/or cash flow are substantial and include internal capital growth, easier access to external capital and an additional buffer to unexpected adversity from both liquidity and capital perspectives.
- Some industries and their participants have challenges or strengths in areas such as research and development (R&D), brand recognition, marketing, distribution, cost levels and a potentially wide variety of other tangibles and intangibles that affect their ability in the area of profitability.

Industry Competitive Landscape

- The competitive landscape provides information regarding future profitability for the industry and thus somewhat crosses over into the profitability and cash flow assessment, but competition is deemed worthy of separate consideration because of its critical nature.
- Participants in industries that lack discipline, produce commodity-like products or services, have low barriers to entry and exhibit ongoing pricing war strategies generally have difficulty attaining high profitability levels in the longer term. Certain industries benefit from a monopoly or oligopoly situation, which may relate to regulation.

Industry Stability

- This factor relates primarily to the degree of stability in cash flow and earnings, measuring the degree to which the industry and its participants are affected by economic or industry cycles. Stability is considered critical as industries with high peaks and troughs have to deal with higher risk at the bottom of a cycle. As such, to some degree, industries with lower but stable profitability are considered more highly than industries with higher average profitability that is more cyclical.
- Some of the key factors in considering stability include the nature of the cost structure (fixed or variable), diversification that provides counter-cyclical and the degree to which the industry interrelates with the overall economy. Depending on the industry, economic factors could include inflation or deflation, supply and demand, interest rates, currency swings and future demographics.

Industry Regulation

- Where applicable, regulation can provide support through stability and a barrier to entry, but it can also cause challenges and change the risk profile of an industry and its participants in a negative way, including the reality of additional costs and complications in enacting new strategies or other changes.
- As part of its analysis of regulation, DBRS also considers the likelihood of deregulation for a regulated industry, noting the many examples where this transition has proven to be a major challenge in the past.

Other Inherent Industry Considerations

- Each industry has its own set of unique potential risks that, even if managed well, cannot be totally eliminated. Specific risks, the ability to manage them and the range of potential outcomes vary industry by industry. Two of the most common risks are changing technology and operational risks.
- Some of the other more common risks are in the areas of legal, product tampering, weather, natural disasters, labour relations, currency, energy prices, emerging markets and pensions.



INDUSTRY BUSINESS RISK RATING DEFINITIONS

DBRS specifies the BRR for an industry in terms of our **Long-Term Obligations** rating scale. When discussing industry BRRs for an industry, DBRS typically provides either one specific rating or a limited range (such as BBB (high)/BBB). Using a range recognizes the fact that, by their nature, industry BRRs are less precise than a specific corporate or security rating as they represent an overall industry. In addition to relating to the industry level, these definitions also apply to the business risk of individual companies, which will fall more often in the very high and low categories (AA/AAA and B) than would be the case for an entire industry.

Industry Business Risk Ratings (BRRs)

Rating	Business Strength	Comment
AA/AAA	Exceptional	An industry BRR of AA/AAA is considered unusually strong, with no meaningful weakness in any individual area. It may include pure monopolies that are deemed essential (the primary case being regulated utilities, where the risk of deregulation is believed to be very low). Common attributes include product differentiation, high barriers to entry and meaningful cost advantages over other industries or entities. These and other strengths provide exceptional stability and high profitability. It would be quite rare for an industry to have a BRR in this category.
A	Superior	Industry BRRs at the "A" level are considered well above average in terms of stability and profitability and typically have some barriers to entry related to capital, technology or scale. Industries that have, by their nature, inherent challenges in terms of cyclical, a high degree of competition and technology risks would be unlikely to attain this rating category.
BBB	Adequate	Industry BRRs at the BBB level include many cyclical industries where other positive considerations are somewhat offset by challenges related to areas such as commodity products, labour issues, low barriers to entry, high fixed costs and exposure to energy costs. This rating category is considered average and many industries fall within it, with key considerations such as overall profitability and stability typically considered as neither above or below average.
BB	Weak	An industry at the BB level has some meaningful challenges. In addition to high cyclical, challenges could include the existence of high technology or other risks. Long-standing industries that may have lost their key strengths through factors such as new competition, obsolescence or the inability to meet changing purchaser demands may fit here. The culmination of such factors results in an industry that does not generally score well in terms of stability and profitability. For an entire industry, this is typically the lowest BRR level.
B	Poor	While not common, there are cases where an industry can have a BRR of B. Such industries would typically be characterized by below-average strength in all or virtually all major areas.



INTERRELATIONSHIP BETWEEN FINANCIAL AND BUSINESS RISK

Having in mind the prior discussion on the typical importance that DBRS places on certain financial metrics and business strengths for the oil and gas industry, we provide some guiding principles pertaining to the application of DBRS methodologies, the first one being that, in most cases, an entity's business risk will carry more weight in the final rating than its financial risk.

Based on this underlying concept, we provide the additional guidance for individual companies with varying business risks:

- **For an Entity with a Business Risk of AA/AAA (Exceptional):** A company with a business risk of AA/AAA will almost always be able to obtain an investment-grade issuer rating. When financial metrics are in the BBB range, an entity with a business risk of AA/AAA would typically be able to attain an "A"-range issuer rating.
- **For an Entity with a Business Risk of "A" (Superior):** Unless financial strength fails to exceed the B range, superior business strength will typically allow the final issuer rating to be investment grade. Very conservative financial risk may in some cases allow the final issuer rating to be within the AA range, but this should not be considered the norm.
- **For an Entity with a Business Risk of BBB (Adequate):** At this average level of business risk, the level of financial risk typically has the ability to result in a final issuer rating from as high as "A" to as low as B.
- **For an Entity with a Business Risk of BB (Weak):** At this weak level of business risk, conservative financial risk can, in some cases, take the final issuer rating into the BBB investment-grade range.
- **For an Entity with a Business Risk of B (Poor):** It is not typically possible for a company with a business risk of B to achieve a final investment-grade issuer rating.

DEFINITION OF ISSUER RATING

- DBRS Corporate rating analysis begins with an evaluation of the fundamental creditworthiness of the issuer, which is reflected in an "issuer rating". Issuer ratings address the overall credit strength of the issuer. Unlike ratings on individual securities or classes of securities, issuer ratings are based on the entity itself and do not include consideration for security or ranking. Ratings that apply to actual securities (secured or unsecured) may be higher, lower or equal to the issuer rating for a given entity.
- Given the lack of impact from security or ranking considerations, issuer ratings generally provide an opinion of default risk for all industry sectors. As such, issuer ratings in the banking sector relate to the final credit opinion on a bank that incorporates both the intrinsic rating and support considerations, if any.
- DBRS typically assigns issuer ratings on a long-term basis using its **Long Term Obligations** Rating Scale; however, on occasion, DBRS may assign a "short-term issuer rating" using its **Commercial Paper and Short Term Debt** Rating Scale to reflect the issuer's overall creditworthiness over a short-term time horizon.

SHORT-TERM AND LONG-TERM RATINGS

- For a discussion on the relationship between short- and long-term ratings and more detail on liquidity factors, please refer to the DBRS policy entitled "**Short-Term and Long-Term Rating Relationships**" and the criteria *DBRS Commercial Paper Liquidity Support Criteria for Corporate Non-Bank Issuers*.

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