MOODY'S
INVESTORS SERVICE

Credit Opinion: Ecopetrol S.A.

Global Credit Research - 13 Dec 2013

Bogota, Colombia

Ratings

Category	Moody's Rating
Outlook	Stable
Issuer Rating -Dom Curr	Baa2
Senior Unsecured	Baa2

Contacts

Analyst	Phone
Thomas S. Coleman/New York City	212.553.0365
Steven Wood/New York City	212.553.0591

Key Indicators

Ecopetrol S.A.[1]

	9/30/2013(L)	12/31/2012	12/31/2011	12/31/2010	12/31/2009
EBIT / Book Capitalization	28.6%	30.1%	40.7%	25.3%	22.8%
EBIT / Interest Expense	16.6x	16.6x	35.8x	21.9x	27.7x
Retained Cash Flow / Net Debt	104.8%	182.2%	582.2%	131.6%	-1.7%
Gross Debt / Total Capital	25.6%	17.8%	13.8%	20.0%	19.4%
Gross Debt / Total Proved Reserves	$6.53	$4.54	$2.66	$3.25	$2.58
Total Proved Reserve Life (Yrs)	7.7	8.0	8.3	9.0	9.6

[1] All ratios are calculated using Moody's Standard Adjustments. Source: Moody's Financial Metrics

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

Opinion

Rating Drivers

- Leading integrated energy company in Colombia

- Growing production and reserves profile

- Rising costs but strong full cycle economics

- Aggressive capital program with execution risk

- Increasing leverage profile

- Government-related issuer and political risk concerns

Issuer Profile

Ecopetrol S.A. (Ecopetrol) is the state oil company and largest corporation in Colombia, involved in the exploration, production, refining, transportation, and marketing of crude oil and natural gas. Following an IPO in 2007 and a second round share offering in August 2011, the government owns 88.5% of the company through shares held by the Ministry of Finance.

Rating Rationale

Ecopetrol's Baa2 global local currency issuer rating (GLCR) reflects its status as Colombia's leading oil and gas producer and position as a mid-sized integrated oil company, as well as its growing production, reserves and crude oil export profile. A rising level of upstream and infrastructure investment under its Mega plan is leading to increased hydrocarbon production, primarily in heavy oil, and to the expansion of refining and transportation infrastructure to deliver growing oil and gas production to market. Rising production and stronger oil-based cash margins are supporting strong cash flows with moderate debt increases. However, the ratings also factor in the staging and execution risks of its ambitious growth strategy and expectations for a rising leverage profile under the Mega plan.

Ecopetrol's Baa2 rating derives one notch of uplift under joint-default analysis based on a high level of government support and moderate default correlation. Underlying the Baa2 GLCR is baseline credit assessment (BCA) of baa3.

DETAILED RATING CONSIDERATIONS

LEADING UPSTREAM & DOWNSTREAM POSITION IN COLOMBIA

Ecopetrol is the leading oil and gas producer in Colombia, accounting for approximately 64% of the country's BOE reserves and 66% and 58% of its respective current crude oil and natural gas production. With 1.88 billion BOEs of net proved reserves as of year-end 2012 (74% liquids) and production averaging 791,000 BOE/day (gross before royalties including affiliates) in the first nine months of 2013, Ecopetrol ranks as a mid-sized integrated oil company relative to its larger state oil company peers. In addition to selling its own production, Ecopetrol purchases and trades the government's royalty crude and a portion of the natural gas that are paid in kind, as well as a portion of third-party production in Colombia.

In the downstream, Ecopetrol owns all of the country's 335,000 barrels per day (bpd) of crude refining capacity through the 250,000 bpd inland refinery at Barrancabermeja and an 80,000 bpd plant at Cartagena, plus other smaller plants. The company produced approximately 292,000 bpd of refined product in the first nine months of 2013 and is the largest wholesale marketer in the Colombia, but does not engage in retail product marketing.

Ecopetrol is also Colombia's largest petrochemical producer, with 500,000 tons per annum of polypropylene capacity. It also owns indirectly and operates directly or in joint ventures more than 8,400 kilometers of crude oil and refined product pipelines, including 100% or majority stakes in four of the largest crude pipelines, which connect field production to the refineries and to wholesale product and export terminals.

GROWING RESERVES AND PRODUCTION PROFILE

Ecopetrol derives its production from six main geographic regions, but most of its production comes from the Central and Eastern regions of Colombia. Its production has shown rapid growth since 2008, mainly in the Llanos Basin in central Colombia from the Castilla, Rubiales/Quifa, and Chichimene fields, all heavy crude fields. The Northeast region is the principal source of natural gas from the Guajira field and light crude production from the Cusiana and Cupiagua fields. These fields, which have been a mainstay and are in decline, remain an important source of Ecopetrol's natural gas production. Other significant crude sources are the Mid-Magdalena with medium grade crude, and the Catatumbo/Orinoquia regions, the latter in the eastern provinces along the border with Venezuela. The company is also engaged in exploration internationally in the US Gulf of Mexico, Peru, and Brazil.

Ecopetrol gross production grew by an average of around 5% for the first nine months and is expected to exit the year with production closer to 800,000 BOE/day. Close to 83% of its production is crude oil, with a rising share of heavy oil, which makes up about 54% of total crude production. The Castilla, Chichimene (Ecopetrol operator) and Rubiales/Quifa fields (operated by partner Pacific Rubiales) contribute about 54% of total crude production and are expected to be the major drivers of production growth in the near-term.

The company is also increasing its focus on natural gas exploration and production, with efforts concentrated onshore in the Foothills and Catatumbo areas and offshore on the Caribbean basin. Furthermore, Colombia is in the early stages of exploring unconventional shale gas and coal bed methane opportunities, which are also attracting international partners such as ExxonMobil and ConocoPhillips. Ecopetrol increased its gas production

by about 8about 8% per annum from 2011-2013.

RISING COSTS BUT STRONG FULL CYCLE ECONOMICS

With a significant increase in heavy oil exploration and development, Ecopetrol is showing an improving reserve profile and strong full cycle economics. Its three-year average reserve replacement in 2012 was 148%, reflecting both upward revisions and discoveries.

Upward revisions and discoveries have come primarily from the Rubiales, Chichimene, and other older fields. Despite rising production, its reserve life has increased since 2008 to 7.8 years total and 5.7 years proved developed (PD) at September 30, 2013. At the same time, proved undeveloped reserves have declined from 43% in 2008 to about 27% of total reserves, based on year-end 2012 reserves.

Ecopetrol has a large proportion of higher cost heavy crude and its upstream cost structure has increased, but higher oil prices and crude realizations tied to Brent are supporting stronger cash margins, and its unit costs are very competitive, with total full cycle costs peaking at $57.63/BOE in 2012 and slightly lower at $57.43 in the last twelve months ending September 2013. Ecopetrol's unit production costs have declined in line with higher production, despite higher well maintenance, workover, and wastewater treatment costs, from the peak of $28.60/BOE in 2012 to $26.96 in Q3' 2013. As a result, Ecopetrol's leveraged full cycle ratio is strong, estimated at 3.65X in 2012 and 4.52X for LTM September 2013. (Our cost structure analysis is estimated based on a gas/oil conversion ratio of 6:1, with production reported net of royalties, whereas most of the company's reported information is based on gross production before royalties.)

Ecopetrol's unleveraged cash margin for the last twelve months ending September 30, 2013 was $77.06/BOE. The company's three-year all-sources F&D costs averaged $16.38/BOE in 2012, benefiting from large upward revisions on heavy oil reserves as well as discoveries, while one-year F&D costs increased to $22.70/BOE.

CAPITAL RAMP UP FOR MEGA PROGRAM

Ecopetrol has ramped up capital spending significantly since 2008 to fund its Mega plan, which is expected keep spending at elevated levels to increase crude oil and gas production, support infrastructure expansion, and refining upgrades. The Mega plan sets an ambitious capital program estimated at $75 billion for 2013-2020 (averaging about $9.4 billion p.a.).

Spending from 2013 to 2020 includes $64 billion in the upstream to raise production to 1.3 million BOE/day by 2020. In the midstream, infrastructure spending will remain elevated as Ecopetrol and its partners expand pipeline takeaway and storage capacity, particularly to meet rising production from the Llanos Basin. The goal is to increase crude pipeline takeaway capacity and to grow compression capacity to about 1.4 million bpd in 2016. Most recently, the largest pipeline project was completed, the $1.6 billion first phase of the Bicentenario pipeline, with 120,000 bpd connecting the Llanos Basin via the Cano Limon Pipeline to the port of Covenas.

In the downstream, the two refineries are smaller scale with relatively low conversion capabilities. The company is in planning stages on an upgrade of the Barrancabermeja refinery that could exceed $7 billion and nearing completion of a $6.5 billion project to double throughput capacity at Cartagena from 80,000 bpd to 165,000 bpd by 2015, while increasing conversion to handle a heavier domestic crude slate (from current 20% to 60%) and produce a higher value yield of gasoline and middle distillates at both refineries.

Ecopetrol spent $4.9 billion on its capital budget in the first nine months of 2013 and expects to spend close to $6.7 billion for the full year (Ecopetrol S.A. plus its subsidiaries). Over half of the budget will be directed to higher exploration and development spending in Colombia. Infrastructure spending will also continue to be elevated, including Bicentenario and other growth projects. Ecopetrol has formed a new mid-stream subsidiary, Cenit, which holds its interest in Bicentenario, Ocensa, and its other pipelines. Cenit will be a platform for growth in the midstream, possibly providing its own financing or tapping third parties.

LEVERAGE PROFILE IS MODERATE BUT INCREASING

Ecopetrol's moderate leverage position is a legacy of its status as a state company and the government's intention to strongly capitalize it post-IPO to support acquisitions and future growth. Despite higher capital spending, strong oil prices and production growth have resulted in rising cash flows and modest leverage increases. While the company outspent cash flow in the first nine months of 2013 and will be cash flow negative for the year, it has been able to fund higher capital needs by drawing on its large cash an investment reserves.

Our view of Ecopetrol incorporates rising financial leverage over the next two to three years as spending for the

Mega plan is expected to exceed internal cash flow. In addition, a high statutory dividend payout will compete with funds needed for reinvestment.

We do not expect leverage increases to affect Ecopetrol's ratings, given its relatively modest debt balances and strong liquidity. The company's leverage metrics are in line with its peers, with adjusted Debt/Total Proved Reserves of $6.53/BOE and Debt/PD Reserves of $8.91/BOE as of September 30, 2013 (proforma based on 2012 data). Debt/Average Daily Production rose to about $18,200/BOE. Ecopetrol also has access to equity and will realize the proceeds from any future share issues until state ownership falls to 80%, as was the case in August 2011 when the company issued $1.3 billion of equity.

GOVERNMENT SUPPORT PROVIDES RATINGS UPLIFT

Ecopetrol's Baa2 global local currency issuer rating reflects ratings uplift based on Moody's joint default rating methodology for government related issuers (GRIs). For Ecopetrol we assume a high level of government support, given its financial contribution to the government, strategic importance, and reputation risk. We view default correlation between the two entities as moderate, resulting in uplift in the local currency rating to Baa2.

The Baa2 foreign currency bond rating is one notch above the Colombia's Baa3 foreign currency rating (positive outlook), reflecting a view of moderate risk of a general debt moratorium and a lower probability that Ecopetrol would be subject to a payment moratorium. Ecopetrol's exports are rising in tandem with higher production, with about 58% of its crude exported in the 2013, mainly to the US, the Caribbean basin, and a rising amount to Asia (about 34%).

POLITICAL RISK CONCERNS

Colombia has witnessed a widespread decline in guerilla activity since the early 2000 period. However, Ecopetrol and the oil industry in general remain subject to periodic guerilla activity, including pipeline and compression station bombings and kidnappings, as well as agitation in areas such as the eastern provinces along the border of Venezuela and in the far south. Bombing of the Cano Limon Pipeline in particular, which is a raised pipeline, has picked up in 2013. However, President Juan Manual Santos is a former defense minister and has stepped-up protection of energy infrastructure, as well as promoted social programs to gain the support of local populations. He is also negotiating with the FARC to try to end the insurgency. Other risks include labor disruptions and access to new areas for future exploration and development, which will require soliciting the support and participation of indigenous peoples.

Liquidity

Ecopetrol has a solid liquidity position, including $8.3 billion of consolidated cash and short-term investments ($5.6 billion parent) as of September 30, 2013 as a result of a US$2.5 billion note offering COP$900 billion of local market issuance in 2013. This cash could be drawn down in 2013 and 2014 to support higher spending. The company has access to international bond markets, drawings under a $1 billion US Export Import Bank facility, or local Peso bonds. The debt maturity profile is manageable.

Rating Outlook

The outlook for both the Baa2 foreign currency and Baa2 GLCR is stable, with good flexibility to sustain higher capital spending and expected debt increases.

What Could Change the Rating - Up

Despite higher spending and potential debt increases, Ecopetrol could be upgraded in the medium-term as it continues to grow production and execute on the Mega plan while maintaining moderate financial leverage.

What Could Change the Rating - Down

The BCA and ratings could be pressured if debt increases materially beyond expectations or if production growth significantly underperforms. The ratings could also be pressured if we viewed the likelihood of government support to be weaker.

Other Considerations

Comment on Grid Implied Rating: Using the Global Integrated Oil Rating Methodology, the implied rating of A2, before notching for government fiscal dependence, versus our BCA of baa3. The methodology outcome benefits

from solid scale positioning and solid cash margins as the company is primarily an oil producer. The forward look is weaker based on expected debt increases and the drawdown of cash resources as the company finances the Mega plan.

Rating Factors

Ecopetrol S.A.
600011139

Integrated Oil & Gas [1][2]	**LTM as of 09/30/2013**		[3]**Moody's 12-18 Month Forward View**
Factor 1: Reserves & Production Characteristics (25%)	Measure	Score	Score
a) Average Daily Production (Mboe/d)	662.6	A	A
b) Proved Reserves (Million boe)	1851.4	Baa	Baa
c) Total Proved Reserve Life (Yrs)	7.7	Baa	Ba
Factor 2: Re-Investment Risk (10%)			
a) 3-Year All-Sources Reserve Replacement	148%	Aa	Baa
b) 3-Year All-Sources F&D Cost ($/boe)	$16.4	Ba	Caa
Factor 3: Operating & Capital Efficiency (10%)			
a) Return on Capital Employed (ROCE) (3 Year Avg)	34.8%	Aaa	Aa
b) Leveraged Full-Cycle Ratio	4.5x	Aaa	Baa
Factor 4: Downstream Rating Factors (15%)			
a) Total Crude Distillation Capacity ('000 bpd)	335.0	Ba	Ba
b) # of Refineries with Capacity > 100 M bpd	1.0	B	B
c) Segment ROCE (3 Year Avg)	20.4%	Aa	Caa
Factor 5: Financial Metrics (40%)			
a) Retained Cash Flow / Net Debt (3 Year Avg)	158.3%	Aaa	Aaa
b) EBIT / Interest Expense (3 Year Avg)	32.7x	Aaa	A
c) Gross Debt / Total Proved Reserves	$6.5	Ba	A
d) Gross Debt / Total Capital	25.6%	Aa	Aaa
Rating:			
Indicated Rating from Grid Factors 1-5		A2	Baa1
Notching for Government Fiscal Dependence		1	1
Indicated Rating from Grid		A3	Baa2
Actual Baseline Assigned		baa3	

Government-Related Issuer	**Factor**
a) Baseline Credit Assessment	**baa3**
b) Government Local Currency Rating	**Baa3**
c) Default Dependence	**Moderate**
d) Support	**High**
Final Rating Outcome	**Baa2**

[1] All ratios are calculated using Moody's Standard Adjustments. [2] Based on financial data as of 9/30/2013; Source: Moody's Financial Metrics [3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources Moody's considers to be reliable, including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.