Chapter 15

Petrozuata, Venezuela

Type of project
Crude oil production and upgrading.

Country
Venezuela.

Distinctive features
• Largest project financing and project bond offering in Latin America to date.
• Project credit ratings above sovereign credit ratings.
• Highest credit rating for a project in Latin America at the time of financing.
• Size of bond and bank tranches determined by market.
• No political risk insurance.
• Longest maturity to date for bank loan related to Latin America.
• Portion of sponsors’ equity financed with early production cash flow.
• Cost overrun funded by sponsors.

Description of financing
A total of US$1.4 billion was raised through a combination of bonds and commercial bank financing.

Project summary1
Petrozuata is a Venezuela-domiciled joint venture between two large strong-credit oil companies: Conoco, the Houston-based integrated petroleum company, through its subsidiary Conoco Orinoco; and Petroleos de Venezuela SA (PDVSA), the Venezuelan state oil company, through its subsidiary Maraven. It is the first of four strategic associations between PDVSA and foreign partners formed to develop, transport, upgrade and market extra-heavy crude oil from the Zuata area in the Orinoco Belt of Venezuela. The projects are sometimes called ‘very heavy oil projects’ (VEHOPs). The others are as follows:

• Cerro Negro (42 per cent Exxon Mobil, 42 per cent PDVSA, 16 per cent Veba Oel AG);
For Petrozuata, project completion is guaranteed by the sponsors. Risks related to oil reserves, project completion and project operation are relatively low. Country risk has risen continually because of concerns about the administration of President Hugo Chávez, but is somewhat mitigated by the strategic importance of oil exports.

Because of the strength of the sponsors, the project’s strategic importance and the flow of US dollar-denominated export revenues into a segregated offshore account, which is used to service project debt, Petrozuata’s credit rating pierces Venezuela’s sovereign ceiling. A total of US$1.4 billion was raised through bonds with maturities of 12, 18 and 25 years, and bank term loans with maturities of 12 and 14 years. The amounts of the bond and bank loan portions were determined by market conditions. The project’s ability to service its debt depends partly on the price of its ‘synthetic’ crude oil exports, which fluctuate with world oil prices.

Petrozuata was assigned an area of 300 square kilometres (km) for the production of extra-heavy crude oil by the Venezuelan Ministry of Energy and Mines. The assigned area is estimated to carry approximately 21.5 billion barrels of original oil in place.

The project’s first well was drilled in September 1997. Over the 35-year life of the project the company planned to drill about 530 horizontal wells to recover 1.5–2.0 billion bar-

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**Exhibit 15.1**

**Map of project area**

![Map of project area](image)

*Source: Prospectus for Project Bonds.*
rels of extra-heavy crude oil. In the past cyclical steam stimulation of nearly vertical wells has been the preferred technology for developing extra-heavy oil deposits in the region. Petrozuata chose horizontal wells without steam stimulation because recent technology advances have allowed longer lateral wells to be drilled and there are fewer maintenance problems with this method.

The project has three principal components: oil field development, a pipeline system and downstream facilities. These facilities comprise an upgrader and loading terminal at José, near Puerto La Cruz on the Caribbean coast of Venezuela (see Exhibit 15.1). The company expected to produce approximately 120,000 barrels a day of extra-heavy crude from multiple wells in the assigned area, mix the crude with a dilutent consisting primarily of naphtha and transport it about 200 km by pipeline to the upgrader at José. Two parallel pipelines would be built, one to transport the diluted crude to José and the other to return the dilutent to the oil field for reuse. The pipelines would be shared with Sincor.

In the upgrader at José Conoco’s licensed coking technology is used to refine 120,000 barrels of extra-heavy crude oil with an average API gravity of 9° to 102,000 barrels of ‘syncrude’ (upgraded crude) with gravity of 20° and three byproducts: fuel coke, liquefied petroleum gas (LPG) and sulphur. Most of the syncrude is expected to be processed at Conoco’s refinery at Lake Charles, Louisiana, which produces 226,000 barrels a day, but some will also be processed at Maraven’s Cardón refinery in Venezuela.

More than 95 per cent of Petrozuata’s projected revenue is generated in US dollars outside Venezuela and paid into segregated offshore accounts. Funds from the offshore accounts have been disbursed as needed for project construction, operating funds and debt service.

Background
PDVSA, Conoco, Petrozuata and subsidiaries
PDVSA is the second largest integrated oil company in the world. One fifth of the company’s assets is outside Venezuela. Among its subsidiaries is Citgo, the largest marketer of petrol (gasoline) in the United States. Petrozuata’s success is of strategic importance to PDVSA and Venezuela. The Orinoco belt has remained largely untapped because of the oil’s heavy, high-sulphur characteristics, and the lack of infrastructure, markets and investment capital. The project is part of La Apertura (‘the opening’), PDVSA’s long-term development plan to expand the country’s capacity to produce and export oil with the help of foreign private-sector partners.

At the time of the project financing Conoco Orinoco, formed in 1995 to conduct petroleum-related development activities in Venezuela, was a subsidiary of Conoco. Since 1981, Conoco had been a wholly owned subsidiary of DuPont Energy Company, while maintaining its own identity as a major integrated oil company. In 1999 it was spun off by DuPont and in 2002 it merged to become ConocoPhillips. ConocoPhillips is one of PDVSA’s largest independent customers and has particular expertise in processing Venezuelan heavy crude oil. It has identified Venezuela as a strategically important area for investment. The project is an opportunity for ConocoPhillips to expand its daily hydrocarbon production by about 9 per cent, to increase its hydrocarbon reserves by about 35 per cent and to broaden the use of its proprietary coking technology.

The legal relationship between the project participants is illustrated in Exhibit 15.2. PDVSA owns 100 per cent of Maraven and guaranteed its completion undertaking to the
senior lenders. Maraven, in turn, guaranteed 49.9 per cent of Petrozuata’s completion undertaking. Conoco Orinoco, which remained a subsidiary of Conoco following the separation from DuPont, currently has only one asset, its investment in Petrozuata. Conoco Orinoco owns 51.1 per cent of Petrozuata and, with Maraven, is jointly responsible for Petrozuata’s completion undertaking. Finally, the pipeline is owned by a wholly owned subsidiary of Petrozuata called Pipeco.

Project schedule
Completion had to be achieved by the first completion date in December 2001 unless there was an allowable force majeure extension, in which case the final completion date had to be no later than September 2002. See Exhibit 15.3 for the schedule of the project as a whole.

Project financing
The company estimated that the total cost of the project would be US$2.425 billion (see Exhibit 15.4). About 40 per cent of the cost would be financed by the shareholders and the remaining 60 per cent would be financed with senior debt. Part of the equity contribution would consist of proceeds from the sale of crude oil after the oilfield was developed but before the upgrader was completed.
Alternative financial sources considered

The bond financing originally was planned to be US$650 million, but it was later raised to US$1 billion after indications of investor interest. The commercial loan portion of the financing was scaled back proportionally.

The financing team

Credit Suisse First Boston (CSFB) was an adviser to Petrozuata; lead manager of the bond offering; and agent bank and joint arranger of the term loan with ING Barings, NationsBank (now Bank of America) and Union Bank of Switzerland (UBS). Citibank served as co-manager of the bond offering and financial adviser to Petrozuata.

Structure of financing

Working with the bank advisers Petrozuata’s partners agreed on a 60:40 ratio of debt to equity and thus developed a plan for US$1.45 billion of debt financing. Because the transaction was large for a country of Venezuela’s credit standing, the project sponsors thought that participation by the International Finance Corporation (IFC) and one or more export credit agencies would be needed for funding and credit support. The sponsors secured investment-grade ratings from Moody’s and from Standard & Poor’s, and, with the help of those ratings, got underwriting commitments of US$700 million from the bank group, later supplemented by US$200 million from the Export Development Corporation of Canada. In the summer of 1997 market conditions looked so favourable that CSFB advised Petrozuata to forgo facilities committed by the multilateral agencies and go immediately to the bond market. On the basis of CSFB’s preliminary indications during premarketing to institutional investors the sponsors decided to increase the bond offering from US$500 million to US$1 billion and scale back the bank financing from US$900 million to US$450 million.

Bond offering

The bond offering was structured in three tranches to suit different investors’ preferences. New-issue spreads were the tightest to date for project-finance bonds. The US$300 million of 12-year bonds were sold at 120 basis points (bps) over US treasuries, the US$625 million of 20-year bonds at 145 bps over US treasuries and the US$75 million of 25-year bonds at a spread of 160 bps.

Exhibit 15.4
Sources and uses of funds

<table>
<thead>
<tr>
<th>Sources</th>
<th>(US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior debt facilities</td>
<td></td>
</tr>
<tr>
<td>7.63% series A bonds due 2009</td>
<td>300</td>
</tr>
<tr>
<td>8.22% series B bonds due 2017</td>
<td>625</td>
</tr>
<tr>
<td>8.37% series C bonds due 2022</td>
<td>75</td>
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<tr>
<td>Commercial bank facility</td>
<td>450</td>
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<tr>
<td>Total senior debt facilities</td>
<td>1,450</td>
</tr>
<tr>
<td>Shareholder funds</td>
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<tr>
<td>Paid-in capital</td>
<td>79</td>
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<tr>
<td>Subordinated shareholder loans</td>
<td>366</td>
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<tr>
<td>Cash flow</td>
<td>530</td>
</tr>
<tr>
<td>Total shareholder funds</td>
<td>975</td>
</tr>
<tr>
<td>Total sources</td>
<td>2,425</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Uses</th>
<th>(US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra-heavy crude oil production facilities</td>
<td>449</td>
</tr>
<tr>
<td>Pipeline system</td>
<td>216</td>
</tr>
<tr>
<td>Upgrader and loading facilities</td>
<td>1,067</td>
</tr>
<tr>
<td>Extra work contingency</td>
<td>38</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1,770</td>
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<tr>
<td>Capitalised costs before operating and development</td>
<td>147</td>
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<tr>
<td>Financing costs</td>
<td>370</td>
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<tr>
<td>Senior debt reserve account balance</td>
<td>81</td>
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<tr>
<td>Cash balance</td>
<td>57</td>
</tr>
<tr>
<td>Total uses</td>
<td>2,425</td>
</tr>
</tbody>
</table>

Source: Prospectus for Project Bonds.
Because of the combination of quality, yield and duration the bond offering was several times oversubscribed. Bonds were requested by 145 institutions, but made available to only 113. Some investors asked for exactly what they wanted. Others, expecting to be ratched down, asked for more. The staff at CSFB’s syndicate desk had to allocate bonds in line with their knowledge of regular customers’ buying patterns. The 25-year tranche was purchased by insurance companies that know the market well and are accustomed to following such investments over long periods. Buying bonds in the 25-year tranche helped these investors to get bonds in the 18-year tranche as well. The 12-year bonds were purchased by investors that were looking for a good yield but were less certain of their holding periods and were concerned with liquidity. As evidence of the liquidity of the shorter-maturity bonds, Jonathan D. Bram, Managing Director of CSFB, noted that more than US$1 billion of these bonds were traded in the first year after they were issued.

To facilitate the bond offering and ensure the applicability of a low withholding tax levied on interest payments, Petrozuata borrowed the US$1 billion capital market proceeds through banks acting as qualifying financial institutions. The banks in turn made a loan to Petrozuata Finance, Inc. (PZ Finance), which in turn issued the bonds. PZ Finance is incorporated with nominal equity capital under the laws of the Cayman Islands for the sole purpose of incurring senior debt, including the bonds. Petrozuata does not control PZ Finance but unconditionally guarantees all of its obligations.

Commercial bank financing

Before the bond offering Petrozuata received commitments to severally underwrite up to US$700 million of senior debt from a group of four banks: CSFB, UBS, NationsBank and ING Barings. The commitments were subject to several conditions:

- satisfactory results of due diligence;
- execution of satisfactory documentation;
- investment-grade credit rating for the bonds from two internationally recognised rating agencies;
- nonoccurrence of materially adverse changes in the political and economic conditions of Venezuela;
- conditions in the market for syndicating Latin American project finance loans; and
- the financial condition of the sponsors, the guarantors, the company and the project.

The bonds received most of the publicity, but Bram believes that the bank lenders deserve equal credit for the success of the financing. Although the amount of the bank financing was scaled back from US$900 million to US$450 million by the size of the bond offering, it was notable in two ways. First, the 14-year final maturity of the US$200-million tranche was the longest to date for a bank loan related to Latin America. Second, there was no political risk insurance.

Contractual relationships

Engineering, procurement and construction contract

In July 1997 Petrozuata awarded a lump-sum EPC contract worth approximately US$500 mil-
lion to build the extra-heavy crude-oil processing facilities at José to the Contrina consortium, which consists of:

- Brown & Root Energy Services of Houston, Texas, a subsidiary of Halliburton Company;
- Parsons Process Group, also of Houston;
- Technip of Paris;
- Proyecta of Caracas; and
- DIT–Harris, also of Caracas.

At about the same time it signed a contract with Convenco, a consortium comprised of Kock, Weeks Marine and DSD–CGI, for the construction of a marine terminal at José.

Association Agreement

The Association Agreement between Maraven and Conoco Orinoco, dated 10 November 1995, defined the conditions for establishing, operating and owning a joint stock company in Venezuela for the purpose of constructing, financing and managing the project. The capital stock of the company consists of Class A privileged shares (49.9 per cent of total) owned by Maraven and Class B shares (50.1 per cent of total) owned by Conoco Orinoco. On the 35th anniversary of the first Commercial Lifting Date, the date on which the first tanker completes its loading of extra-heavy crude oil, Class B shares must be transferred at no cost to Maraven.

Failure by a shareholder to make capital contributions or shareholder loans is defined as an Association Agreement default. Until the default is remedied the defaulting shareholder cannot acquire or transfer shares in the company or be represented on the board of directors. Any amounts normally available for distribution to the defaulting shareholder, including dividends and subordinated loan repayments, will first be applied to remedy the default, including interest and penalties. A Class B shareholder that remains in default for 14 months will be required to surrender its shares to nondefaulting shareholders to satisfy obligations and penalties incurred, and will remain liable for any additional amounts due.

Transfer Restrictions Agreement

Before the first Commercial Lifting Date or project completion, whichever is later, no shareholder may sell, assign or otherwise transfer its shares. After that point a shareholder may transfer shares to an affiliate. A shareholder may sell shares to a nonaffiliate, subject to other shareholders’ rights of first refusal, in which Class A shareholders hold a privileged position. Class B shares may be sold to a nonaffiliate subject to the approval of Class A shareholders.

Completion agreement

To facilitate the financing and provide flexibility in the construction plan, Conoco Orinoco and Maraven agreed severally to complete the project by a certain date, to fund any cost overruns required to complete the project, and to pay down project debt to levels that would maintain modelled debt service coverage ratios (DSCRs) in the event that the project did not meet design capacity targets.
The joint-venture company was the general contractor for the project. Unlike in some project financings, lump-sum contracts for the various subcomponents were not required as a condition for the project financing, but were awarded later at Petrozuata’s discretion. Miguel Espinosa, then Assistant Treasurer of Conoco, believed that the flexibility allowed by this arrangement saved about 15 per cent in construction costs.

The criterion for project completion under the agreement was a 90-day operations test, during which oilfield production, the pipeline system and the upgrader facilities were to be required:

- to meet prescribed production levels;
- to meet specifications on product quality consistent with the Conoco Purchase and Sale Agreement (PSA);
- to demonstrate 92 per cent availability; and
- to meet Venezuela’s environmental requirements.

The pipeline system would be tested to demonstrate its full capacity. The delayed coker, the naphtha hydrotreater and the sulphur units would be tested to demonstrate their licensed design capacities.

**Performance guarantees**

Initially, DuPont and PDVSA severally guaranteed the obligations of the two shareholders under the completion agreement. When Conoco was spun off it assumed DuPont’s guarantee.

**Conoco Purchase and Sale Agreement**

To reduce the risk of marketing the syncrude Conoco made a 35-year commitment to purchase 100 per cent of the project’s design output at a market-based formula price. However, Petrozuata has the right to sell to third parties if, as the partners expect, a wider market develops for syncrude.

**Common Security Agreement**

To accommodate both commercial bank and bond financing, and to define the relative rights of all the senior lenders in the event of default under the senior loan agreements, Petrozuata, PZ Finance and the shareholders entered into a Common Security Agreement with the Indenture Trustee, the Common Security Agreement Trustee, the Offshore Financial Institutions, and the Administration Agent on behalf of the bank lenders. The agreement includes drawdown procedures under the senior debt agreements, representations and warranties, affirmative and negative covenants, common events of default applicable to all senior debt (including bonds and bank debt), remedies in the event of default, and the account structure. Under the agreement all senior loans, including the bonds and the bank financing, will rank *pari passu* and will share *pro rata*, based on amounts outstanding, in the common security package (described below). The law of the State of New York governs the agreements covering security interests, except where the security interest arises under Venezuelan law, principally in the case of mortgages on real property and other property considered real property.
Under the Common Security Agreement Petrozuata is required to establish and maintain the following segregated accounts outside Venezuela, all in the name of the Common Security Agreement Trustee:

- Offshore Proceeds Account;
- Senior Debt Reserve Account;
- Offshore Loan-Drawdown and Shareholder Funding Account;
- Offshore Operating Account; and
- Offshore Casualty Account.

Exhibit 15.5 illustrates the order of priority according to which funds are applied by the company.

Exhibit 15.5

Priority application of funds

90 days project expenses (pre-completion) or restricted operating costs (post-completion)

Revenues from sale of products

Certain insurance proceeds in excess of US$150 million and expropriation compensation in excess of US$75 million

Operating Account

Senior Debt Obligations

Senior Debt Reserve Account

Restricted Payments

Subject to 12-month historic and projected 1.35 coverage test

Required 6 months’ debt service coverage ratio
Restricted payments

The company is permitted to withdraw funds from the segregated accounts for purposes such as paying shareholder dividends or subordinated debt payments semiannually within 30 days of each principal-and-interest payment date, provided that:

- there is no event of default under the Common Security Agreement;
- there are sufficient funds in the account for 30 days of forecast project expenses (before completion) or 30 days of forecast ‘Restricted Operating Costs’ (after completion);
- the Senior Debt Reserve Account is fully funded; and
- the 12-month historical and 12-month projected DSCR is not less than 1.35:1.

‘Restricted Operating Costs’ are normal project expenses, excluding amounts payable for hedging instruments related to senior debt obligations, and capital expenditures beyond those necessary to maintain the project’s operating capacity and prevent an increase over the budgeted level of operating expenses.

Senior Debt Reserve Account

The company is required to maintain funds in a Senior Debt Reserve Account equal to the principal, interest, and fees due on the next payment date. Funds may not be withdrawn from this account unless there are no funds available other than in the casualty account (described below).

Casualty Account

An offshore account was be established for the deposit of proceeds from property and casualty insurance, except for any portion relating to the interruption of business or loss of profits, and a segregated local currency account will be established for insurance proceeds that, under Venezuelan law, cannot be paid into an offshore account.

Covenants

Affirmative covenants in the Common Security Agreement include:

- maintenance of existence;
- maintenance of accounting and information systems;
- compliance with laws;
- maintenance of approvals;
- arm’s-length transactions with affiliates;
- construction, completion and operation of the project;
- compliance with project agreements;
- direction of certain payments to specific, segregated offshore accounts; and
- use of proceeds.

Negative covenants include:

- limitations on amendments to the company’s charter;
- limitations on disposition of assets;
• a prohibition of material modifications;
• limitations of project contracts;
• limitations on liens, indebtedness and guarantees; and
• limitations on disposing of excess property.

Other covenants relate to terms and conditions of sales contracts with unaffiliated parties, and to the use of loan proceeds.

Events of default

Events of default in the Common Security Agreement include:

• payment defaults;
• breach of representations and warranties;
• breach of covenants;
• bankruptcy of Petrozuata or PZ Finance;
• default under the completion or transfer restrictions agreement;
• default by Conoco under the Conoco PSA;
• abandonment;
• invalidity of security agreements;
• attachment of collateral;
• an unsatisfied final judgement against Petrozuata or PZ Finance in excess of US$10 million;
• unenforceability of the Common Security Agreement, transfer restrictions agreement, any of the project agreements or the security documents;
• failure to achieve completion by the final completion date;
• expropriation; and
• bankruptcy of (originally) DuPont or (subsequently) any other guarantor of Conoco’s obligations under the Conoco PSA.

There is also a provision for cross-acceleration among the debt facilities.

Collateral

The bonds and other senior debt are secured by:

• a pledge of offshore accounts and the expropriation compensation account;
• a collateral assignment of certain project agreements;
• a pledge of Conoco Orinoco’s subordinated debt and all but one of its Class B shares;
• a pledge of dividends on all the Pipeco shares and Conoco Orinoco Class B shares;
• a pledge of all but one of the Pipeco shares;
• a mortgage on the upgrader and other physical assets in José;
• an assignment of the proceeds of any compensation in the event of expropriation;
• an assignment of insurance policies;
• a placement in a Venezuelan trust of local currency accounts and oil after extraction but prior to sale; and
an assignment of rights under the sales agreement, including the Conoco PSA, the Pipeline Agreement, the Solids Handling Agreement, the Excess Capacity Agreement and the Coking Technology Licensing Agreements.

Insurance
The Common Security Agreement requires the company to maintain a construction all-risk policy during project construction, and then property, business interruption and third-party liability insurance when the project is operating. The Common Security Agreement Trustee is named on the policies, along with an additional insured and loss payee.

Transactions among project participants
Certain related-party transactions and arrangements are illustrated in Exhibit 15.6. The Association Agreement requires that shareholders contribute relevant technological knowhow to Petrozuata under licensing agreements or otherwise. Under the Technical Assistance Agreement, secondment agreements and the Coking Technology Licensing Agreement, the shareholders committed themselves to training Petrozuata’s personnel at Petrozuata’s expense.

A *usufructo*, such as that conveyed by Pipeco to Maraven and Petrozuata, is a real right under Venezuelan law that allows the holder an unlimited right to use an asset; bars any other party, including the owner, from disturbing the *usufructo*-holder’s use; and allows the *usufructo*-holder certain rights to institute legal actions against a party that wrongfully interrupts the use of the asset by the *usufructo*-holder.

Supply contracts
One of Petrozuata’s primary operating objectives is to ensure that the project proceeds as scheduled, while also taking advantage of possible synergies, both within Petrozuata, and between Petrozuata and nearby projects. It has endeavoured to ensure that supplies and services are available to meet project needs at market prices consistent with the project budget. All the supply contracts are governed by Venezuelan law.

An electricity supply contract with CA de Electrificación y Fomento Eléctrico (CADAFE) is automatically renewable each year during the construction period and provides for pricing at market rates. Under a 25-year renewable umbrella agreement, signed in 1996 with various affiliates of PDVSA including Maraven, CVG Electrificación y Fomento Eléctrico (EDELCA) undertook to supply up to 1,549 MW of electricity at a fixed price of US$0.107 per kWh for the first 12 years and then at market rates. Certain rights and obligations under this agreement are assigned to Petrozuata.

Under a hydrogen supply contract with Superoctanos, Petrozuata will purchase hydrogen-rich gas for use in the naphtha hydrotreating facilities. The contract has a 20-year term, renewable for 5-year periods. The purchase price is calculated using a formula that takes into account the fuel value of the hydrogen gas and a share of the capital cost savings realised by the project.

An industrial water supply contract with Petroquímica de Venezuela provides for both treated and untreated water. The contract price is US$0.52 per cubic metre until total water supplied exceeds 1,360 litres per second, and then US$0.40 per cubic metre.
Exhibit 15.6

Related party transactions and arrangements
A natural gas supply contract with Cevegas, CA, provides Petrozuata with natural gas for its fuel requirements at a contract price of US$0.515 per million Btus (in 1996 US dollars), for the life of the contract, until 2006, when the price may be adjusted to reflect new technical considerations and/or market price fluctuations.

Environmental considerations
The project was designed to comply with Venezuela’s environmental laws and regulations, and, although not required, with the World Bank’s environmental standards as well. The Association Agreement requires Maraven to reimburse Petrozuata for expenses resulting from claims relating to any environmental damage before 10 November 1995, the date on which the Association Agreement became effective.

Petrozuata undertook an environmental feasibility study in 1992 followed by an environmental assessment during 1993 and 1994. Several discrepancies were found, but these were estimated to be unlikely to have a serious effect on the project. There were nine abandoned pits associated with previous oil-drilling work in the production acreage, but any remediation required because of the presence of oil was the responsibility of PDVSA. In the past parties other than Petrozuata had dumped construction waste materials and oil in part of the upgrader lot, causing limited soil contamination, but here too any required clean up was PDVSA’s responsibility. No significant contamination was found either along the pipeline system corridor or in the loading facilities area.

An environmental impact assessment was completed in January 1996 by Consorcio Caura-Georhidra, a prominent Venezuelan environmental consulting firm. In March 1996, after several modifications to the project design, the Venezuelan Ministry of the Environment and Renewable Natural Resources issued an environmental impact statement. Since then Petrozuata has received all environmental permits and authorisations.

Sensitivity analysis
As mentioned above, an independent technical review was conducted by Stone & Webster. The firm estimated project construction costs, contracts and agreements, criteria for the completion test, compliance with Venezuela’s environmental regulations, and revenue and expense projections. It found them all to be reasonable. It cited the base-case projection summarised in Exhibit 15.7, in which revenues were adequate to pay operation and maintenance expenses, as well as taxes and royalties to the Venezuelan authorities. Cash flow was sufficient to provide for debt service, and to result in a minimum DSCR of 2.08, an average DSCR of 10.61 and a life-of-loan DSCR of 2.47.

<table>
<thead>
<tr>
<th>Exhibit 15.7</th>
<th>Base-case projection (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
</tr>
<tr>
<td>Total revenues</td>
<td>569</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>117</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>452</td>
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<tr>
<td>Other cash items</td>
<td>(6)</td>
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<tr>
<td>Cash flow before taxes</td>
<td>446</td>
</tr>
<tr>
<td>Taxes</td>
<td>46</td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>16</td>
</tr>
<tr>
<td>Cash available for debt service</td>
<td>384</td>
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<tr>
<td>Debt service</td>
<td>122</td>
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<tr>
<td>DSCR</td>
<td>2.39</td>
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<tr>
<td>Minimum DSCR (project life)</td>
<td>2.08</td>
</tr>
<tr>
<td>Average DSCR (project life)</td>
<td>10.62</td>
</tr>
</tbody>
</table>

Source: Prospectus for Project Bonds.
On the basis of a sensitivity analysis the minimum DSCR is decreased under the following five scenarios.

- Reduced product prices result in a minimum DSCR of 1.63 – the price of Maya crude is reduced from US$12.23 in the base-case projection to US$9.25 per barrel in 1996 US dollars, and LPG, coke and sulphur prices are 50 per cent of base-case projections.
- Reduced oil production results in a minimum DSCR of 1.98 – assumed production from each well is lower than expected, requiring a 100 per cent increase in capital expenditures for drilling, completion and related oil-well servicing costs.
- Substandard upgrader performance results in a minimum DSCR of 1.84 – the upgrader onstream factor is reduced to 82 per cent, compared with the 92 per cent assumed in the base case.
- Increased operating costs result in a minimum DSCR of 1.98 – operating costs are assumed to be 25 per cent higher than in the base case.
- Currency overvaluation results in a minimum DSCR of 1.56 – the bolivar is assumed to become 20 per cent overvalued in 2001, to revert to purchasing power parity in 2002 and then to become overvalued by 20 per cent from 2005 through to the end of the project’s life.

**Risk analysis**

Project risks include:

- Petrozuata’s lack of operating history;
- technical and construction risk related to project completion;
- reliance on financial projections and underlying assumptions; and
- risks relating to oil reserves, technical issues, labour, marketing, oil prices, currency, laws and taxes, insurance, and the sovereign (the Bolivarian Republic of Venezuela).

Limitations on debtholder remedies and security interests are also considerations.

**Lack of operating history**

The company was incorporated in March 1996 and construction had not yet been completed at the time of the project financing. The company therefore did not have an operating history. As with any complex facility, the project is subject to many risks, including breakdown or failure of equipment or processes, failure to meet expected levels of output or efficiency, and problems in the application of drilling, production, pipeline and coking technologies.

**Project completion risk**

Construction could have been affected by any of the factors common to large greenfield industrial projects, including shortages or delays in delivery of equipment or materials, labour disputes, local or political opposition, adverse weather conditions, natural disasters, litigation and unforeseen engineering, design, environmental or geological problems.
Reliance on projections and underlying assumptions

In assessing the economic viability of the project the sponsors made critical assumptions concerning factors such as crude oil prices, the level of extra-heavy crude oil production, operating expenses, repair and maintenance costs, the market for syncrude and byproducts, tax rates, inflation, and capital costs. Actual circumstances may differ from these assumptions and affect the company’s ability to service its debt, as discussed above in the section ‘Sensitivity analysis’.

Oil reserve risk

Petrozuata’s project development plan called for a minimum production of 120,000 barrels per day of extra-heavy crude oil following the starting up of the upgrader. The company’s ability to meet this level of production throughout the expected 35-year project life depends on the sufficiency of reserves in the assigned drilling area. The offering circular for the bonds contains a report by an energy consulting firm, DeGolyer and MacNaughton of Dallas, Texas, estimating reserves in Petrozuata’s project area. The firm estimated that proven reserves would support production rates increasing from 30,000 to 120,000 barrels per day during the first year and continuing at 120,000 barrels per day for an additional 35 years. It noted, however, that these estimates were subject to inherent uncertainties, and could change as further information and production history become available.

Technical risk

Stone & Webster Overseas Consultants, Inc., was retained by the senior lenders to conduct an independent technical review of the project. In its report, contained in the offering circular, the firm found the basic design of the upstream facilities to be in accordance with good industry practice for the region and product, incorporating proven technology such as horizontal wells, artificial lift, diluent injection and multiphase pumping. Stone & Webster considered the construction schedule to be aggressive but achievable, and estimated that the in-field facilities to support the upgrader would be completed six to nine months ahead of time. The report noted that the upgrader would use commercially proven technologies, that the licensors selected for various units of the upgrader are experienced and capable, and that the design of the upgrader reflected considerable knowhow. It described coking as the most economically viable, commercially proven technology for upgrading the extra-heavy crude oil found in the region, and it described Conoco as a major licensor and arguably the leader in modern, state-of-the-art delayed coking technology. Finally, the report expressed the opinion that Petrozuata, as managing contractor and supervisor of three reputable international EPC subcontractors, should have the capability to meet the mechanical completion milestone, 31 July 2000, and the full completion target, 31 July 2001.

Labour risk

During construction Petrozuata employed 5,000 people directly and 2,000 by contract at various sites. Of the 5,500 construction personnel, 15 per cent were at the management and professional level, and 85 per cent were members of the two Venezuelan workers’ federations. Although labour conditions were agreed to in principle by both the workers’ federations,
industrial disputes had affected the Venezuelan oil industry in recent years. This risk was reduced after the project started operating, when the company’s staff was reduced to about 500 people. All are exempt (not paid for overtime) and many are seconded from the sponsors.

Marketing risk
The sponsors expected that a market for syncrude would develop within three to five years of project completion, equal to about four times the project’s production. Several other oil companies have refineries on the US Gulf Coast capable of refining sour heavy crude oils such as the company’s syncrude. If such a market does not develop, however, the project will be completely dependent on the Conoco PSA for sale of 104,000 barrels per day of the project’s syncrude production at a formula price.

Conoco’s and Maraven’s obligations under the Conoco PSA will be suspended during scheduled downtime at Conoco’s Lake Charles refinery and Maraven’s Cardón refinery, and for the duration of force majeure events.

Petrozuata has no contracts with unaffiliated third parties for the sale of syncrude. It does not have its own marketing staff, and therefore relies on Conoco and Maraven for selling early-production, extra-heavy crude oil and syncrude to third parties. Conoco and Maraven each has dedicated a member of its marketing staff to the sale of Petrozuata’s products.

Price risk
The prices received by the company for the syncrude under the Conoco PSA are based on published market prices of Maya crude oil, which may be volatile and may not move in parallel with other crude oil prices. If a third-party market develops the project sponsors expect to sell syncrude for more than the price paid by Conoco to Petrozuata under the Conoco PSA. In its market analysis Chem Systems estimated that the market price for blended syncrude would be US$1.30 per barrel above the price for Maya crude.

The Maya price used to evaluate the project was US$12.23 per barrel. The price required for a break-even, one-to-one DSCR is US$8.63 per barrel. Between 1982 and the time of the project financing in 1997, the price of Maya crude dipped below US$8.63 for only a single month, reaching a low of US$7.67, and the lowest 12-month running average price was US$10.64. Shortly afterwards world oil prices dropped considerably because of factors such as reduced demand from Asia, El Niño and the failure of the Organisation of Petroleum Exporting Countries (Opec) to restrict output. The price of Maya crude oil was US$8.50 in June 1998 and was predicted to fall even further in the short term. Prices were expected to move back towards market averages and, although it was difficult at that time to estimate when that would occur, it eventually did.

Currency risk
If inflation is higher in Venezuela than in the United States, but the Venezuelan bolivar depreciates proportionally, purchasing power parity will be maintained and the project will not be affected. However, if Venezuelan inflation is higher than US inflation and the bolivar is not allowed to depreciate accordingly, the overvalued bolivar will cause costs incurred in Venezuela to rise in US dollar terms. The risk of higher construction costs is
borne by the sponsors, while the risk of higher operating costs is borne by the project company and the lenders.

Legal and tax risk
The company is required to pay a percentage of crude oil revenues as royalties to the Venezuelan government. The general rate is 16.67 per cent, but the Ministry of Energy and Mines agreed to reduce the rate to 1 per cent for nine years. However, the ministry could unilaterally change the royalty at any time and substantially reduce Petrozuata’s net income. The Venezuelan government has the ability to change other laws and regulations that affect the project.

Limitations on senior debtholder remedies
Under the Common Security Agreement acceleration of senior debt, including the bonds, following an event of default requires the consent of a certain percentage of the senior lenders.

Limitations on security interests
There may be legal obstacles and practical difficulties that limit the ability of the senior lenders to perfect and enforce their security interests in the company’s assets under Venezuelan law. To enforce a security agreement a pledgee or mortgagee must initiate proceedings in a Venezuelan court that lead to a judicially sponsored auction of the pledged or mortgaged property. After a default has occurred the pledgor or mortgagor may consent to the transfer of property in lieu of such an auction, but there is no assurance that such consent would be granted. Also, because activity in the hydrocarbon sector is considered to be a matter of ‘public utility and social interest’, the attorney general must be notified when security interests are enforced and may object to a transfer of assets that is believed to interrupt the service performed with those assets.

Venezuela country risk
Among the important factors to be considered in evaluating Venezuelan country risk as it relates to Petrozuata are the amount of oil reserves, the importance of the oil industry to the Venezuelan economy, and whether or not the government has an incentive to interfere with PDVSA’s development programme and trade relationships.

Venezuela is the seventh largest oil-producing country in the world, with proven reserves of crude oil and natural gas equal to more than 70 years of production at current levels. However, over the years substantial export revenues from oil and natural gas have been matched by political pressures for social spending. Petrozuata is part of a programme to expand oil exports while also correcting imbalances in the Venezuelan economy.

Since the overthrow of a military dictatorship in 1958 Venezuela has consistently had democratically elected governments. The president is elected for a term of six years. National legislative power is vested in a unicameral National Assembly and judicial power is vested in the Supreme Court and various lower tribunals.

In recent years oil has represented 40 to 60 per cent of government revenue. The government of Venezuela has traditionally played a central role in the development of Venezuela’s hydrocarbon reserves and has exercised significant influence over other aspects
of the Venezuelan economy. However, in recent years it has recognised the need to develop non-hydrocarbon sectors of the economy and sell off enterprises that can be run more efficiently in private hands.

In the past the bolivar has been subject to foreign exchange controls, most recently between 1994 and 1996. Since controls were removed in 1996 the policy of the central bank has been to maintain the exchange rate within certain limits. The currency has not been allowed to depreciate at the rate of domestic inflation, and the overvalued bolivar has made Venezuelan goods and services increasingly expensive in US dollar terms. High interest rates resulting from the strength of the bolivar caused a recession 1999, despite rising oil prices.

During the period of exchange controls PDVSA was specifically exempted from the requirement to repatriate or channel export revenues through the central bank. It has been allowed to maintain offshore accounts, capped at US$600 million, and has had priority status in obtaining foreign currency reserves from the central bank.

The major question today regarding Venezuela and PDVSA relates to the administration of Hugo Chávez, who was elected in December 1998 and took office in February 1999. Chávez is not specifically opposed to business interests. He has even indicated receptiveness to the privatisation of some state-owned industries, although certainly not hydrocarbons, and has encouraged private participation in oil, gas, petrochemicals, electricity and telecommunications. However, some are sceptical because he has concentrated power in the hands of the presidency, the military and the new legislature, which is dominated by his supporters. There is concern about the government’s excessive reliance on PDVSA, which in 1997 paid two thirds of its revenues to the government in taxes and paid 70 per cent of its profits to the government in dividends. However, projects such as Petrozuata that result in petroleum exports have not been affected, except for the effect of the strong bolivar on domestic costs in US dollar terms.

Credit analysis

Credit ratings on Venezuela as of 1997

At the time of the project financing Venezuela had a foreign currency credit rating of ‘Ba2’ from Moody’s and ‘B+’ from Standard & Poor’s. Constraints cited by Standard & Poor’s included the heavy reliance of the public finances and the economy on volatile oil prices; high fixed public expenditures; the low credibility of the central bank; and the overvaluation of the bolivar. Strengths included moderate external debt, reasonable international reserves and favourable medium-term prospects for the energy industry.

Duff & Phelps, which assigned a ‘BB’ rating to Venezuela’s foreign currency obligations, explained in its analysis that the root of Venezuela’s economic problems was its fiscal deficit, which had been financed by the creation of new money over the years. The resulting inflationary pressures and overvalued currency in turn had aggravated the fiscal deficit. The agency noted that Chávez’s government, empowered by law to rule by decree for one year, could have leveraged its recent electoral success to implement fiscal reforms, but had focused mainly on political reform.

Credit ratings on Petrozuata as of 1997

At the time of issuance, in 1997, the Petrozuata bonds were rated ‘BBB+’ by Duff & Phelps, ‘Baa1’ by Moody’s, and ‘BBB-’ by Standard & Poor’s – the highest current credit ratings for

211
any project in Latin America, despite the lack of political risk insurance. As indicated by the subsection above, the project’s ratings from all three agencies exceeded those for the country at the time.

An analysis issued by Moody’s in June 1997 indicated that its ‘Baa1’ rating was based on:

- Petrozuata’s potential for robust economic returns;
- its projected cash-flow coverage of debt service;
- its vast committed oil reserves;
- its low production risk;
- the strong completion undertakings provided by the shareholders and guarantors; and
- the 35-year offtake contract with Conoco, which mitigated marketing risk on the upgraded syncrude.

The rating reflected the agency’s view that the government of Venezuela was unlikely to interfere in Petrozuata’s operations, or to interrupt its debt service in the event of a domestic financial crisis or a general government default. This view was based on the project’s strategic importance to PDVSA and Venezuela; the independence that governments had historically accorded to PDVSA; and the practical and legal impediments to the product or payments being diverted.

The agency also noted that the shareholders’ completion obligations were severally guaranteed by PDVSA, with a ‘Ba2’ rating, and DuPont, with an ‘Aa3’ rating. It also pointed out that, if Conoco’s ownership changed, DuPont had flexibility to transfer its guarantee to Conoco or a third party, as long as the new guarantor had a credit rating of at least ‘A2’ or Petrozuata’s then-current rating was confirmed. Referring to what it described as reasonable pricing and operating scenarios, Moody’s noted that the project was expected to generate debt-service coverage in excess of 2 times and a loan-life coverage of 2.5 times.

Limited effect of Conoco spin-off

As mentioned above, DuPont spun off Conoco in 1999. Because Conoco had remained a relatively autonomous and integrated oil company during the 19 years it was owned by DuPont, and had emerged from the spin-off with a high credit rating, the spin-off had virtually no effect on the Petrozuata project.

Indeed, despite the cost overruns and the political uncertainty, Conoco considered expanding the project because it continued to see significant potential in the Orinoco basin. Conoco merged with Phillips Petroleum in mid-2002 and the merged company resolved to maintain its interest in both Petrozuata and Phillips Petroleum’s Hamaca VEHOP.

Other events and credit ratings since the project financing

Major events since the project financing in 1997 have included the following.

- Project construction beat interim scheduling milestones and was completed ahead of time in December 2001.
- Crude oil production exceeded the target of 120,000 barrels per day.
• Project costs consistently ran over budget, primarily because the overvalued bolivar increased costs in US dollar terms, but also because of labour and oil-drilling costs being higher than expected.
• The credit rating of the project bonds continued to pierce the Venezuelan sovereign ceiling but was reduced steadily because of concerns about Venezuela’s creditworthiness and the government’s policies on the oil industry.
• Oil prices were volatile but remained well above the level required for debt service coverage.

In August 1998 Duff & Phelps downgraded its rating on Venezuela from ‘BB’ to ‘BB-’ because of the government’s mixed record that year in adjusting public finances and aggregate demand to reflect persistently low oil prices. Maya crude prices at the time were about US$9.00 per barrel. In November the agency downgraded Petrozuata from ‘BBB+’ to ‘BBB’ because of the low oil-price environment, which it believed would continue at least until the end of 1999, and the emerging political consensus in Venezuela, which seemed likely to lead to more government interference in the oil sector. However, Duff & Phelps expressed a view that oil prices were at cyclical lows and would increase in the medium term because of strong long-term demand fundamentals. The agency reported that Petrozuata was the only one of the four VEHOPs that had reached the production stage, having drawn its first oil in August. However, Petrozuata had announced revenues from early production that were lower than expected, as well as cost overruns of US$324 million, because of unfavourable exchange rates between the bolivar and the US dollar, and labour costs that were higher than expected. As a result the amount of additional equity required from the sponsors was estimated to be US$430 million.

In December 1998, following the election of Hugo Chávez to the presidency and a further decline in Maya crude prices to about US$8.00 per barrel, Duff & Phelps further downgraded Venezuela from ‘BB-’ to ‘B+’. The agency noted that the VEHOP projects’ ratings had exceeded the sovereign rating because of legal and structural features that helped mitigate sovereign risk issues, but it warned that further deterioration in the sovereign rating could affect the projects’ ratings.

In June 1999 Duff & Phelps commented that recent labour unrest and a temporary halt in construction of the VEHOPs would not have an immediate effect on its ratings for the projects. The labour unrest was caused by an increase in unemployment, which in turn was the result of the weakening of the economy and production cutbacks by Opec, to which Venezuela belongs.

In September 1999 Standard & Poor’s placed its ‘BB+’ rating on the Petrozuata bonds on CreditWatch with negative implications because of two concerns. First, the agency believed that recent decisions by Venezuela’s Constituent Assembly, which had been elected in July to compile a new constitution, could result in unfavourable changes in the laws and regulations governing the country’s oil and gas industry, notably:

• renegotiation or abrogation of key VEHOP contract provisions, such as the availability of international arbitration and exemption from Opec-related production restrictions that might be applied to other projects in Venezuela; and
• unfavourable adjustments to the industry’s tax and royalty regime.
Second, the agency was concerned about the government’s increasing political interference in the management of the industry.

Among the other risks Standard & Poor’s cited were:

- erosion of pro forma financial strength as a result of cost overruns caused by the overvalued bolivar and unexpectedly high labour costs;
- increasing cost overruns, then estimated at US$550 million, that would require additional equity contributions from the sponsors;
- unexpectedly low productivity, which would further increase production-related expenses;
- the government’s ability to force Petrozuata or its crude oil purchasers to redirect sales proceeds into accounts other than those defined in the project documents; and
- uncertainty as to senior lenders’ ability to enforce fixed-asset collateral security in Venezuela.

The agency noted the following points as mitigating these risks:

- the project’s high profile within PDVSA, and the continued strategic importance of the project to the other VEHOPs and Venezuela’s economy;
- improving project economics as a result of rising oil prices;
- the reduction of abandonment risk now that the project was 78 per cent complete;
- estimated hydrocarbon reserves of 35 years, well beyond debt maturity;
- the role of a New York trustee in collecting all revenues, and allocating funds for expenses, debt service and equity distributions; and
- low product diversion risk because syncrude could be used only in selected refineries.

In December 1999, however, Standard & Poor’s reduced its rating on PZ Finance bonds from ‘BB+’ to ‘BB’, following a downgrade of Venezuela’s long-term currency rating to ‘B’, reflecting concerns over the effects that the country’s new Constitution, endorsed by referendum that month, might have on structural reform and fiscal discipline, as well as the possible effect of the government’s fiscal regime on the VEHOPs.

In January 2000 Duff & Phelps downgraded PZ Finance to ‘BBB-’ because of sovereign risk concerns and weakening long-term credit fundamentals. By this time restrained supplies worldwide had reversed the downward trend in oil prices, bringing the price of Maya crude up to US$17 per barrel, which, in the agency’s opinion, was higher than long-term market fundamentals could support. Petrozuata’s cost overruns had increased the estimated cost of the project to US$3.41 billion, compared to an original estimate of US$2.67 billion, because of the overvaluation of the bolivar, and also because the project company had experienced greater ‘well decline’ rates than initially expected as a result of thinner, less continuous sands and unexpectedly high crude viscosity. Therefore the company was accelerating its drilling programme and now expected to drill 754 wells over the life of the project, up from 716 originally planned. All of the cost increases were borne by the sponsors. In revised financial projections for the project the Maya crude oil price required for debt service break-even was increased from US$8.63 to US$10.47 per barrel, while the original minimum and average DSCRs of 2.08 and 10.62 were revised to 1.56 and 10.09 respectively.

In February 2000 Moody’s reconfirmed its ‘Baa2’ rating for PZ Finance. The agency had placed the ratings of all four of the VEHOPs on review the previous September because the
Venezuelan government was increasing its control over PDVSA, could possibly change the legal framework for oil and gas investment in the country, and might limit PDVSA’s ability to meet its financial commitments to the VEHOPs. Moody’s noted that the Venezuelan political system was undergoing seismic changes at the same time as the country was facing enormous economic and fiscal pressures, which had been intensified by recent floods. PDVSA funded most of Venezuela’s foreign exchange, and would remain the government’s vehicle for funding social programmes and subsidising economic shortfalls.

In September 2000 Conoco and PDVSA began to discuss a possible expansion of their Petrozuata joint venture, perhaps even doubling its size. By this time production had reached its target level of 120,000 barrels per day. Rob McKee, Conoco’s Vice President for Exploration and Production, reported that Petrozuata had already contributed US$90 million to Conoco’s earnings that year.

In January 2001 construction was completed and syncrude production began. The technical success of the project, notwithstanding the cost overruns, and the highest oil prices in a decade, in the range of US$25–30 per barrel, encouraged Conoco and PDVSA to begin a formal feasibility study on doubling the size of the project.

In February 2002 Standard & Poor’s placed Venezuela’s ‘B’ long-term foreign currency rating, and consequently PZ Finance’s ‘BB’ rating as well, on CreditWatch with negative implications. Political polarisation had led to capital flight and high real interest rates, while hard-currency receipts were suffering the effects of declining oil prices and export volumes. The government had replaced the head of PDVSA four times and the agency saw increased risk of adverse government involvement in the VEHOPs.

In March 2002 Petrozuata announced that it had delivered to the lenders six required completion certificates in the areas of reserves, operations, physical facilities, insurance, legal issues and finance and had met all the performance requirements stipulated by the project financing. Accordingly Conoco and PDVSA were released from the US$1.4 billion in debt guarantees that they had provided and equally shared at the time of the financing, and Petrozuata assumed full responsibility for debt service.

Also in March Fitch Ratings commented that, on the basis of sensitivity analyses reflecting current operating assumptions, Petrozuata could cover its operating expenses and debt service payments as long as the price of Mexican Mayan crude was at least US$9.75 per barrel. The price had averaged US$17 in 2001 and was then US$20. Petrozuata was producing 124,000 barrels of heavy crude per day, exceeding its original target of 120,000 barrels. Fitch noted that the final US$3.4 billion project cost was funded by US$1.45 billion of senior secured debt, US$1.0 billion of sponsor equity contributions and close to US$1 billion of internally generated funds. The agency continued to rate the PZ Finance bonds ‘BBB-‘.

In April 2002 it was announced that President Chávez had been overthrown in a coup, but he reappeared a day later claiming never to have given up office. That month Moody’s downgraded PDVSA’s foreign currency debt rating from ‘Baa3’ to ‘Ba1’, downgraded PDVSA Finance’s long-term debt rating from ‘Baa1’ to ‘Baa2’, and placed negative outlooks on its rating for all the VEHOPs. It continued to rate Petrozuata ‘Baa2’. PDVSA’s employees were engaging in work slowdowns and other actions to protest against Chávez’s recent appointments and dismissals of numerous directors and managers of the company. The agency, responding to the continuing standoff between Chávez and the employees, saw no short-term solution to the conflict, and was concerned about disruptions in PDVSA’s oil production, refining and export flows. Moody’s noted that PDVSA was a sponsor of, and had
numerous supply relationships and operational links with the VEHOPs. For example, the hydrogen supply for the cokers depended on PDVSA’s gas supply, and PDVSA supplied electricity and water to the José complex.

During the autumn of 2002 social divisions hardened and tensions rose steadily between Chávez, broadly supported by low-income groups, and his pro-business opponents, who saw him as trying to take extraordinary powers and create a Cuban-style government. In early December a nationwide general strike against Chávez’s regime began to paralyse most of the country’s industry and commerce, including PDVSA and the all-important oil industry.

On 18 December, with the strike in its third week, Moody’s downgraded PDVSA’s local-currency issuer rating from ‘Baa1’ to ‘Ba1’, its foreign currency debt ratings from ‘Ba3’ to ‘Ba1’, the senior notes of PDV America from ‘Ba3’ to ‘Ba2’ and the long-term debt ratings of the four VEHOPs (Petrozuata, Cerro Negro, Sincor and Hamaca) from ‘Ba1’ to ‘Ba2’, noting that all the ratings were under review for further downgrade. The agency noted that, because most of PDVSA’s employees were apparently supporting the strike, virtually all of its crude oil, natural gas and refinery operations had shut down. It was not clear when the strike would be settled, given the opposition’s demand that Chávez resign.

During the first half of December 2002 Petrozuata took advantage of problems caused by the strike to catch up on maintenance, but was considered likely to shut down within the month. Cerro Negro and Sincor were still operating, but at both sites production of extra-heavy crude oil was below 50 per cent. The long-term viability and creditworthiness of the four VEHOPs remained intact, but the effects of the political situation would not be clear for some time.

On 10 January 2003, citing the polarisation of political and social interests in Venezuela, the extended duration of the general strike, and the cessation of most of PDVSA’s production and exports, Moody’s further downgraded PDVSA’s local-currency rating, its foreign-currency rating and PDV America’s senior-note rating, all to ‘B3’, while holding its ratings for the four VEHOPs at ‘Ba2’ pending review for downgrade.

The same day, after downgrading its foreign-currency rating for Venezuela from ‘B’ to ‘CCC+’, Fitch downgraded its senior secured debt ratings for the VEHOPs from ‘BB+’ to ‘B’. The agency noted that debt-holders for each of the projects relied solely on that project’s ability to meet scheduled debt-service obligations, with no guarantees from other parties. The downgradings reflected the inability of the projects to maintain their normal operations, which rely on critical raw-material inputs such as natural gas from PDVSA. As a result the projects had been unable to export and generate oil revenues for one month. If the situation did not change each project’s liquidity position to cover fixed operating expenses would soon deteriorate, although the projects had funds in their debt service reserve accounts to cover debt service obligations over the following several months. Fitch also commented that, even though Venezuela’s external debt service capacity compared favourably to that of similarly rated sovereigns, it could soon come under pressure because the strike and the loss of oil exports were reducing its revenues by US$30 million per day.

The strike ended on 3 February 2003. During the last week of February, after PDVSA resumed delivery of natural gas and hydrogen to the project, Petrozuata gradually restored operations at its crude upgrader facility to 100 per cent of capacity. By mid-March, Petrozuata had restored syncrude shipments and production to their pre-strike levels. However, in an article for the Spring 2003 issue of the Journal of Structured and Project Finance, Alejandro Bertuol, Senior Director; Caren Y. Chang, Associate Director; John W. Kunkle, Senior
Director; and Gregory J. Kabance, Senior Director of Fitch Ratings noted that the recent political instability in Venezuela had highlighted the VEHOPs’ exposure to PDVSA’s operating performance, particularly in the supply of critical raw material inputs required in the projects’ syncrude production and operation processes. A more extended production shutdown period, combined with the inability to generate export revenues, eventually would have jeopardised the VEHOPS’ liquidity positions and debt-service capacity. The political crisis, including sovereign interference in PDVSA’s operations and a significant cut in PDVSA’s highly trained staff, undermined Venezuela’s image as a reliable crude oil supplier, although Fitch believed that PDVSA would continue to be an important player in the global energy market. Nonetheless, the government’s inclination to interfere with PDVSA’s finances was likely to increase as the sovereign credit ratings deteriorated within the speculative-grade spectrum.

Lessons learned
An export project with strong fundamentals is required for a credit rating that pierces the sovereign ceiling. Further, common terms between commercial lenders and bondholders, as defined in the Common Security Agreement in the case of this project, can provide flexibility to adjust the respective amounts of bank and bond financing, depending on market conditions.

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1 This case study is based on the prospectus for the project bonds; ‘Petrolera Zuata, Petrozuata C.A.’; a Harvard Business School case study (9-299-012, 1998) prepared by Research Associate Matthew Mateo Millett under the supervision of Prof Benjamin C. Esty; interviews with Jonathan D. Bram and Wallace C. Henderson, Managing Directors of Credit Suisse First Boston Corporation, and Caren Chang of Fitch Ratings; rating agency analyses and press releases; and articles in the financial press.
