GEOPOLITICS OF ENERGY: LA

Prepared by
Jesús Reyes Heroles G.G.

for

UNITED STATES ASSOCIATION FOR ENERGY ECONOMICS

Subject to changes
I. GLOBAL ECONOMIC AND POLITICAL CONTEXT

OIL PRODUCTION, 1980-2017
(thousand b/d)

EXPORTS OF OIL, 1980-2017
(thousand b/d)

Source: OPEC statistics
II. BRAZIL: ECONOMIC AND POLITICAL CONTEXT

• Lula led the polls (35%) but will not be on the ballot
• Haddad is the candidate supported by Lula
  • Passionate follower of Lula
  • Less cerebral
  • Likely to induce macro economic imbalances
• Bolsonaro leads the conservative vote
  • Known for nationalist and ultra right views
• Congress will be Split...?
• Corruption, insecurity and health: key issues for the election
• Energy is not central in the electoral debate
• Latent fiscal crisis led by systematic primary deficits, due to less revenues from tax breaks during Rousseff era.
• Necessary reforms (pensions, reduce “tax expenditures”, ...) are highly unpopular and presidential candidates avoid them
<table>
<thead>
<tr>
<th>Candidate</th>
<th>Party</th>
<th>Aug 17-19</th>
<th>Sept 1-3</th>
<th>Sept 8-10</th>
<th>Sept 16-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jair Bolsonaro</td>
<td>PSL</td>
<td>20</td>
<td>22</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>Fernando Haddad</td>
<td>PT</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Ciro Gomes</td>
<td>PDT</td>
<td>9</td>
<td>12</td>
<td>11</td>
<td>11</td>
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<tr>
<td>Geraldo Alckmin</td>
<td>PSDB</td>
<td>7</td>
<td>9</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Mariana Silva</td>
<td>REDE</td>
<td>12</td>
<td>12</td>
<td>9</td>
<td>6</td>
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<tr>
<td>Álvaro Dias</td>
<td>PODE</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>João Amoedo</td>
<td>NOVO</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Henrique Meirelles</td>
<td>MDB</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other/ Don’t know / No answer</td>
<td></td>
<td>38</td>
<td>28</td>
<td>16</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: Ibope

- Very likely to have Bolsonaro and Haddad in second round
IMPLICATIONS ON THE OIL & GAS SECTOR

• Both Bolsonaro and Haddad are against privatization of Eletrobras

• Scheduled oil bidding rounds will continue:
  • September 28th (pre salt), two in November, and one in IQ 2019, two in IIIQ 2019
III. VENEZUELA: ECONOMIC AND POLITICAL CONTEXT

- Worsening political and economic conditions
- Crumbling economy
- Venezuela and PDVSA face growing payment problems to suppliers, creditors and partners
- More Venezuelans looking for humanitarian relief and opportunities elsewhere.
- High oil prices provide President Maduro resources to buy support from armed forces and other groups
- US sanctions? Full embargo or surgical (block sales of naphtha)?
Plan Maduro (august 17) aims at:

- Coping with the risk of social outbreak and violence sparked by hyperinflation and recession.
- Please China’s and Russia’s demands for more economic stability
- It does not address root causes of crisis

Modest foreign support:

- China: shareholder of four PDVSA joint ventures. Will probably provide small loans, and will demand more control over the JVs.
- Russia: Venezuela’s govt. and PDVSA debt to Russia: USD 7.6 Bn. Russia will probably continue to provide loans, and limited investment in Rosneft’s JV with PDVSA.

Measures to deal with military discontent:

- Belligerent agenda against Colombia keeps the military active
- Maduro demands 1 million new militia members be recruited before year’s end
IMPLICATIONS ON THE OIL & GAS SECTOR

• Continuous decline in oil production (3.3 mmb/d in 2006 to 2.2 mmb/d in 2017, and 1.0 mmb/d in 2019)

• This decline will not stop soon
  • Oil rigs, investments, ...

• “Anti corruption” cleansing in PDVSA continues.

• ConocoPhillips settlement
  • USD 2 Bn compensation for 2007 expropriation, regains access of PDVSA to assets in Dutch Caribbean.
  • Dozens of companies with arbitration claims against PDVSA are now likely to replicate ConocoPhillip’s approach

• In the short term, Venezuela received an injection of oxygen due to high oil prices (Iran diven?). It will not continue.

<table>
<thead>
<tr>
<th></th>
<th>Venezuela’s oil sector projections</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
</tr>
<tr>
<td>Oil price (dls/b)</td>
<td>46.7</td>
</tr>
<tr>
<td>Oil production (mmb/d)</td>
<td>2.2</td>
</tr>
<tr>
<td>Oil revenues (Billion dlls)</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Projections by Síntesis Financiera-Global Source
IMPLICATIONS ON THE OIL & GAS SECTOR

• Financial stress has prevented PDVSA from reinvesting to maintain production, and to import supplies for process and transport of oil.

• Risk of increasing blackouts and power rationing

• Deteriorating operational conditions for PDVSA

• Oil exports to the US decreased, an important source of cash revenue

VENEZUELA’S MAIN OIL EXPORTS
(Thousand barrels per day)

<table>
<thead>
<tr>
<th>Destination</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018f</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>579</td>
<td>505</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>USA</td>
<td>827</td>
<td>796</td>
<td>674</td>
<td>547</td>
</tr>
</tbody>
</table>

Source: Síntesis Financiera-Gobal Source
IV. MEXICO: ECONOMIC AND POLITICAL CONTEXT

• The future of Mexico’s energy sector closely depends on the development of Andrés Manuel Lopez Obrador’s (AMLO) government.

• Uncertainty is substantial.

• On July 2nd, AMLO won a vast political control:
  • Presidency: 53.2% of the vote
  • Majority in Congress:
    • Chamber of Deputies: 51%, or 62.6% with allies
    • Senate: 46%, or 54.6% with allies
  • Governorships: 5 out of 9

• Unprecedented political control.

• AMLO’s program leans left and his actions are frequently populists.

• His continuous dithering on issues and contradictions among his team generate uncertainty.

• Since elected, AMLO has both ratified and rectified some of his campaign proposals.
IMPLICATIONS ON THE OIL & GAS SECTOR

- AMLO has been bluntly opposed as to energy reform
- He has been the historic opponent to what he calls the “sell of the Nation’s natural resources”

- A brief summary of his key proposals is:
  - Increase oil production from 1.9 to 2.5 mmb/d in 2021
  - Reevaluate the “central role” of Pemex and CFE
  - “Rehabilitation” of six refineries
  - Reconfiguration of three refineries
  - New refinery (+300 thousand b/day) in Dos Bocas, Tabasco (to be built in 3 years)
  - Reduce gas flaring
  - Postpone Pemex’s farm outs
  - Suspend new bidding rounds for private companies

- Refineries’ utilization rate: 36% (July 2018)
**IMPLICATIONS ON THE OIL & GAS SECTOR**

- AMLO will inherit production from Peña Nieto’s bidding rounds

<table>
<thead>
<tr>
<th></th>
<th>Amoca-Miztón-Teocalli</th>
<th>Hockchi</th>
<th>Zama</th>
<th>Ichalkil-Pokoch</th>
<th>Ixachi</th>
<th>Total</th>
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<tbody>
<tr>
<td>Estimated investment (USD)</td>
<td>7.3 billion</td>
<td>2.5 billion</td>
<td>NA</td>
<td>2 billion</td>
<td>280 million</td>
<td>12.08 Billion</td>
</tr>
<tr>
<td>Estimated production in 2021-2022 (thousand bpd)</td>
<td>90</td>
<td>20</td>
<td>150</td>
<td>70-80</td>
<td>62.2</td>
<td>401-411</td>
</tr>
</tbody>
</table>

**Source:** EnergeA with information of SENER

- On electricity, to substitute natural gas for hydro?
- He appointed an experienced and savy politician (ex PRI) as CEO of CFE, known for his opposition to the initial opening of the energy sector (gas only) in 1992.
• Energy reform is under implementation. Key pending actions and regulations are:

**Oil & gas**
- Definition of tariffs for transport of hydrocarbons
- Deficiencies in key definitions such as social impact, environmental impact, indigenous rights
- Modify directives for gas transport and storage
- Gas and oil products:
  - Open access for distribution
  - Tariffs, prices and compensations
  - Crossed participation and separation of activities
  - Guidelines on regulatory accounting
- Oil products:
  - Asymmetric regulation for first hand sales
  - LPG transport different from pipes
  - ASA: tariffs, terms and conditions for storage

**Electricity**
- Open access for transmission and distribution
- Electricity auctions (CENACE)
- Registration of qualified users
- Second phase of the Wholesale Market
- Technical specifications for interconnection of power plants and connection to load centers
- Methodology to determine tariffs for last resort suppliers and basic suppliers
- Regulatory accounting for transmission, distribution, supply, and operation tariffs of CENACE
I. Global economic and political context

II. Brazil
   • Political and economic context
   • Implications for the oil & gas industry

III. Venezuela
   • Political and economic context
   • Implications for the oil & gas industry

IV. Mexico
   • Political and economic context
   • Implications for the oil industry
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• US sanctions? Full embargo or surgical (block sales of napththa)?
• Plan Maduro (August 17):
  • New currency: sovereign bolívar (5 zeros taken off)
  • Increase minimum wage to 34 times its previous level
  • Anchoring sovereign bolívar to Petro (virtual currency linked to Venezuela’s oil reserves)
    • Few details are known about how Petro works
    • Petro has no credibility
    • US has banned its citizens from trading in it
  • VAT from 12% to 16%
  • Less fuel subsidies for those without “Fatherland ID”
  • Zero fiscal deficit
    • No details on how
OIL PRICES: MEXICO, VENEZUELA, WTI, 1990-2018
(USD/barrel)

Source: ...
### Global GDP

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Global</td>
<td>3.5</td>
<td>3.9</td>
<td>3.8</td>
<td>3.1</td>
<td>3.5</td>
<td>3.3</td>
</tr>
<tr>
<td>USA</td>
<td>2.2</td>
<td>2.9</td>
<td>1.8</td>
<td>1.3</td>
<td>2.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>-0.5</td>
<td>2.3</td>
<td>2.3</td>
<td>6.7</td>
<td>3.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Venezuela</td>
<td>-7.8</td>
<td>-15.0</td>
<td>-2.5</td>
<td>310.9</td>
<td>13,864.6</td>
<td>12,874.6</td>
</tr>
<tr>
<td>Mexico</td>
<td>2.5</td>
<td><strong>1.9</strong></td>
<td>-2.3</td>
<td>2.9</td>
<td>3.9</td>
<td>4.4 – <strong>4.7</strong></td>
</tr>
</tbody>
</table>

**Source:** IMF Economic Outlook, April 2018, and GEA estimates. *GEA projections*
OIL & GAS RIG COUNT, 2006-2018

Source: Baker & Hughes
FOREWORD

OIL PRODUCTION, SELECTED COUNTRIES/REGIONS, 2000-2017

(mmb/d)

Source: BP Statistical Review of World Energy