Global Energy Outlook
Global energy trends

Growth in Natural Gas and Renewables

- Energy demand: 1% CAGR
- Global energy demand growth by fuel

Latin America and other Non OECD countries drive markets

- Non-OECD leads economic expansion
- GDP growth
  - Year-over-year average percent (%)

Source: Shell interpretation of Wood Mackenzie Q4 2017 data
Demand projections by sector

Industry and construction will drive demand

End-use sector

Global energy demand varies by sector
Primary energy – quadrillion BTUs

LNG and renewables shares increase by sector
Latin America in the global context
A slow but steady recovery
By 2021, the region will regain the $1trn USD GDP lost in 2015/16

Note – all data is based upon CY (calendar year).
Sources: BMI, World Bank, UN, IMF.
LAC is rebounding but will underperform other EMs

Modest commodity prices, rising Fed rate, small productivity gains all weigh on LatAm’s future growth

Sources: IMF

GDP real growth

Sources: IMF
Commodities drive the F/X of LatAm economies
Energy is making a comeback but trails industrial metals

Advantaged
Perú, Chile, Brazil
Energy importers – Central America, Caribbean
- Latin Americans keep $4trn in savings off-shore, leaving the region chronically short of capital. LAC economies rely on foreign debt to fuel growth and service that debt primarily with surplus commodity exports.
- Bra, Mex, Arg, Chi, Col, Per, Ven currencies are 97% correlated to the movement of their respective top three commodity exports.

Disadvantaged
Venezuela, Ecuador, Colombia, Trinidad & Tobago

Source – The Economist
Data is updated through May 2018
Saudi-America

Expanded US oil production is more threatening to Latin America than any Trump policy

Source – EIU

Note: Though data is from 2016, the underlying trends still hold true as of May 2018
The 2nd longest bull-run in US history will slow in 2019

However, the dollar, employment and wage growth will remain strong, buoying closely linked LAC economies

The U.S. labor pool is shrinking – immigrants are needed

Full employment is driving up wages

The dollar will further strengthen

The Fed plans to raise rates steadily (2% inflation target)

**U.S. GDP and Fed Rate Forecasts (2017-2022)**

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP Percentage</th>
<th>Interest Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2.4%</td>
<td>0.3%</td>
</tr>
<tr>
<td>2018</td>
<td>3.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>2019</td>
<td>2.6%</td>
<td>0.5%</td>
</tr>
<tr>
<td>2020</td>
<td>2.2%</td>
<td>0.6%</td>
</tr>
<tr>
<td>2021</td>
<td>1.9%</td>
<td>0.7%</td>
</tr>
<tr>
<td>2022</td>
<td>1.7%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

**Business Cycle Co-Movement with U.S. Economy**

Sources: IMF, Kiplinger report
NAFTA 2.0 (USMCA) is finally negotiated

Key negotiated points

• Auto sector rules of origin (inside NAFTA) raised from 62.5% to 75%
• >40% of vehicle made using labor rates
  >$16/hr
• Increased protection of IP rights (Mexico)
• Partial liberalization of Canadian dairy market
• Chapter 19 dispute panel maintained
• 16 year time frame with review after six years

Mexico In-bound Foreign direct investment (US$ bn)
Taper tantrum 2.0
Tightening Fed policy will continue to punish vulnerable emerging market currencies

LatAm major currencies vs USD (up to Q4 2018)
China – LAC engagement 2.0

- Chinese bilateral loans to LatAm since 2005 are > $150bn, ranked 1st
- China – LAC trade surpassed $300bn in 2017, ranked 2nd
- China was the largest source of M&A investment in 2017 (42%). FDI stock in LAC is >$170bn

1. Secure long-term natural resources
2. Employ Chinese construction companies via infrastructure projects
3. Sell higher-value Chinese goods
4. Satisfy Chinese tourists

Source: Brookings Institute, AMI analysis
Long term trends inside LatAm
Latin America is the fastest aging region in the world
Latin American demographics will change rapidly over the next thirty years

Ages 2020-50 growth

<table>
<thead>
<tr>
<th>Ages</th>
<th>2020-50 growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>-21%</td>
</tr>
<tr>
<td>10-19</td>
<td>-17%</td>
</tr>
<tr>
<td>20-29</td>
<td>-8%</td>
</tr>
<tr>
<td>30-39</td>
<td>10%</td>
</tr>
<tr>
<td>40-49</td>
<td>37%</td>
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<tr>
<td>50-59</td>
<td>84%</td>
</tr>
<tr>
<td>60-69</td>
<td>164%</td>
</tr>
<tr>
<td>&gt;70</td>
<td>291%</td>
</tr>
</tbody>
</table>

Source - ECLAC
Consumers, employees, voters increasingly empowered

The instinct to conform declines while individualism and materialism ascend

<table>
<thead>
<tr>
<th>1990 household</th>
<th>2020 household</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 5.3 people per HH</td>
<td>• 4.1 people per HH</td>
</tr>
<tr>
<td>• Ages 30-40 fastest growing</td>
<td>• Age 60+ fastest growing</td>
</tr>
<tr>
<td>• 3% car ownership</td>
<td>• 21% car ownership</td>
</tr>
<tr>
<td>• &lt;3% have credit cards</td>
<td>• &gt;25% have credit cards</td>
</tr>
<tr>
<td>• Shrinking middle class</td>
<td>• Expanding middle class</td>
</tr>
<tr>
<td>• Economic crisis</td>
<td>• Social crisis</td>
</tr>
<tr>
<td>• Conform to tradition</td>
<td>• Seek pleasure</td>
</tr>
<tr>
<td>• Fitting in (collective)</td>
<td>• Gaining power (individual)</td>
</tr>
<tr>
<td>• Undemanding consumers</td>
<td>• Very demanding customer</td>
</tr>
<tr>
<td>• Cost conscious</td>
<td>• Value &amp; convenience driven</td>
</tr>
<tr>
<td>• Traditional media, Predictable opinions</td>
<td>• Social media, unpredictable</td>
</tr>
</tbody>
</table>
Latin America Outlook
Competitiveness Matters
The commodity boom is over. Countries compete for FDI by reforming structural inefficiencies

Countries that took on painful reforms in the past fare better in today’s commodity driven downturn

- Pacific Alliance countries (Mex, Col, Chi, Per) have stood out as reformers over the last decade. By contrast, reforms backtracked in Venezuela, Brazil and Argentina (until recently).
- Chile’s private sector held back FDI under Bachelet. Q1 2018 FDI (under Piñera) was larger than all of 2017.
- The removal of PPK and apparent peace between President Vizcarra and Keiko Fujimori will lead to greater investment flows.
- The election of Bolsonaro in Brazil will provide a short term financial boost but improved competitiveness requires radical reforms.
- Reversing over 15 years of damaging policies in Venezuela will take years to accomplish, even if political transition is smooth.
- Pacific Alliance (and Argentina) will capture over 50% of total FDI entering the region in 2018.

Sources – EIU, IMF, BMI, World Bank
Thrown out
Voters are rejecting the status quo, not shifting right or left

Brazilian Pres. Candidate
Jair Bolsonaro
✔

Mexican Pres. Candidate
AMLO
✔

Brazilian Ex-President
Dilma Rousseff
✘

Brazilian President
Michel Temer
✘

Peruvian President
Kuczynski
✘

Peru Opposition leader
Keiko Fujimori
✘

Mexican President Peña
Nieto
✘

Chilean President Bachelet
✘
Did Mexico dodge a bullet?
AMLO has managed to build a positive relationship with Trump, helping create an alternate NAFTA agreement.

**GDP (US$ bn) and Growth**

- 2014: 2.3%
- 2015: 2.6%
- 2016: 2.3%
- 2017e: 2.0%
- 2018f: 2.1%
- 2019f: 2.2%
- 2020f: 3.0%

**Upside & downside risks**

- ✓ AMLO gov’t more centrist than anticipated.
- ✓ NAFTA put back on track after US mid-terms
- ☐ US taper-tantrum accelerates
- ☐ Oil prices remain soft
- ☐ Lack of fiscal discipline punishes the Peso

**Foreign direct investment (US$ bn)**

Some data estimated since many of the official sources in the region are still finalizing last year’s data.

Sources: BMI, additional sources listed in final slide.
President Bolsonaro will aid recovery, for a while
Households and the corporate sector have paid down debt. Will the government get its act together?

GDP (US$ bn) and Growth

Upside & downside risks

- Temer reforms remain intact with the Bolsonaro administration
- Further reforms achieved with next government
- Brazilian currency strengthens
- Corporate sector raises equity financing
- Taper tantrum 2.0 continues to punish Real
- Lava Jato case continues to disrupt Brazil’s political process
- Mass demonstrations from opposition
52% YTD depreciation lessens support for Macri

With few foreign reserves, Argentina was targeted by financial traders and forced to petition a line from the IMF.

GDP (US$ bn) and Growth

Upside & downside risks

- IMF strategy settles markets, currency strengthens
- Investors continue with plans
- Macri hangs on and is re-elected in 2019
- Unions negotiate hard, pushing up inflation
- Domestic investment stifled by high interest rates
- Peronists win the election and turn the clock back on reforms

Inflation and Interest rates

Some data estimated since many of the official sources in the region are still finalizing last year’s data.

Sources: BMI, additional sources listed in final slide.
Ivan Duque’s election should aid Colombia’s recovery

Colombia’s economic recovery stalled due to election uncertainty. Duque’s pro-investment policies should entice more investment.

Upside & downside risks

- Duque administration will continue much needed reforms and loosen regulations
- Investor appetite for infrastructure projects should return

- Renegotiating FARC peace accord ignites violence from FARC dissidents and frightens investors (e.g. mining sector)
- Venezuelan immigration grows into refugee crisis

Some data estimated since many of the official sources in the region are still finalizing last year’s data.

Sources: BMI, additional sources listed in final slide.
**Guyana: The country that wasn’t ready to win the lottery**

More than 4 billion barrels of oil equivalent could be recovered from the Stabroek block but the country’s institutions are weak and the country is underdeveloped

<table>
<thead>
<tr>
<th>01</th>
<th>Exploitation of record oil reserve could be hampered by underdevelopment and conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Medal] Record oil discoveries could turn Guyana into a “Caribbean Qatar”. Exxon, Tullow, Repsol lead the pack</td>
<td></td>
</tr>
<tr>
<td>![Hand] Human capital is very scarce. Corruption is endemic and the regulatory capacity very limited</td>
<td></td>
</tr>
<tr>
<td>![Clock] Presidential elections are around the corner in a deeply ethnically divided nation.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>02</th>
<th>The understanding of local dynamics and political risk is crucial</th>
</tr>
</thead>
<tbody>
<tr>
<td>★</td>
<td>Guyana is politically divided in two antagonistic ethnic groups (Indo-Caribbean and Afro-Caribbean). The road up to the 2020 elections will lead to rising conflicts</td>
</tr>
<tr>
<td>★</td>
<td>The development of the mining sector already demonstrated the limited ability of Guyana to house large international companies. The regulatory capacity is weak. Corruption plagues the country.</td>
</tr>
<tr>
<td>★</td>
<td>Basic accountability and transparency standards are still lacking. The presence of a strong investigative journalist tradition (Kaieteur News) presents reputational risks for international investors.</td>
</tr>
<tr>
<td>★</td>
<td>Guyana’s neighbors include Venezuela which defends territorial claims in Esequibo, as well as Suriname and French Guiana. Both could hold similar reserves but each is characterized by drastically different set of political, economic and social variables.</td>
</tr>
</tbody>
</table>
Renewable Energy Outlook 2019

Strong investments in renewable energy will continue in 2019 thanks to solid PPP frameworks

**Engie** invested $111 million in a **130 MW PV facility in Sonora**. 100% of the generated power to the steel producer, Gerdau Corsa.

**Balam Fund** completed a **35 MW solar project by in the state of Durango** to sell electricity to leading pharmaceutical chain, Farmacias del Ahorro. More importantly, the pipeline of future projects is solid with Mexican multinational bakery product manufacturing company, **Grupo Bimbo** announcing a plan to cover its energy consumption exclusively with renewable energies.

The new Duque Administration launched an **auction for approximately 1.5 GW of renewable energy capacity** in late August.

National company **Celsa** is setting the example with a rooftop PV project for **Bogotá’s international airport** El Dorado and a **80 MW(AC) PV power plant project** in the municipality of Los Santos.

**Engie** is also the main actor in Chile with a **122.4 MW PV power plant in the region of Antofagasta**. The $101 million investment aims at commercial production by December 2019.

Future investments will also be strongly supported by the commitment from **major mining companies** to power their operations with renewable energy. Last April, Codelco, Altonorte SA, Compañía Minera Lomas Bayas and Freeport McMoRan all announced agreements with Engie.

Energy transition policies but also **strong public financing support** from the National Development Bank (BNDES) have turned Brazil’s **14GW wind** industry into the **eighth-largest in the world**.

Bolsonaro calls for deregulation and criticisms against BNDES have caused concerns within the industry. However, Paulo Guedes’ policies will favor the **development of private companies in the energy sector**, both for power generation and distribution.

The outlier remains Argentina who suspended all auction rounds for large-scale wind and solar projects in August because of financing concerns. Nevertheless, the first three rounds of the RenovAr auctions had led to the approval of 1.7 GW of solar projects.
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Remi taught at several universities including the University of Miami, HEC (Paris) and Qatar University. In addition, he is a regular energy analyst for Al Jazeera, France 24, CGTN and TRT. Remi is the author of several books and publications, including “Energy Security & Sustainable Development in the Western Hemisphere” (Rowman & Littlefield, 2017)
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4. Our holistic approach to market intelligence is unique. We combine market research, competitive intelligence, political analysis and economic forecasting in our studies.

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