RECENT SOCIAL UPHEAVALS AGAINST FUEL PRICE INCREASES: CASE STUDIES AND KEY FACTORS

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The views expressed here do not represent an official statement of ANP, but the understanding of the authors.
Topics

- Context
- Methods
- Key Factors
- Case Studies
  - France
  - Brazil
  - Mexico
  - Chile
  - India
- Closing remarks
spikes in motor fuel prices

social upheavals

hindrance to proceed with energy policies

traditional regulatory cost-benefit analysis

evolutionary methodology

Jan17 - Mexico

May18 - Brazil

Sep18 - India

Oct18 - France

Oct19 - Chile
Context

Brent Spot Prices FOB (nominal US$/bbl)

Source: EIA
Methods

- Case studies (France, Brazil, Mexico, Chile, and India)
- Brief overview of the countries energy policies
- Literature review
- Theoretical basis:
  - evolutionary methodology - Witt (1992) and Nelson and Winter (1982);
  - behavioural economics - Sunstein (2005);
  - macroeconomic concepts;
  - and microeconomics indicators.
## Key Factors

<table>
<thead>
<tr>
<th></th>
<th>France</th>
<th>Brazil</th>
<th>Mexico</th>
<th>Chile</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population (2017)</strong></td>
<td>64,842,509</td>
<td>207,833,823</td>
<td>124,777,324</td>
<td>18,470,439</td>
<td>1,338,676,785</td>
</tr>
<tr>
<td><strong>GDP, million, current US$ (2017)</strong></td>
<td>2,582,501</td>
<td>2,053,595</td>
<td>1,150,888</td>
<td>277,076</td>
<td>2,650,725</td>
</tr>
<tr>
<td><strong>GDP per capita (2017)</strong></td>
<td>39,827</td>
<td>9,881</td>
<td>9,224</td>
<td>15,001</td>
<td>1,960</td>
</tr>
<tr>
<td><strong>Passengers vehicles fleet (2015)</strong></td>
<td>32,000,000</td>
<td>35,471,423</td>
<td>26,937,356</td>
<td>3,125,047</td>
<td>22,468,000</td>
</tr>
<tr>
<td><strong>Commercial vehicles fleet (2015)</strong></td>
<td>6,652,000</td>
<td>7,721,901</td>
<td>10,416,238</td>
<td>1,319,894</td>
<td>6,392,000</td>
</tr>
<tr>
<td><strong>Carbon intensity of road transport energy consumption, gCO2/MJ</strong></td>
<td>67,5</td>
<td>56,3</td>
<td>70,3</td>
<td>71,6</td>
<td>71,7</td>
</tr>
<tr>
<td><strong>Gasoline Average Price, current US$ (1Q 2017)</strong></td>
<td>1,49</td>
<td>1,17</td>
<td>0,96</td>
<td>1,14</td>
<td>1,14</td>
</tr>
<tr>
<td><strong>Gasoline Average Price, current US$ (2Q 2018)</strong></td>
<td>1,79</td>
<td>1,20</td>
<td>1,02</td>
<td>1,31</td>
<td>1,15</td>
</tr>
<tr>
<td><strong>Gasoline Average Price, current US$ (3Q 2018)</strong></td>
<td>1,82</td>
<td>1,13</td>
<td>1,09</td>
<td>1,31</td>
<td>1,18</td>
</tr>
<tr>
<td><strong>Gasoline Average Price, current US$ (3Q 2019)</strong></td>
<td>1,67</td>
<td>1,04</td>
<td>1,07</td>
<td>1,16</td>
<td>1,08</td>
</tr>
<tr>
<td><strong>Affordability (1Q 2017)</strong></td>
<td>1,43%</td>
<td>4,23%</td>
<td>4,03%</td>
<td>2,98%</td>
<td>21,29%</td>
</tr>
<tr>
<td><strong>Affordability (2Q 2018)</strong></td>
<td>1,55%</td>
<td>5,02%</td>
<td>4,04%</td>
<td>2,94%</td>
<td>20,48%</td>
</tr>
<tr>
<td><strong>Affordability (3Q 2018)</strong></td>
<td>1,56%</td>
<td>5,14%</td>
<td>4,01%</td>
<td>3,14%</td>
<td>22,24%</td>
</tr>
<tr>
<td><strong>Affordability (3Q 2019)</strong></td>
<td>1,50%</td>
<td>4,57%</td>
<td>3,86%</td>
<td>2,86%</td>
<td>17,78%</td>
</tr>
<tr>
<td><strong>Income Spent (1Q 2017)</strong></td>
<td>0,53%</td>
<td>2,54%</td>
<td>3,86%</td>
<td>1,89%</td>
<td>1,13%</td>
</tr>
<tr>
<td><strong>Income Spent (2Q 2018)</strong></td>
<td>0,58%</td>
<td>2,80%</td>
<td>3,54%</td>
<td>1,91%</td>
<td>1,27%</td>
</tr>
<tr>
<td><strong>Income Spent (3Q 2018)</strong></td>
<td>0,59%</td>
<td>2,86%</td>
<td>3,91%</td>
<td>2,04%</td>
<td>1,37%</td>
</tr>
<tr>
<td><strong>Income Spent (3Q 2019)</strong></td>
<td>0,57%</td>
<td>2,62%</td>
<td>3,97%</td>
<td>1,91%</td>
<td>1,16%</td>
</tr>
<tr>
<td><strong>Gasoline Consumption per year per driver, liters (1Q 2017)</strong></td>
<td>136,2</td>
<td>219,6</td>
<td>350,4</td>
<td>232,2</td>
<td>19,4</td>
</tr>
<tr>
<td><strong>Last year of fixed gasoline retail prices</strong></td>
<td>1981</td>
<td>2001</td>
<td>2016</td>
<td>1578</td>
<td>2010</td>
</tr>
</tbody>
</table>
Case Study: France

➢ TICPE - tax on the consumption of fossil fuels.

➢ After 2014, it incorporated an additional surcharge for carbon fuels.

➢ October 2018, the yellow vests (gilets jeunes) movement.

<table>
<thead>
<tr>
<th>Year</th>
<th>Diesel (c€/l)</th>
<th>Gasoline (c€/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>42.84</td>
<td>60.69</td>
</tr>
<tr>
<td>2015</td>
<td>46.82</td>
<td>62.41</td>
</tr>
<tr>
<td>2016</td>
<td>49.81</td>
<td>64.12</td>
</tr>
<tr>
<td>2017</td>
<td>53.07</td>
<td>65.07</td>
</tr>
<tr>
<td>2018</td>
<td>59.4</td>
<td>68.29</td>
</tr>
<tr>
<td>2019</td>
<td>59.4</td>
<td>68.29</td>
</tr>
<tr>
<td>2020</td>
<td>59.4</td>
<td>68.29</td>
</tr>
<tr>
<td>2021</td>
<td>59.4</td>
<td>68.29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>€/tCO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>7</td>
</tr>
<tr>
<td>2015</td>
<td>14</td>
</tr>
<tr>
<td>2016</td>
<td>22</td>
</tr>
<tr>
<td>2017</td>
<td>30.5</td>
</tr>
<tr>
<td>2018</td>
<td>44.6</td>
</tr>
</tbody>
</table>
Case Study: France

➢ Biotteau and Rioux (2019):

➢ Major impact on purchasing power came from the increasing international oil prices and not the growing TICPE;

➢ Negative impact was mainly absorbed by households located in rural and small cities, given its higher dependence on fossil fuels for transport and heating;

➢ The most significant effect of the decreasing household purchasing power is mainly absorbed by the poorest households.
Case Study: Brazil

1953
- State Monopoly
- Petrobras

1997
- End of legal monopoly
- ANP (regulator) creation

2002
- Free prices

2011
- Implicit price containment through dominant NOC (Petrobras)
- Fall in oil prices
- Domestic fuel prices kept high
- Stronger imports by private companies

2014
- Petrobras adopted PPI
- Petrobras intensifies readjustments
- Federal government raises taxes

2016

2017

2018
- Increase in oil and fuel prices
- Brazilian currency depreciation
- Major strike by truck drivers
- Diesel subsidy

2019
- Regulator improves price transparency at refineries/importers.

- Petrobras
- ANP

- GREVA
Case Study: Mexico

1938
• Regulated fuel retail prices
• Gasoline and diesel sold under the Pemex brand.

2015
• Monthly national maximum prices.

Dec/2016
• Start of the deregulation of gasoline prices.

2017
• Daily maximum prices for 83 different regions.

Jan/2017
• Gasoline and diesel prices spike.
• Nationwide turmoil.

Mar/2017
• Price controls for retail gasoline and diesel began to be removed.

Nov/2017
• Prices were officially liberalized nationwide.
• Prices transparency through smartphone app.

Dec/2018
• Regulation on Pemex wholesale prices.
• Excise tax on gasoline varies weekly, absorbing changes.

Dec/2019
• Regulator ends the rule, but Pemex keeps following pricing guidelines.

May/2021
• Reform of the hydrocarbons law, removing the legal basis for requirements over Pemex.
Case Study: Chile

Until 1973
- Chilean oil industry was heavily regulated.

1975
- Monopoly of refining revoked.

1978 - 1982
- Imports of oil and its products were liberalized
- Free entry in wholesale and retail of petroleum products.

1978
- Oil Price Stabilization Fund (FEPP).

Jul/2000
- First changes in FEPP
- FEPP was replaced by the Fund for the Stabilization of Oil Products Prices (FEPCO).

2005
- FEPCO was replaced by the Taxpayer Protection System against Variations in International Fuel Prices (SIPCO).

2010
- Fuel price disclosure policy.

Mar/2012
- Improved price transparency induced higher margins and less price dispersion.

2012 – 2014
- Fuel Price Stabilization Mechanism (MEPCO) was implemented.

Aug/2014
- Limits the weekly variation in wholesale gasoline prices.

Jul/2016
- Chilean Competition Law was amended, implementing tougher punishments for collusive behavior.

Oct/2021
- Increase in subway ticket price.

Widespread protests.
Case Study: India

2008
- Petroleum subsidies reached 3.4% of the India GDP.
- India imports over than 70% of all its oil requirements.
- Indian government planned a deregulation process.

Jun/2010
- Subsidies for gasoline were completely removed.

Sep/2012
- Deregulation of diesel prices started.
- The main consumption: kerosene and diesel.

2014
- The reduction in diesel subsidies accelerated.
- Opportunity created by the falling oil prices.

2018
- Petroleum subsidies fell to 8.5% of whole expenses with subsidy.
- Liberalization of diesel was related to an increase on subsidies to LPG.
- International oil’s prices changed direction, from falling to an increase.
- India observed increasing prices in gasoline stations for the first time.
- Nationwide strike.
**Closing remarks**

<table>
<thead>
<tr>
<th>The increasing of motor fuel prices in these years neglected the redistributive effects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock-in fuel consumption in hydrocarbons.</td>
</tr>
<tr>
<td>Net effects of phasing-out subsidies or taxing carbon have been demonstrating to be regressive.</td>
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<tr>
<td>Regarding the risks perception by society, sometimes social amplification may occur, being a result of the availability heuristic.</td>
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<tr>
<td>Developing countries often have volatile currencies, which jointly with oil dependency, generates a perverse exposure to oil prices.</td>
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<tr>
<td>Effective price smoothing mechanisms are difficult to maintain over a long period of time, due to impacts on fiscal balance.</td>
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<tr>
<td>State intervention on prices may also drive off private investments in domestic petroleum industry, generating a vicious circle.</td>
</tr>
<tr>
<td>Developed countries also observed social reaction during periods of rising fuel prices, because of disparities in income.</td>
</tr>
</tbody>
</table>
Thank you!

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