Gasoline demand analysis in Mexico before the energetic reform

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Motivation
- Energetic reform 2013.
- Downstream sector: fossil fuel demand.

Research objective
- Elasticities for price, personal income and registered vehicles vs. fuel demand.
- Regular vs. Premium historical substitution.
- Financial impact for maintaining a fix fuel price.

Methodology
- Data (Q): January 1996 to December 2015.
- For elasticities: Ordinary Least Squares (OLS), Vector Autoregressive Model (VAR) and Error Correction Model (ECM).
- For historical substitution: exploratory data analysis.

Results
- Elasticities:
<table>
<thead>
<tr>
<th>Elasticities</th>
<th>PEMEX Magna</th>
<th>PEMEX Premium</th>
<th>PEMEX Diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>-0.134</td>
<td>-1.808</td>
<td>-0.581</td>
</tr>
<tr>
<td>Income per capita</td>
<td>0.917</td>
<td>2.846</td>
<td>0.299</td>
</tr>
<tr>
<td>Number of cars</td>
<td>0.879</td>
<td>0.046</td>
<td>-0.728</td>
</tr>
</tbody>
</table>

- Substitution:

Conclusions
- The demand of gasoline is negatively influenced by the price, is affected positively by the income and the number of cars should have a value near to one.
- From January 2013 to July 2015 an increase in the Regular price of 19% led people to demand Premium type in 38% more.
- In a twenty-year-analysis the Mexican government had incurred in considerable losses of maintaining a fixed price of petrol.
- Reform: opportunity to focus public budget in strategic activities.

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