Gasoline demand analysis in Mexico before the energetic reform

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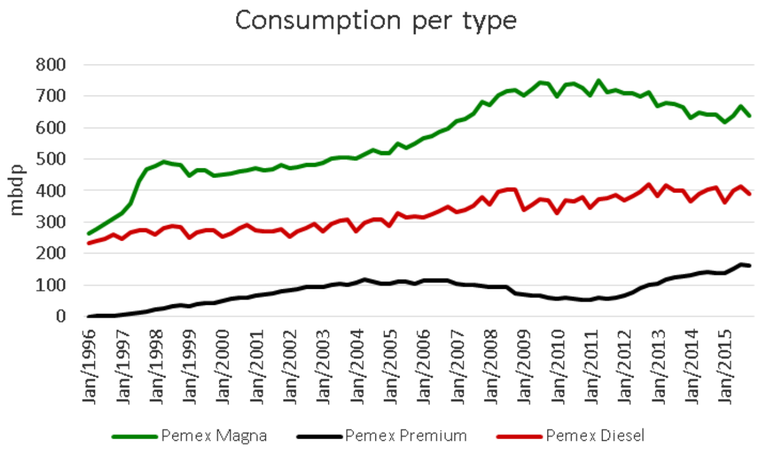
Motivation

- Energetic reform 2013.
- Downstream sector: fossil fuel demand.
- Transition: monopoly to open market (2018).



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.

- Financial impact:

National demand – Domestic Production = Importation

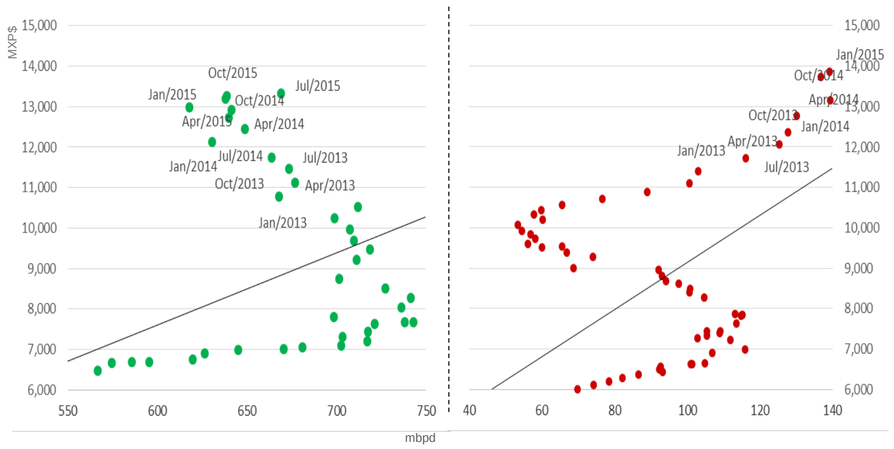
Commercial balance = Importation (Domestic Price – International price)

Results

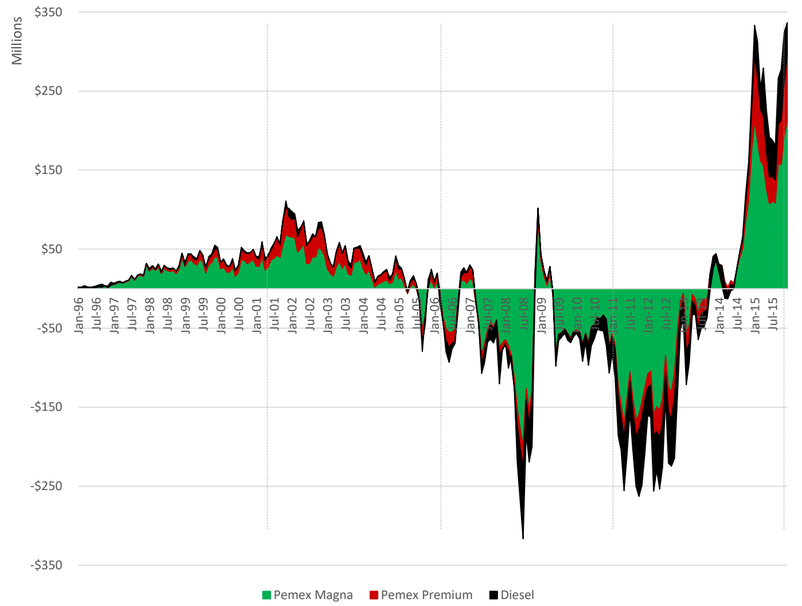
- Elasticities:

Elasticities	PEMEX Magna		PEMEX Premium		PEMEX Diesel	
	Short	Long	Short	Long	Short	Long
Price	-0.134	-1.808	-0.581	-1.000	-0.285	-0.701
	(0.042)	(0.555)	(0.677)	(0.213)	(0.156)	(0.173)
Income per capita	0.917	2.846	0.299	7.156	0.389	1.179
	(0.249)	(0.551)	(0.160)	(2.688)	(0.154)	(0.357)
Number of cars	0.879	0.046	-0.728	2.309	-0.626	1.654
	(0.481)	(1.132)	(2.694)	(4.996)	(0.863)	(0.358)

- Substitution:



- Commercial balance:



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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