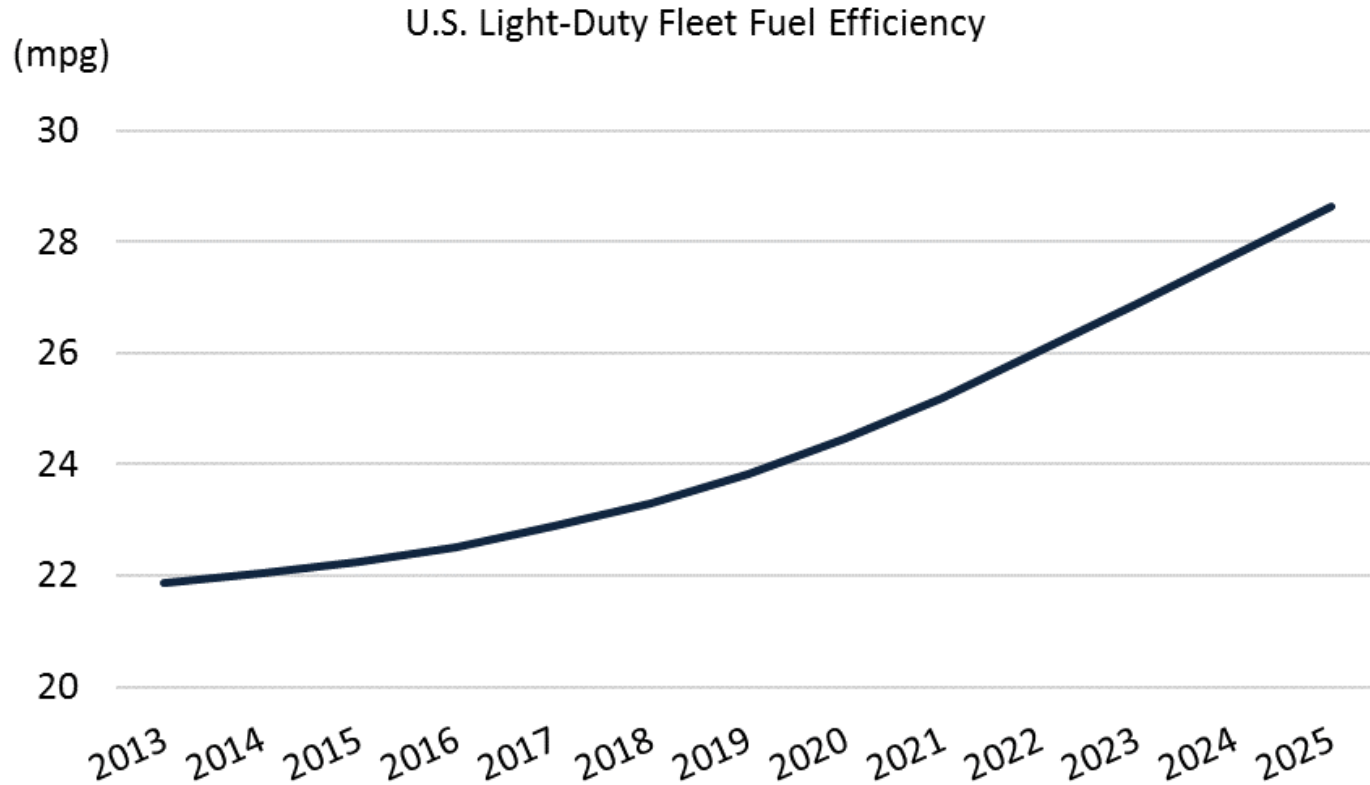


ESAI Energy, LLC

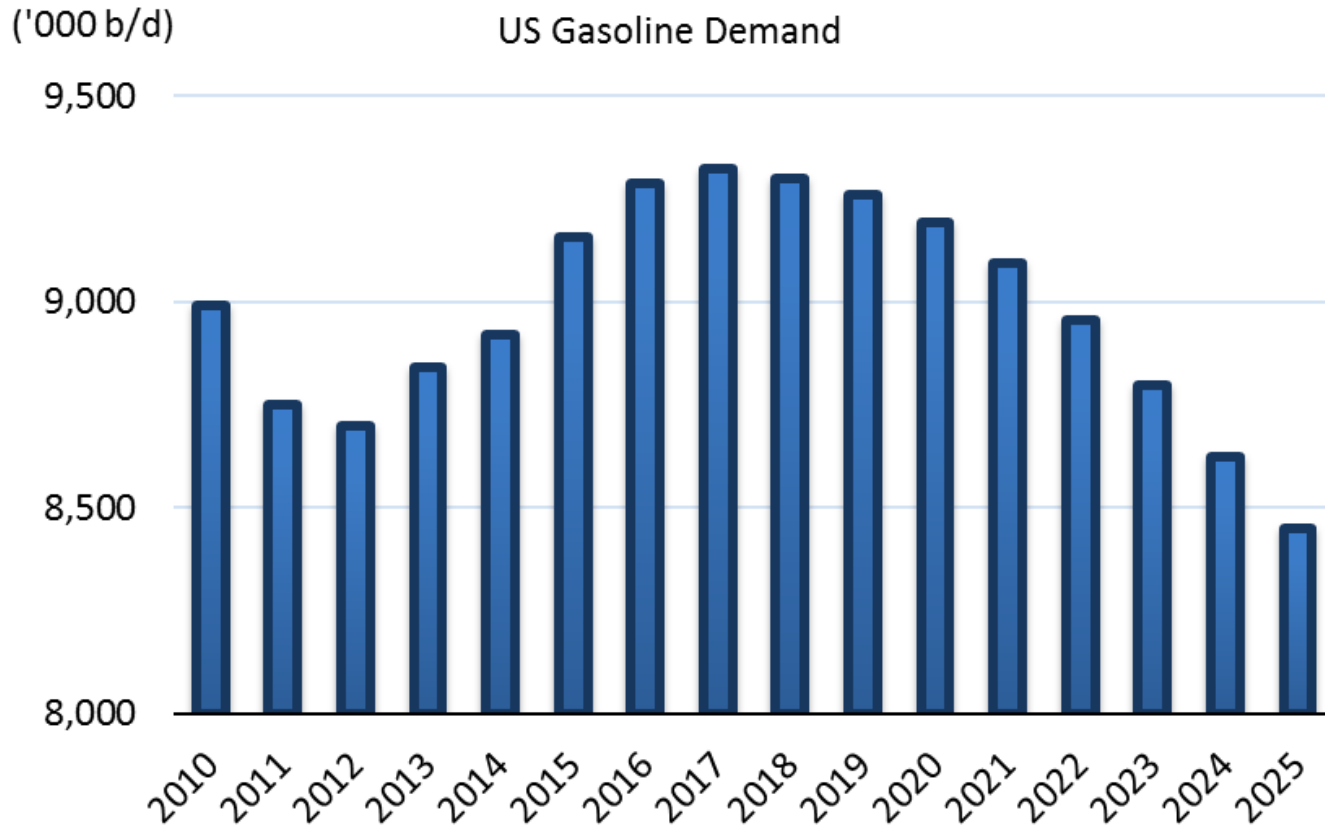
- **Independent** consultancy based in Boston with 30 years of experience covering global energy markets
- **Bottom-up approach** to analyzing and forecasting local, regional and global markets for liquid fuels and feedstock, and natural gas
- **Data-driven**, but with a strong focus on regional expertise and qualitative variables that shape the trajectories of global markets
- **Flexible** business model tailored to the needs of a global client base that includes suppliers, refiners, traders, consumers and others dependent on energy

U.S. Gasoline Demand



- CAFE Policy Drives Increased Fuel Efficiency
- Target for Model Year 2025 = 54.5 mpg

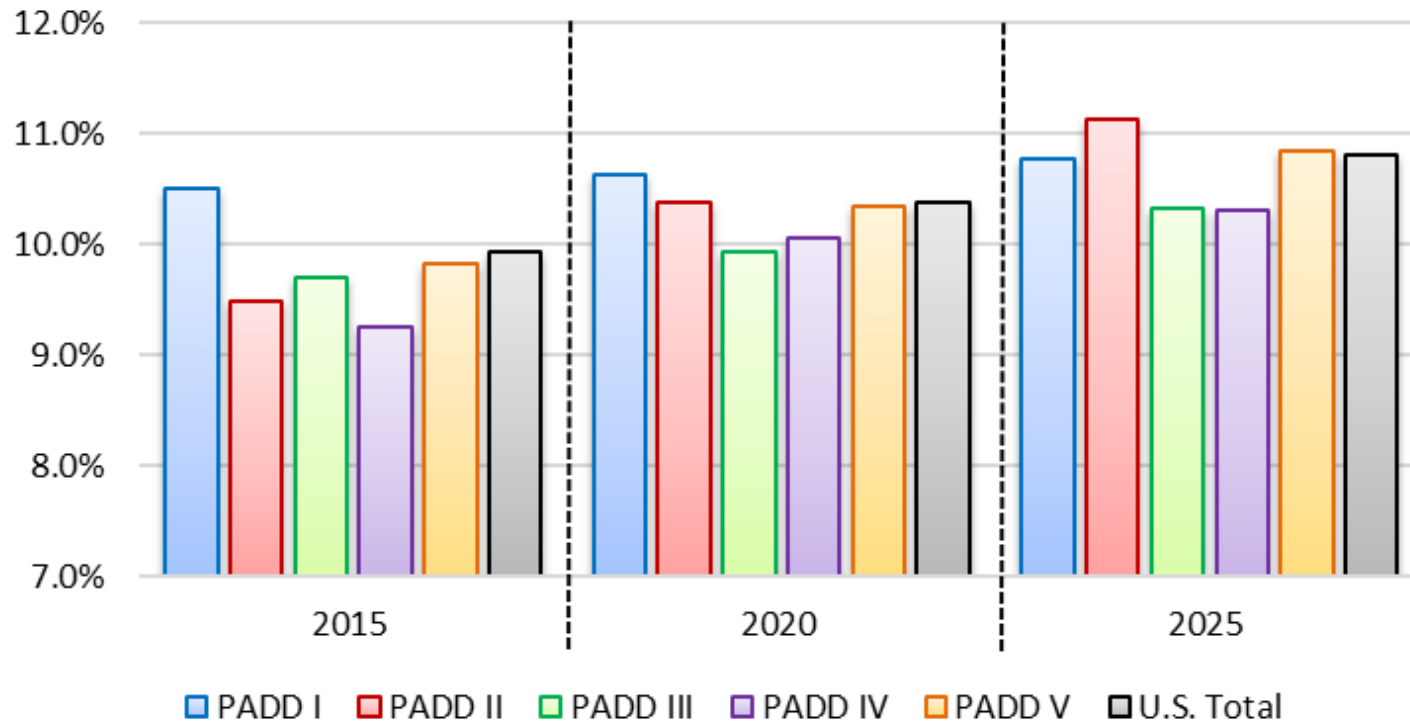
U.S. Gasoline Demand



- Efficiency and Higher Prices Hit Demand

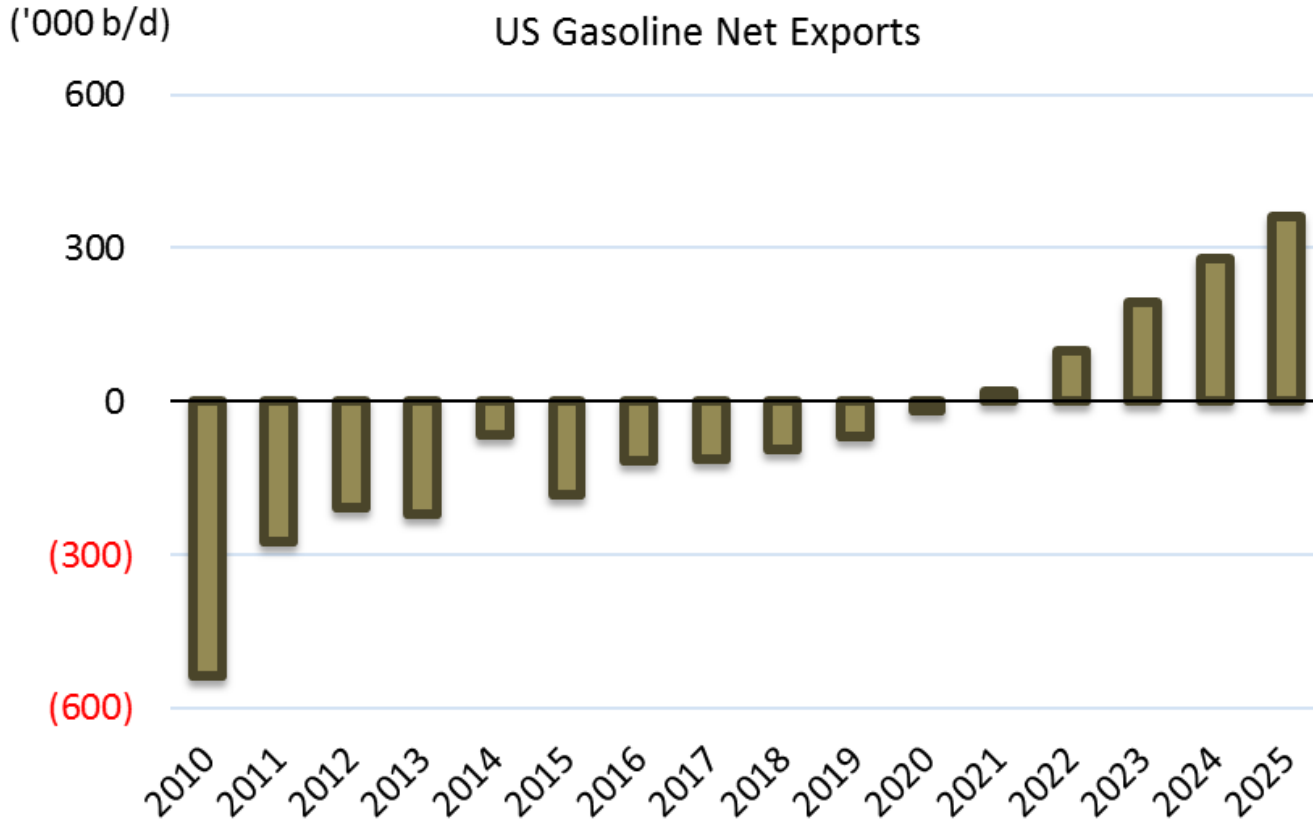
U.S. Gasoline Demand

U.S. Ethanol Blending Rates



- Replacement of Petroleum-Based Gasoline Components with Ethanol Led By PADD II

U.S. Gasoline Balance

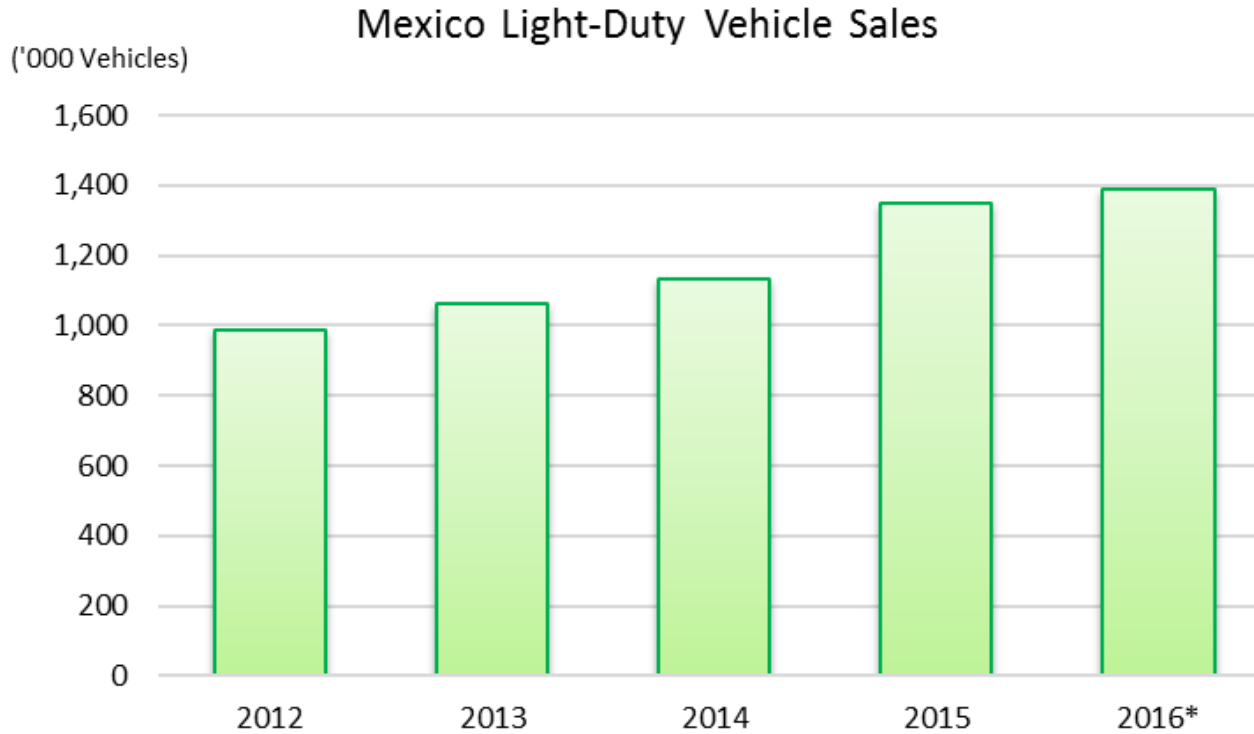


- U.S. Net Trade Position Continues to Evolve toward Surplus through 2025

Implications

- U.S. Becomes One-of-Many Marginal Gasoline Consumers, Especially in Low-Demand Seasons
- Gasoline Spreads Respond to a Set of Marginal Gasoline Consumers, Not Just New York Harbor
- Run Rates of Merchant Refiners in USGC More Closely Mirror Europe and OECD Asia Behavior
- Gasoline Deficits in Mexico and Latin America (and Africa, somewhat) Drive Prices and Runs

Mexico Gasoline Demand

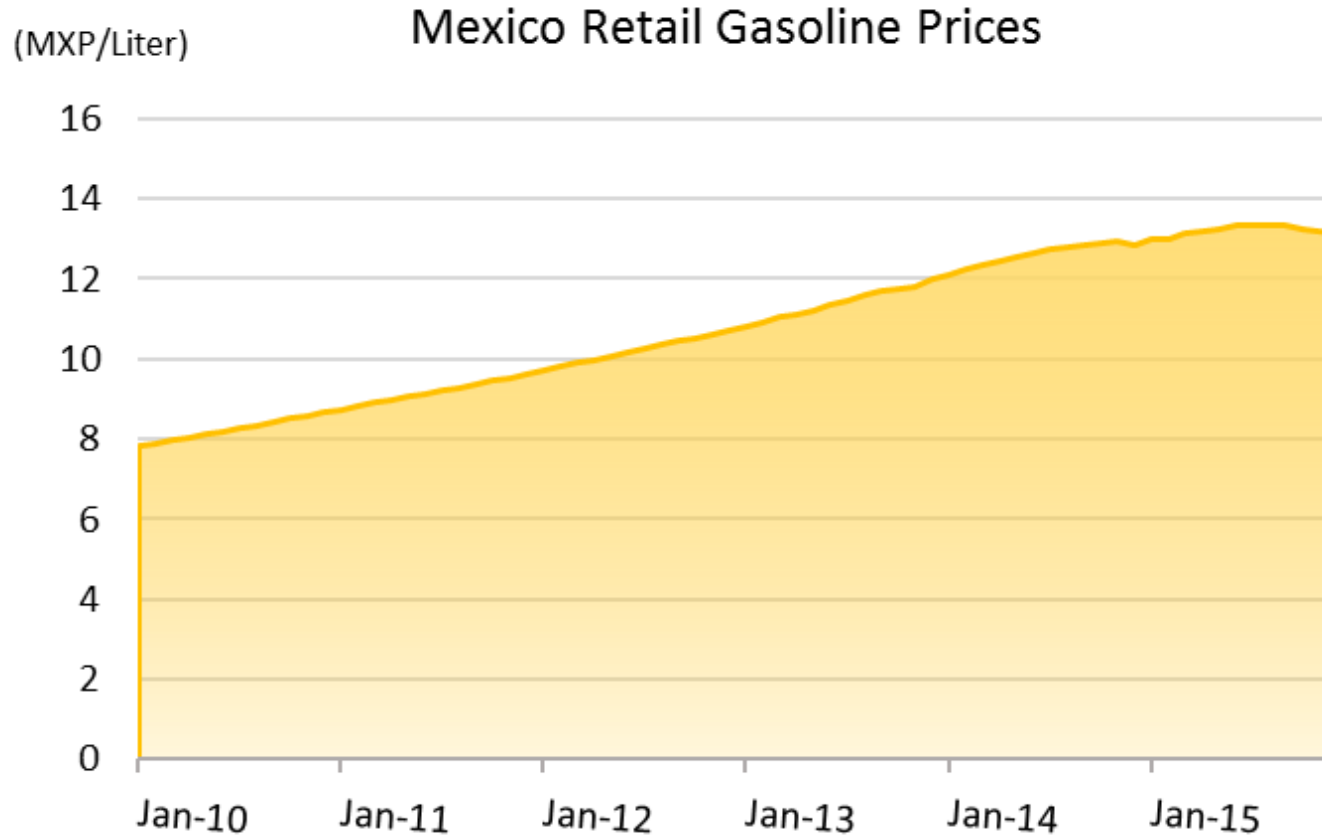


*Annualized from Q1'16 Data

Source: Asociación Mexicana de la Industria Automotriz (AMIA)

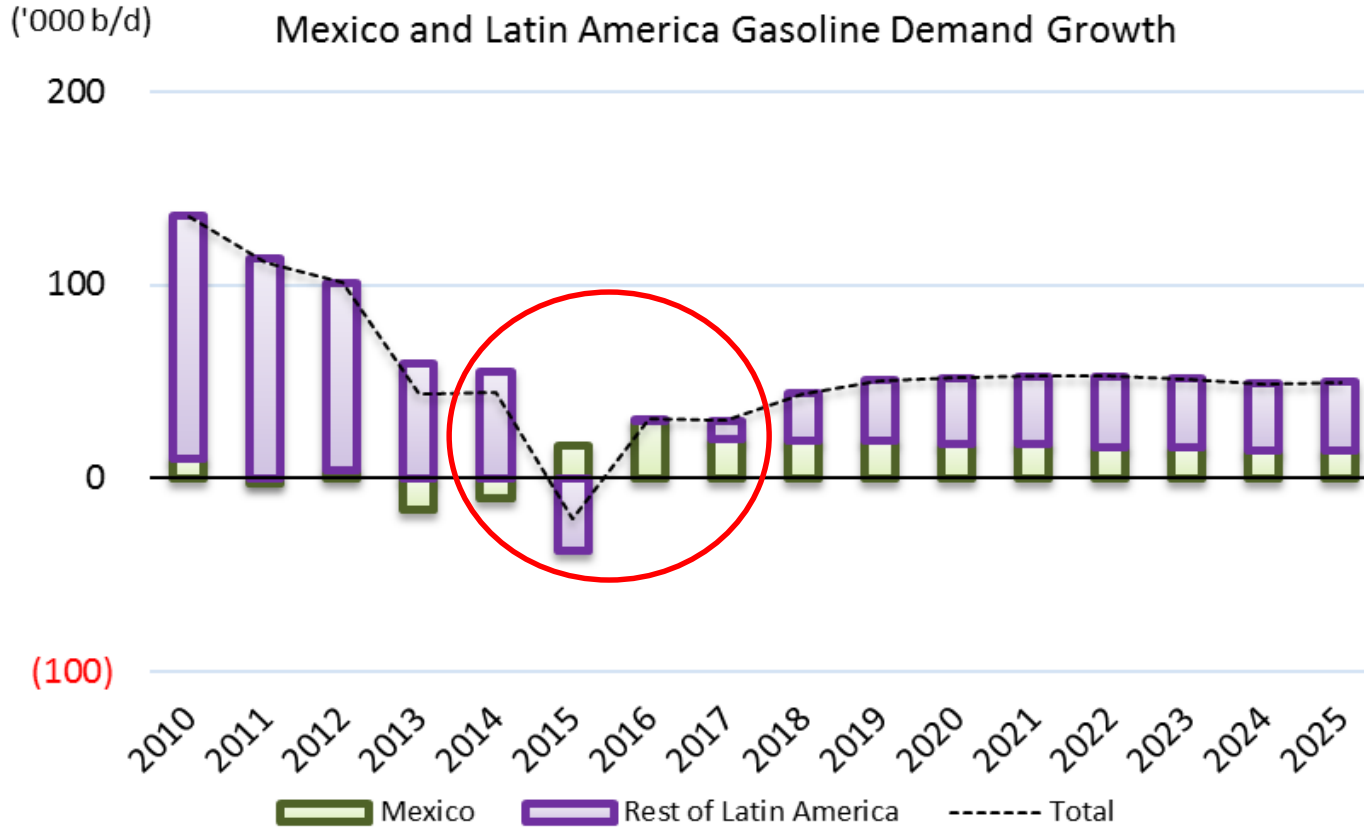
- Vehicle Sales Underpin Bullish Demand View

Mexico Gasoline Demand



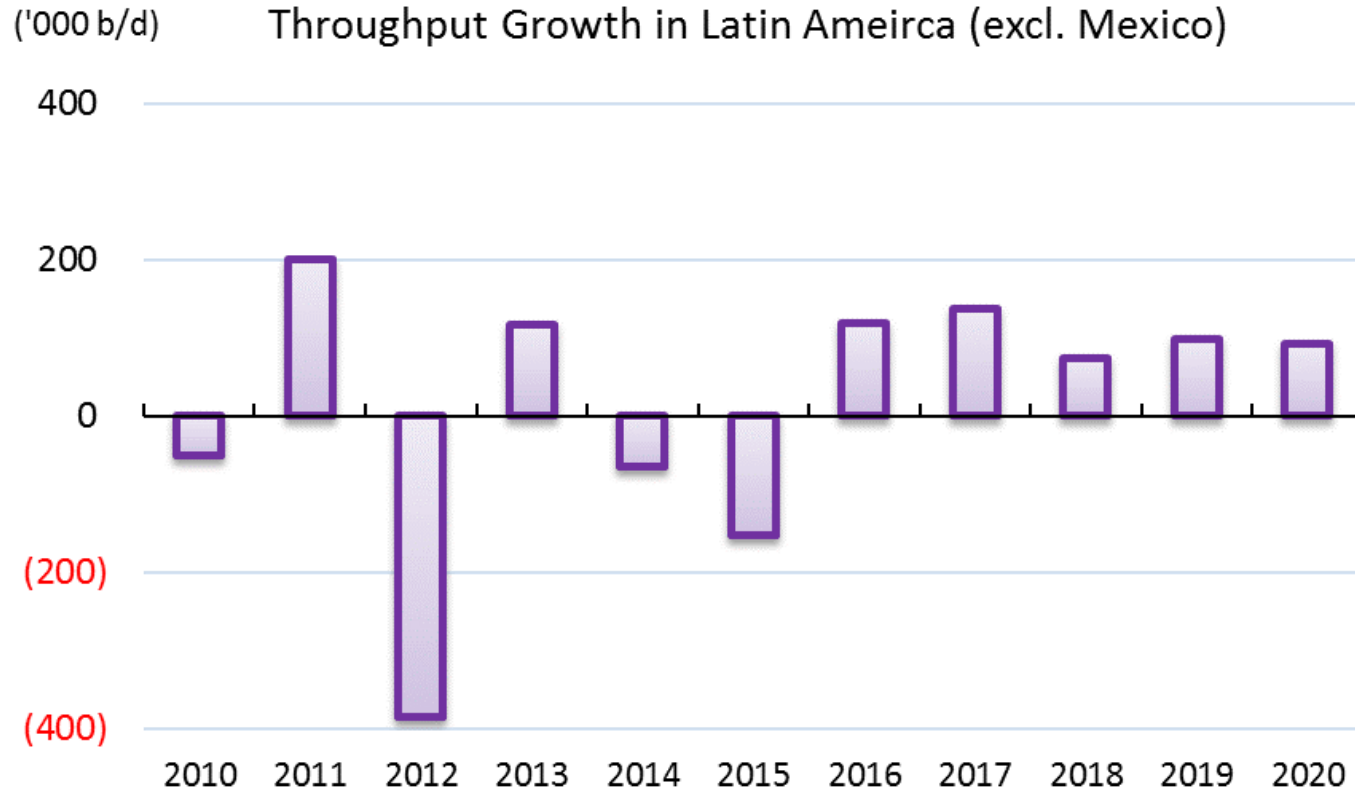
- Steady Increases in Local Gasoline Prices through 2014 Have Ended

Mexico Gasoline Demand



- Mexico as Engine of Regional Demand Growth as Demand Slips Elsewhere (esp. in Brazil)

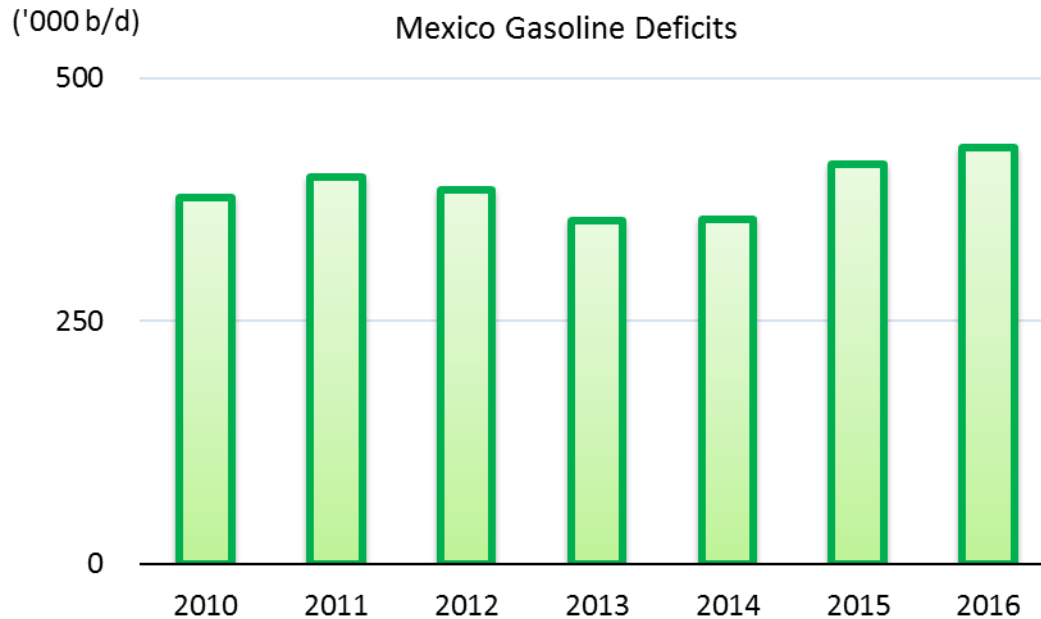
Latin America Refinery Throughput



- Refinery Expansion and Refurbishment Boosts Throughput Elsewhere in Latin America

Mexico's Post-Reform Gasoline Market

Short-Term: Imports Increase

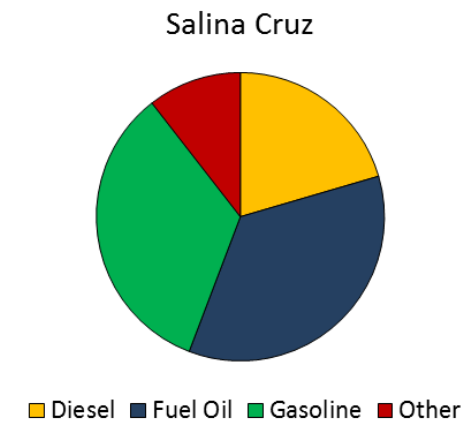
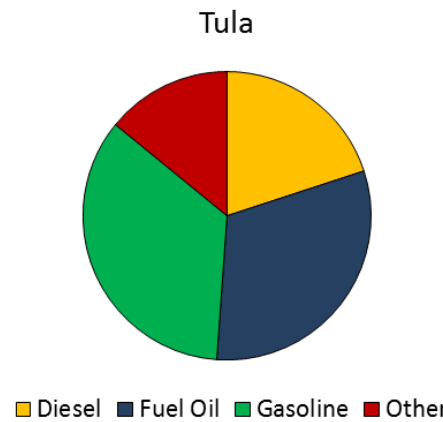
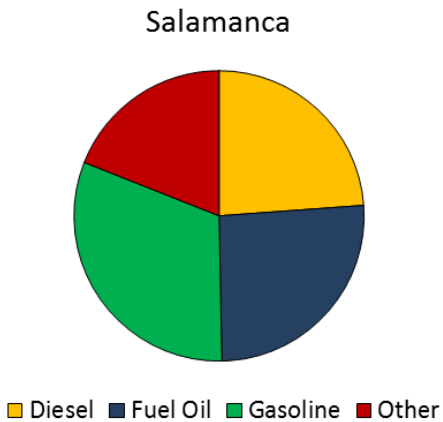
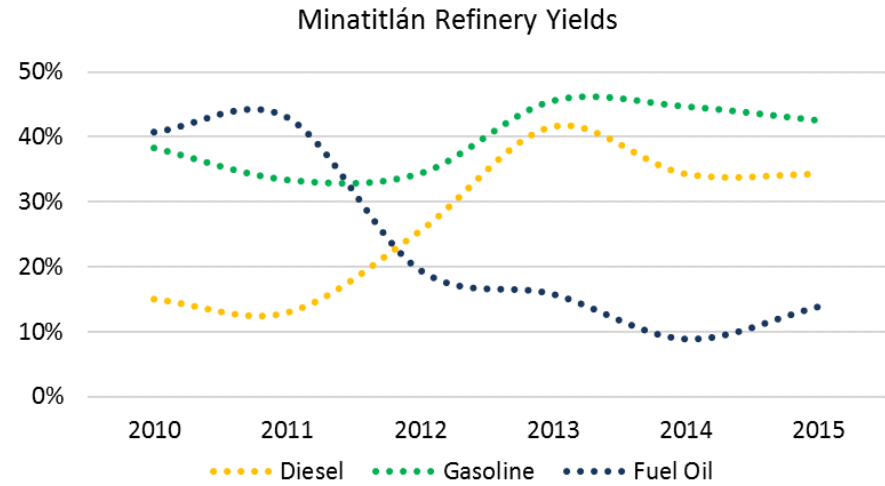
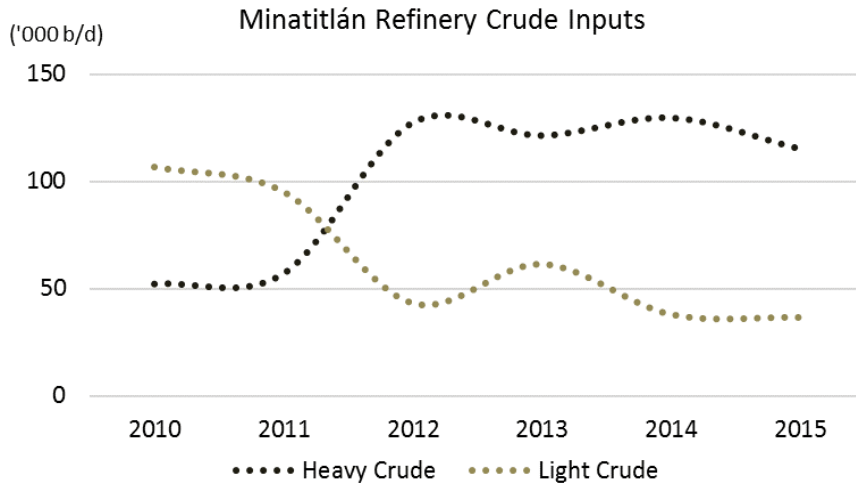


Seasonality 2010-2015	
Jan	89%
Feb	97%
Mar	99%
Apr	92%
May	98%
Jun	97%
Jul	99%
Aug	98%
Sep	102%
Oct	106%
Nov	109%
Dec	112%

- Foreign Participation in Refined Product Imports Begins in 2016

Mexico's Post-Reform Gasoline Market

Medium-Term: Gasoline Yields Rise



Mexico's Post-Reform Gasoline Market

Further Out: A New Mexican Refinery?

- Tula-Bicentenario Refinery On Hold
 - 250,000 b/d CDU
 - 166,000 b/d Coker
 - 108,000 b/d FCC
 - 48,000 b/d Reformer
- Non-Pemex Construction?

Conclusions

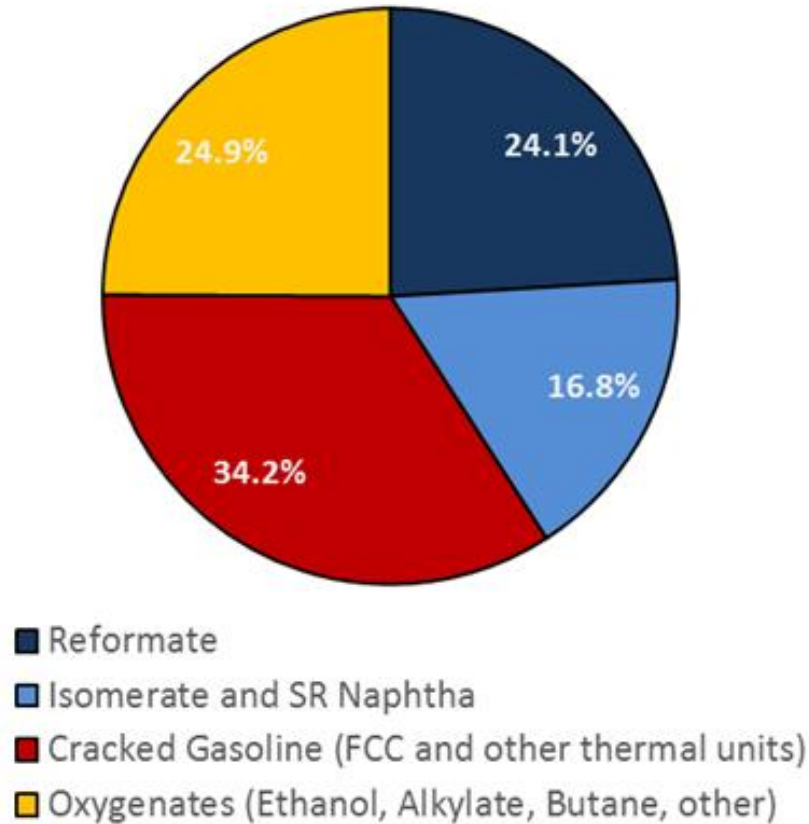
- Mexico Emerges as an Increasingly Important Sink for U.S. Gasoline Exports
- As a Result, Mexico's Gasoline Shortfall Becomes a More Vital Determinant of Spreads to Crude
- Influence of Mexico's Deficit Strongest in Q4, When Deficit Peaks (U.S. Demand is Low)
- Refinery Investment Will Reduce Continued Rise of Mexico's Deficit in the Medium Term

Questions?

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Naphtha Use in North American Gasoline

2014 North America Gasoline Blending Ratios



Naphtha Use in North American Gasoline

Naphtha Nexus

The Interaction of Global Gasoline, Naphtha and Petrochemical Markets to 2025

North America

Year	Refinery Naphtha Supply						Primary Disposition					NGL Naphtha Supply and Demand				Balance		
	Condensate Production	Splitter Throughput	Splitter Naphtha Output		Refinery Naphtha Output		Refinery Naphtha Use for Gasoline Blending		Refinery Naphtha Use for Petrochemicals		Other	NGL Production of Pentanes	Pentane Use by Refineries	Pentane Use for Petchem	Pentane Use for Diluent	Light Naphtha Balance	Heavy Naphtha Balance	Total Naphtha Balance
			Light Naphtha	Heavy Naphtha	Light Naphtha	Heavy Naphtha	Light Naphtha	Heavy Naphtha	Light Naphtha	Light Naphtha								
2014																		
2015																		
2016																		
2017																		
2018																		
2019																		
2020																		
2021																		
2022																		
2023																		
2024																		
2025																		

Gasoline Blending Analysis	Isomerate & SR Naphtha	Reformate	Cracked Gasoline*	High-Octane Blendstock**	Total Gasoline Supply
2014					
2015					
2016					
2017					
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					

Petchem Analysis (tkpa)	Ethylene Production from Naphtha	Ethylene Production from Other ^o	BTX Production from Naphtha
2014			
2015			
2016			
2017			
2018			
2019			
2020			
2021			
2022			
2023			
2024			
2025			

*Includes output from FCC and other thermal units

**Includes Alkylate, Butane, Ethanol, MTBE, ETBE and others

^oIncludes ethane and LPG