

Global Soda Ash Overview

Global supply/demand overview and how India fits into the global picture

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Chlor-alkali/Soda Ash, IHS Markit

AIGMF, India, May 26th, 2018

Soda Ash Capacity Dynamics are Constantly Shifting



2000

2018

Rank	Company	Caps MMT/Share
1	Solvay	6.79 / 15.5%
2	FMC	3.50 / 8.0%
3	General Chemical	2.55 / 5.8%
4	Sterlitamak	2.30 / 5.2%
5	OCI Enterprises	2.09 / 4.8%
6	Brunner Mond	1.48 / 3.4%
7	IMC Global	1.36 / 3.1%
8	Ciech	1.10 / 2.5%
9	Lianyungang Soda	0.90 / 2.1%
10	Shandong Haihua	0.90 / 2.1%
Top10		23.0/52.4%

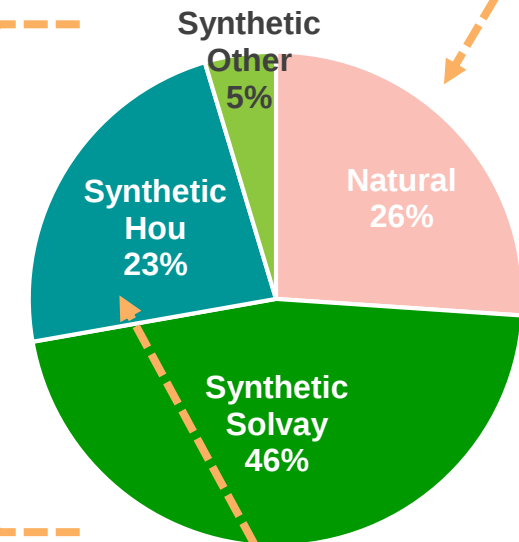
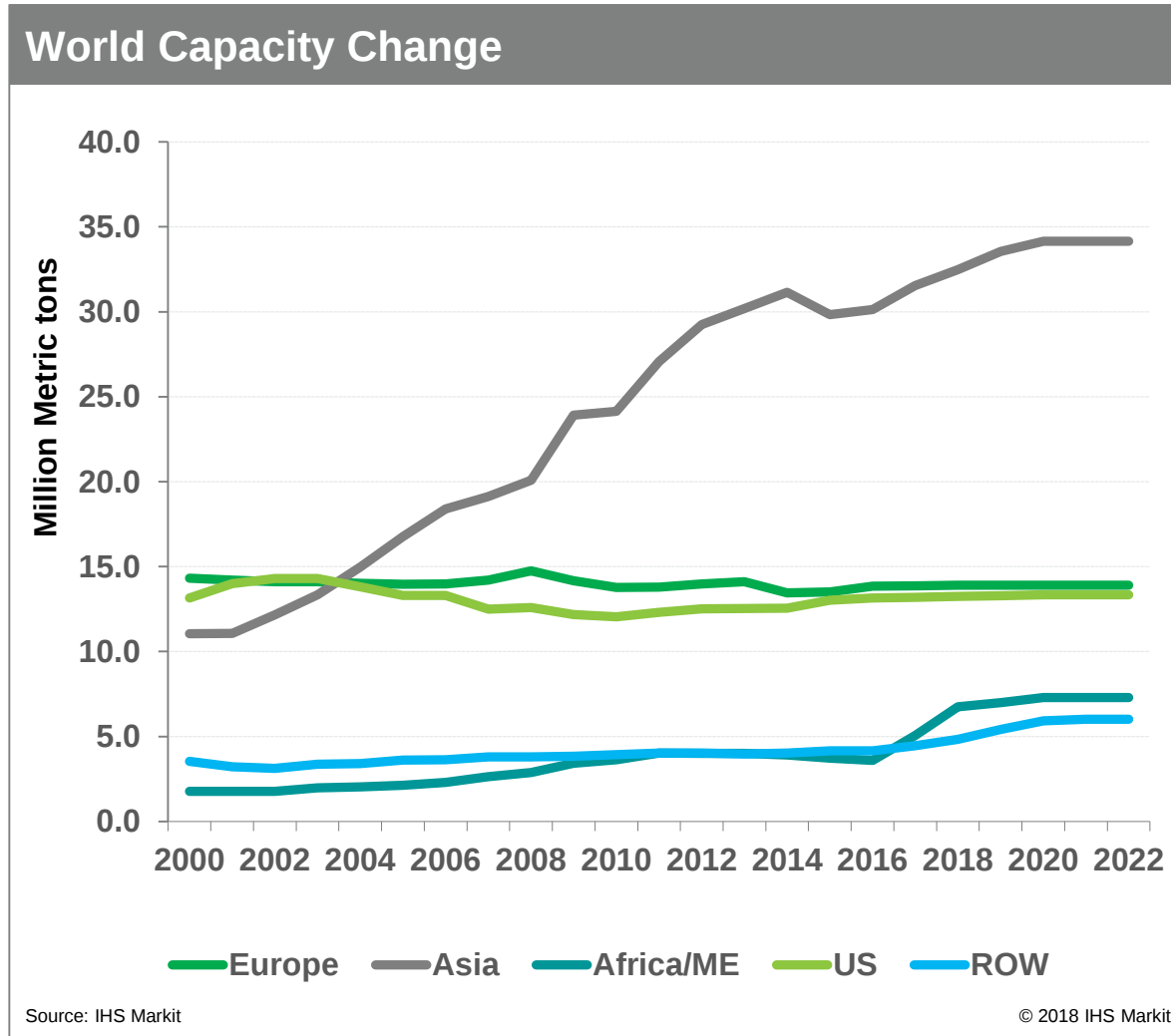
Rank	Company	Caps MMT/Share
1	Solvay	7.32 / 10.7%
2	Tata	3.73 / 5.5%
3	Tronox (FMC)	3.68 / 5.4%
4	Ciner Group	3.06 / 4.5%
5	Shandong Haihua	2.85 / 4.2%
6	NIRMA	2.70 / 4.0%
7	Ciech	2.41 / 3.5%
8	Sanyou Chemical	2.30 / 3.4%
9	Hubei Yuhua	2.10 / 3.1%
10	Sisecam	1.93 / 2.8%
Top10		32.1/47.0%

Rank	Company	Caps MMT/Share
1	Solvay	7.32 / 10.3%
2	Ciner	4.60 / 6.5%
3	Tata	3.73 / 5.2%
4	Genesis Alkali	3.68 / 5.2%
5	Shandong Haihua	2.85 / 4.0%
6	NIRMA	2.73 / 3.8%
7	Ciech	2.43 / 3.4%
8	Sanyou Chemical	2.20 / 3.1%
9	Hubei Yuhua	2.10 / 2.9%
10	Sisecam	1.93 / 2.7%
Top10		33.6/47.0%

2017

Calculated on a shareholder basis

Capacity by Geography and Type

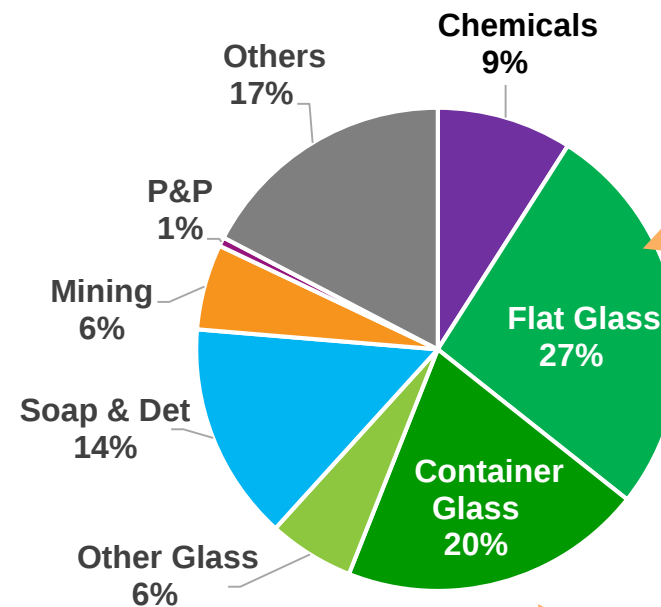


US has biggest commercial reserves of natural soda ash. The newest commercial natural production is in Turkey

Hou process is mostly in China, co-produces NH_4Cl (a low grade fertilizer)

Soda Ash Demand

- Flat glass dominated demand
- Each region though has its own demand profiles
- China is the biggest flat glass producer in the world
- In India detergents is the main demand sector



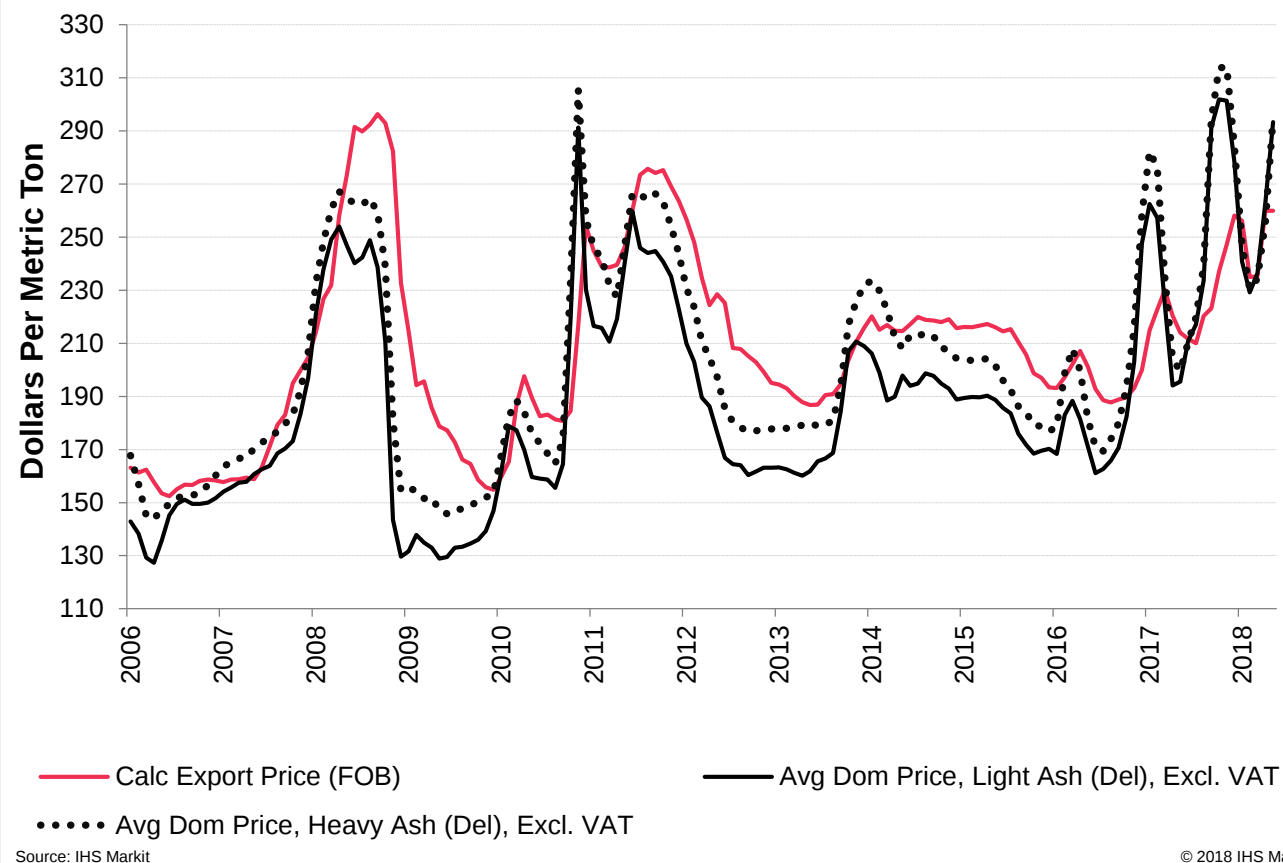
The biggest end use is flat glass, is driven by Construction

2nd biggest end use is Container glass. Niche for Alcoholic Beverages

Shifting Market Dynamics

- Markets seeing increased volatility
- Soda ash supply/demand dynamics shifting
- China is seeing new environmentally focus impacting on supply and on some demand sectors
- Volatility in energy/raw materials
- A new supply source, Turkey, entering the market
- Flat glass still drives world demand, also some traditional & new demand sectors supported by environmental concerns

China Soda Ash Price Comparison



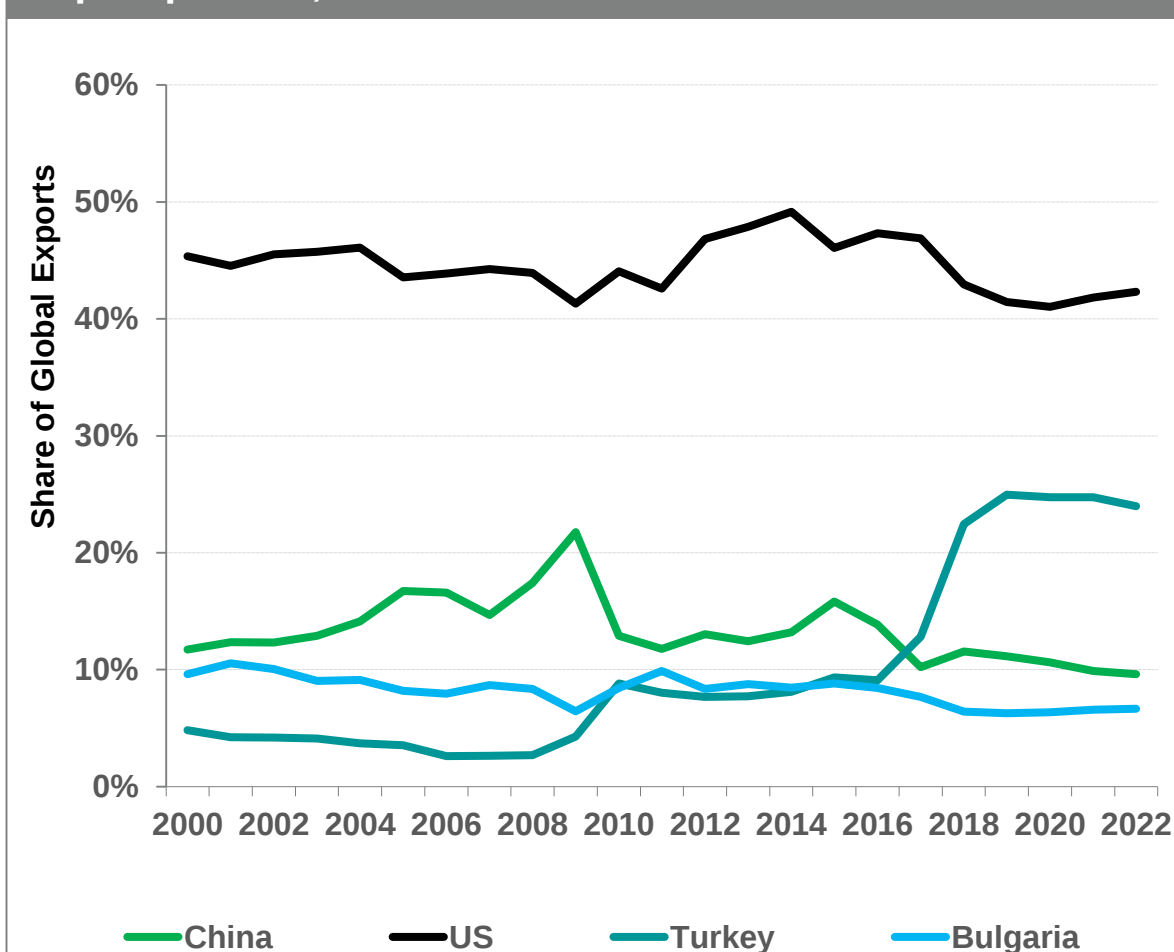
Soda Ash Trade



Top Exporters, Turkey becoming a Major Player

- Natural soda ash producer, the US, is dominant exporter
- China historically 2nd largest exporter
- Turkey becoming a major player
- Beypazari (expansion) and Kazan (new plant)
- 3 MMT new capacity on stream in 2017/18
- New natural capacity has low production costs
- Now the 2nd largest exporter in the world

Top Exporters, Share



Source: IHS Markit

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Regional Market Dynamics

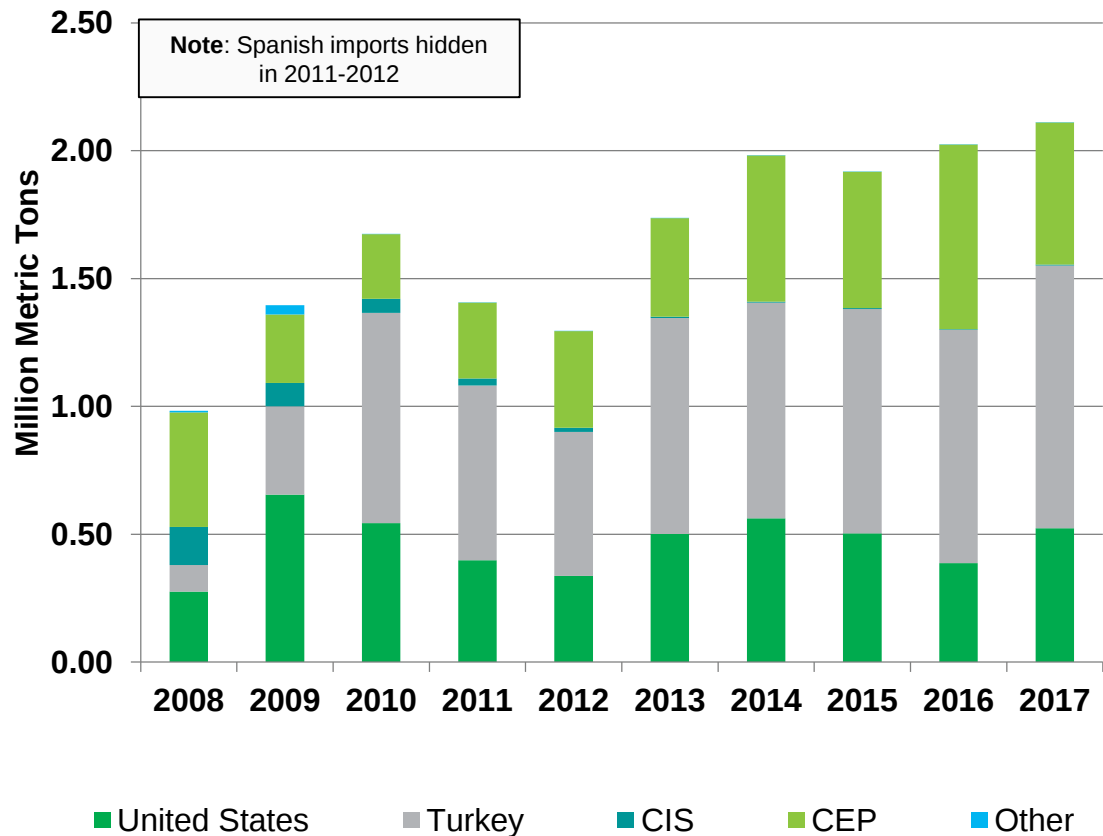
How Turkey Competes



- By the end of 2018 Turkey will have a total capacity of 5.35 MMT
- But the domestic market is just a little over 1.0 MMT

Europe Challenges

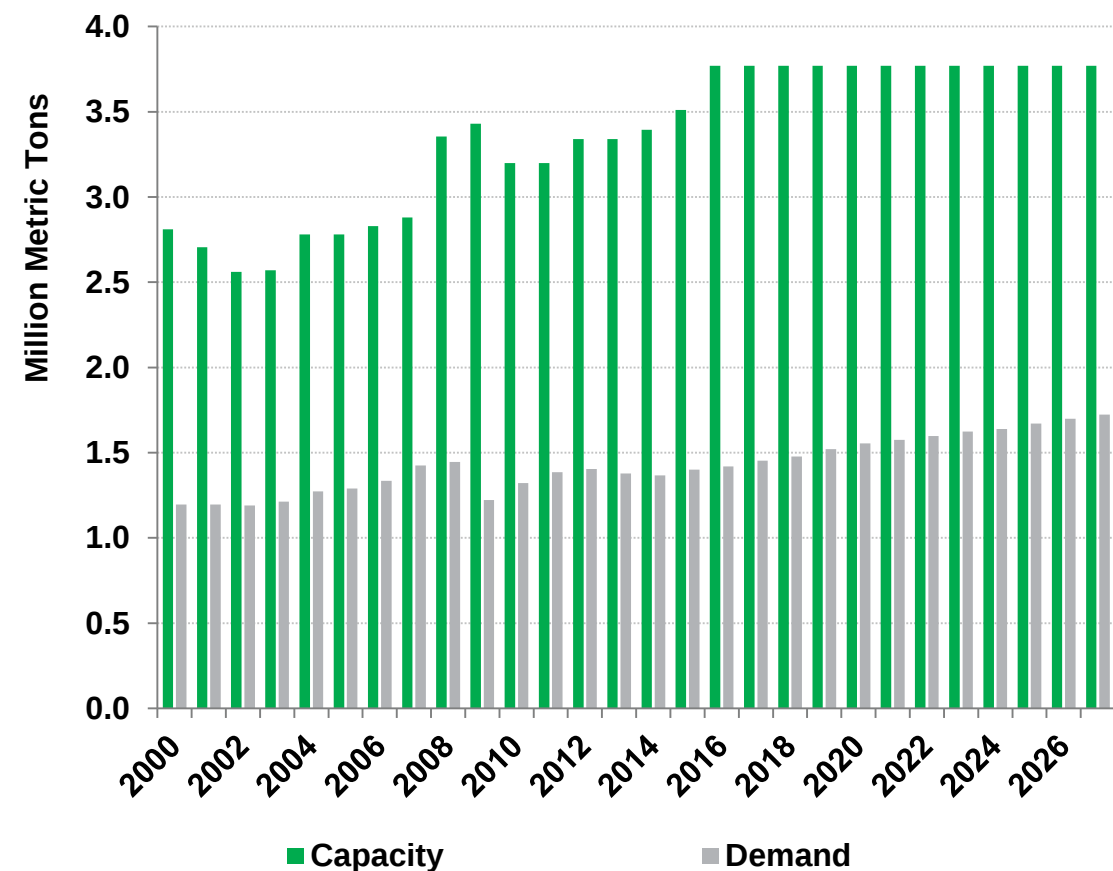
EU-15 Soda Ash Imports



Source: IHS Markit

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Central Europe Capacity vs Demand



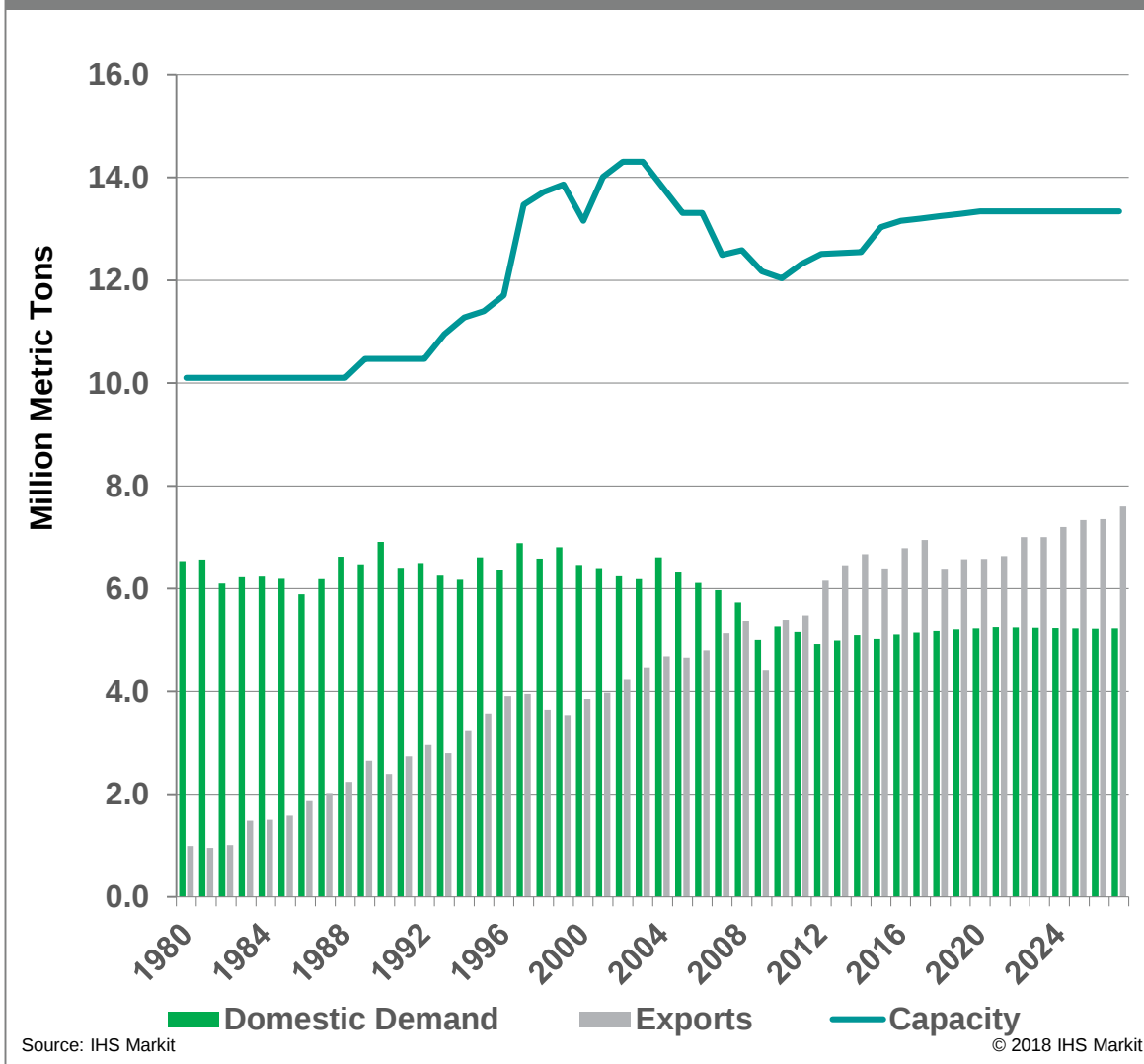
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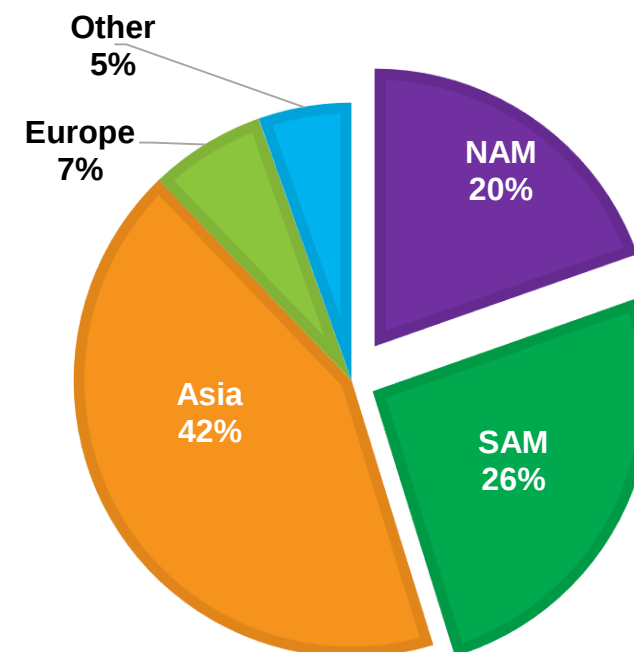
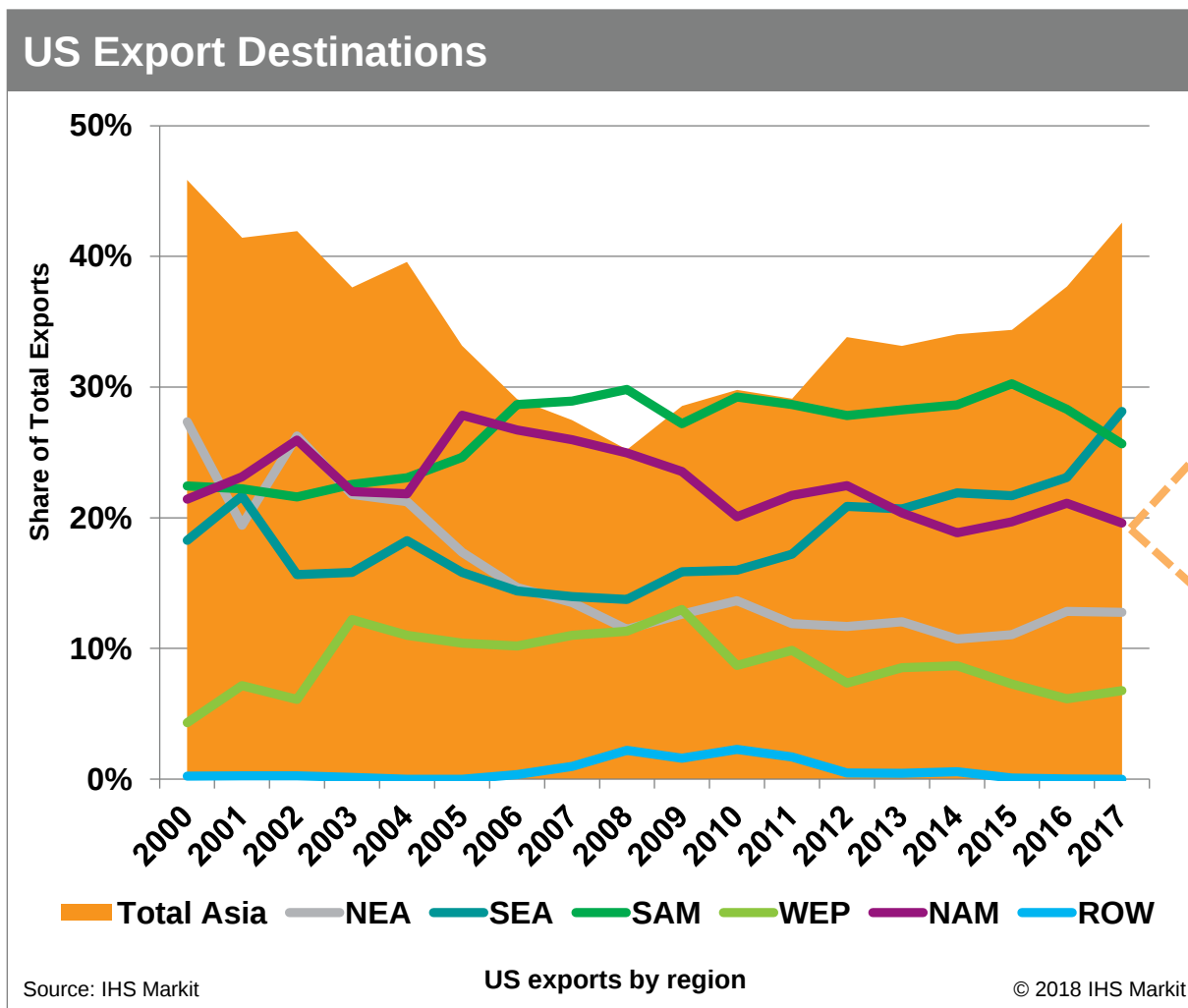
US Historical Context

- US capacity far exceeds demand
- Domestic demand fell after the financial crisis
- **Domestic demand** is below pre-recession levels
- **Container glass**, largest end use, is declining
- 11 **float-glass** plants shut between 2007-2014, demand has recovered but local glass plants struggling to keep up
- No major **soda ash capacity** expansions scheduled

US Supply Demand Dynamics



US dominance in NAM is absolute but its influence in other markets is threatened



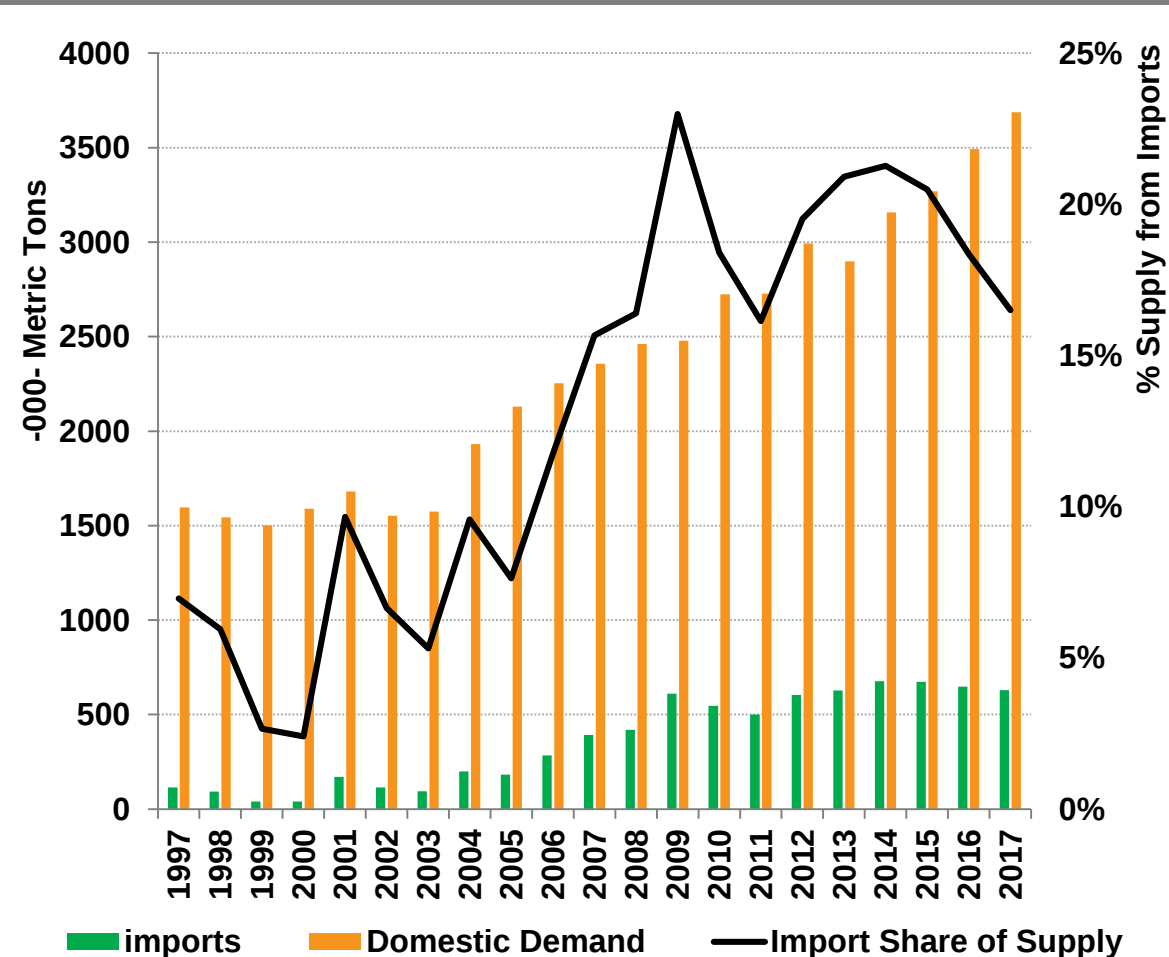
Indian Subcontinent Historical Context

- Demand is growing
 - > Dominated by detergents
 - > Flat glass, housing, solar glass
 - > Container glass...capped by alcohol laws...
- Domestic suppliers dominate
- The big question is about supply, domestic vs import
 - > Indian supply concentrated in Gujarat
 - > India has a very exposed geography



India has very diverse sources of supply.

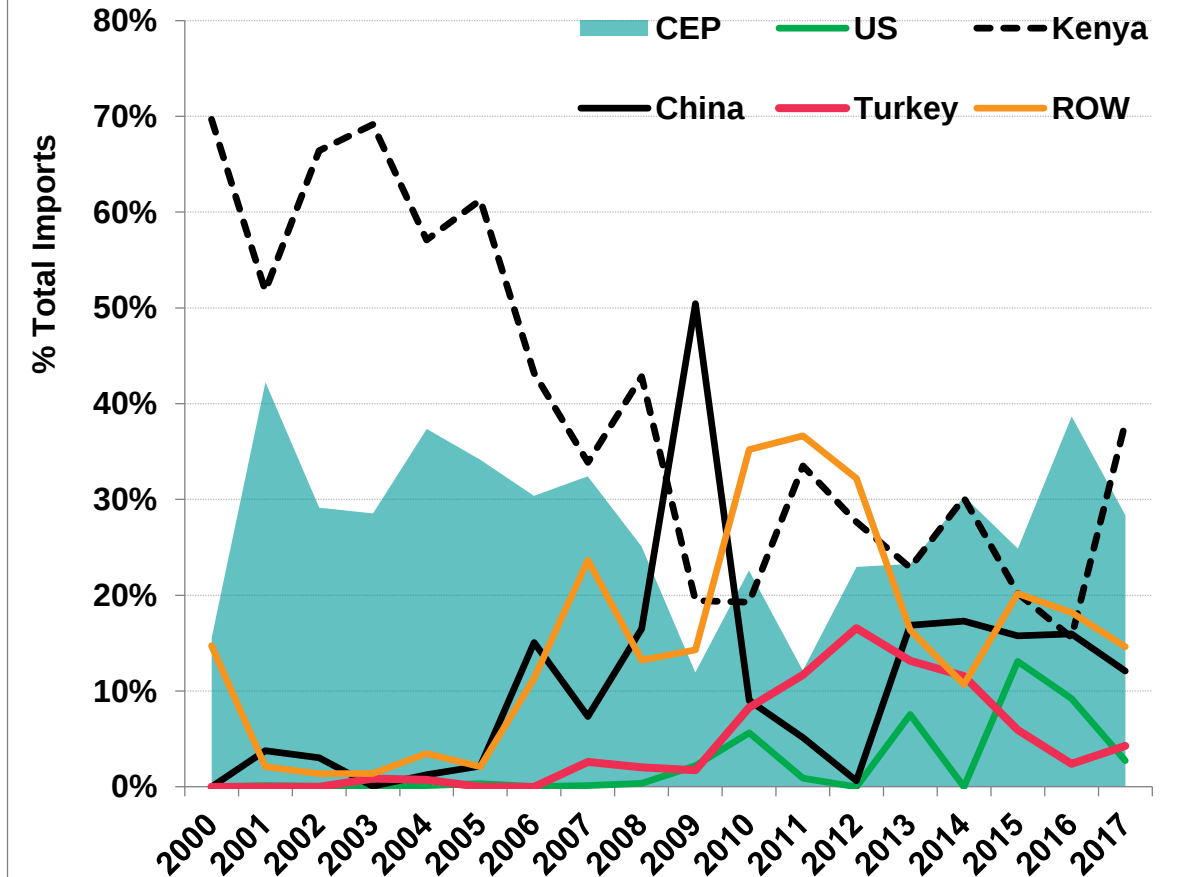
India Demand vs Imports



Source: IHS Markit

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Indian Imports

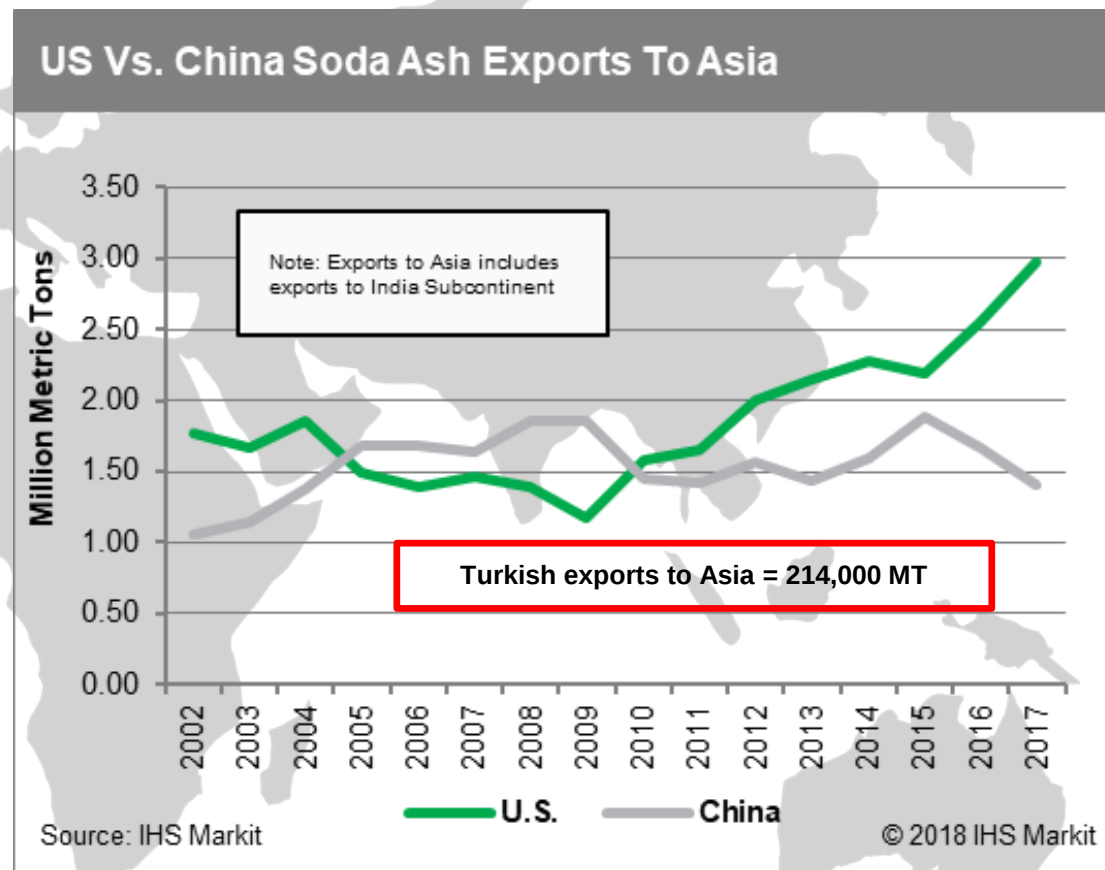


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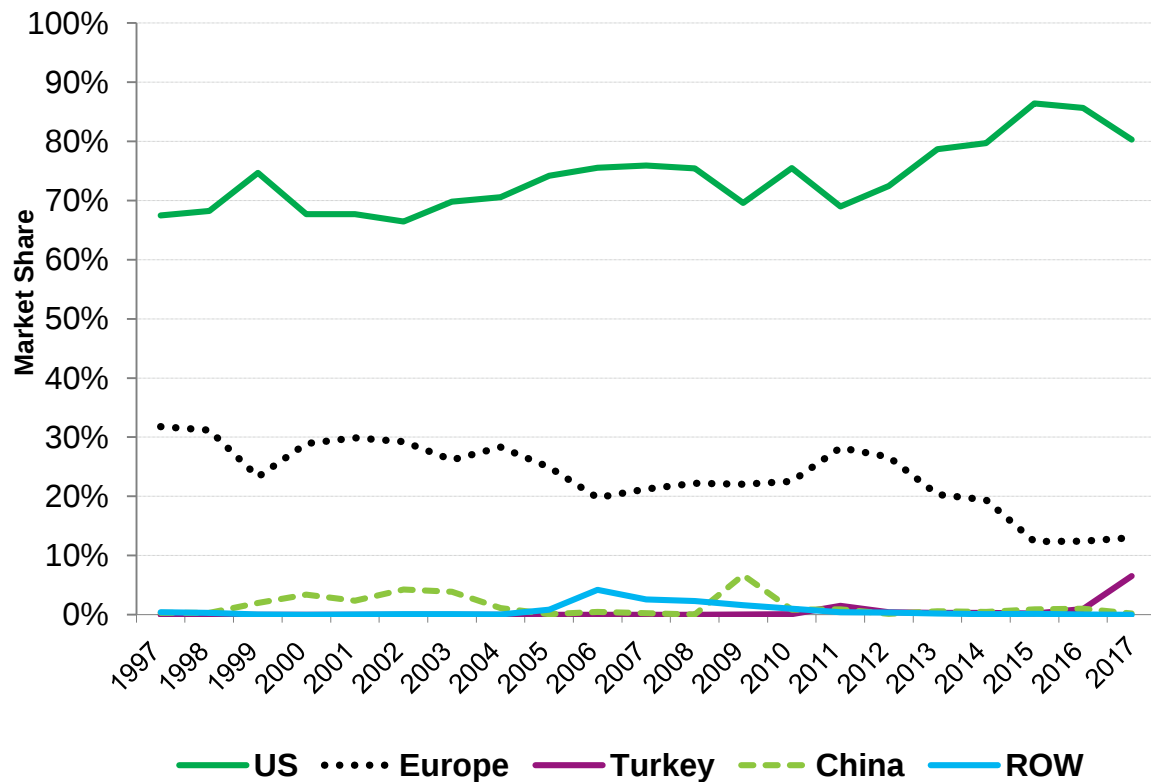
Southeast Asian Historical Context

- A number of new soda ash end use prospects in Southeast Asia
 - > New sodium bicarbonate plants in Thailand and Singapore
 - > New float glass plants in Malaysia
 - > New container glass plants in Thailand
 - > Lithium capacity is growing in Australia
- All this opens new opportunities for soda ash producers



South America is an Attractive Market for Exporters

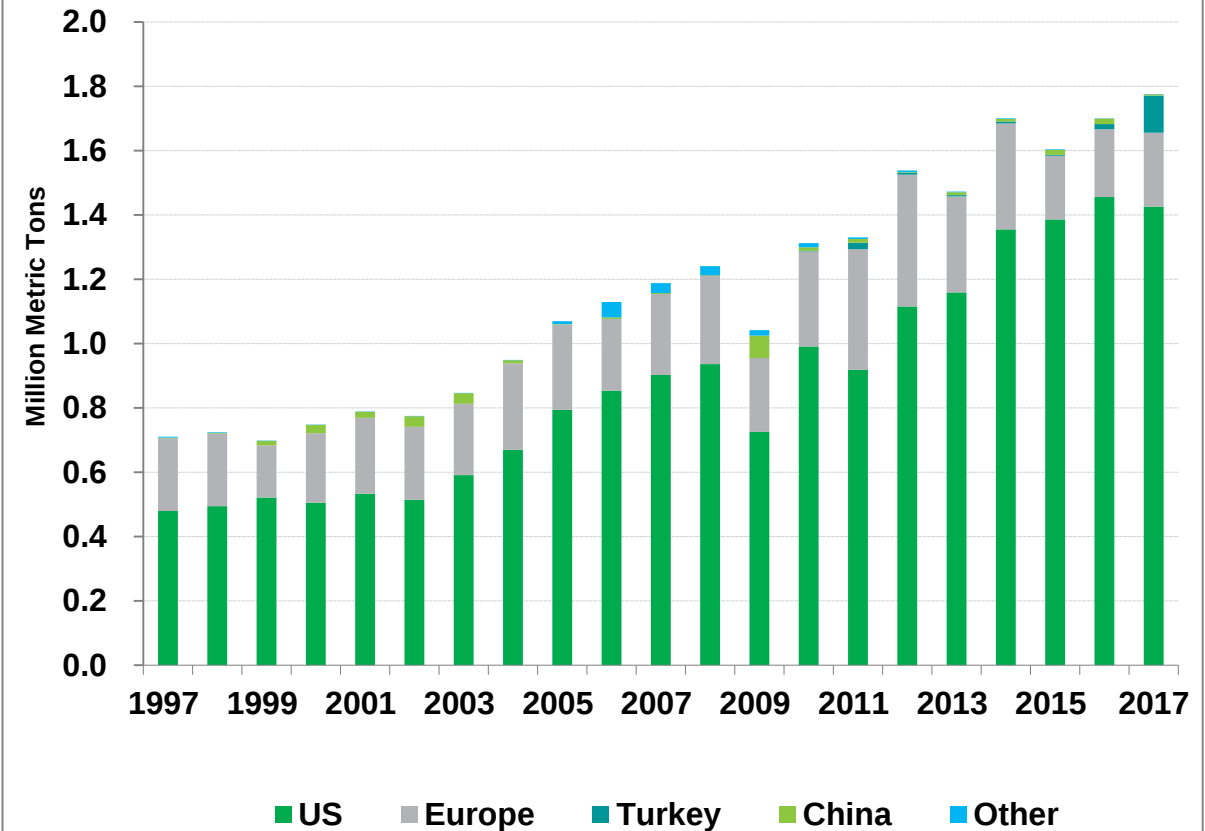
Imports to Brazil, Argentina, Chile, Market Share



Source: IHS Markit

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Soda Ash Imports, Brazil, Chile, Argentina



Source: IHS Markit

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Summary Page



2000 – 2018 has seen saw significant shifts in profile of key soda ash market players



Growth in China has influenced global volatility



New trona based capacity in Turkey will challenge existing suppliers



Strong prospects for demand in developing markets including India, South America, S.E.Asia

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