

Latin American polymer markets: Perception vs. reality in a changing landscape

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AGENDA

Three Questions:

Where does the region stand?

What are the major challenges facing these markets?

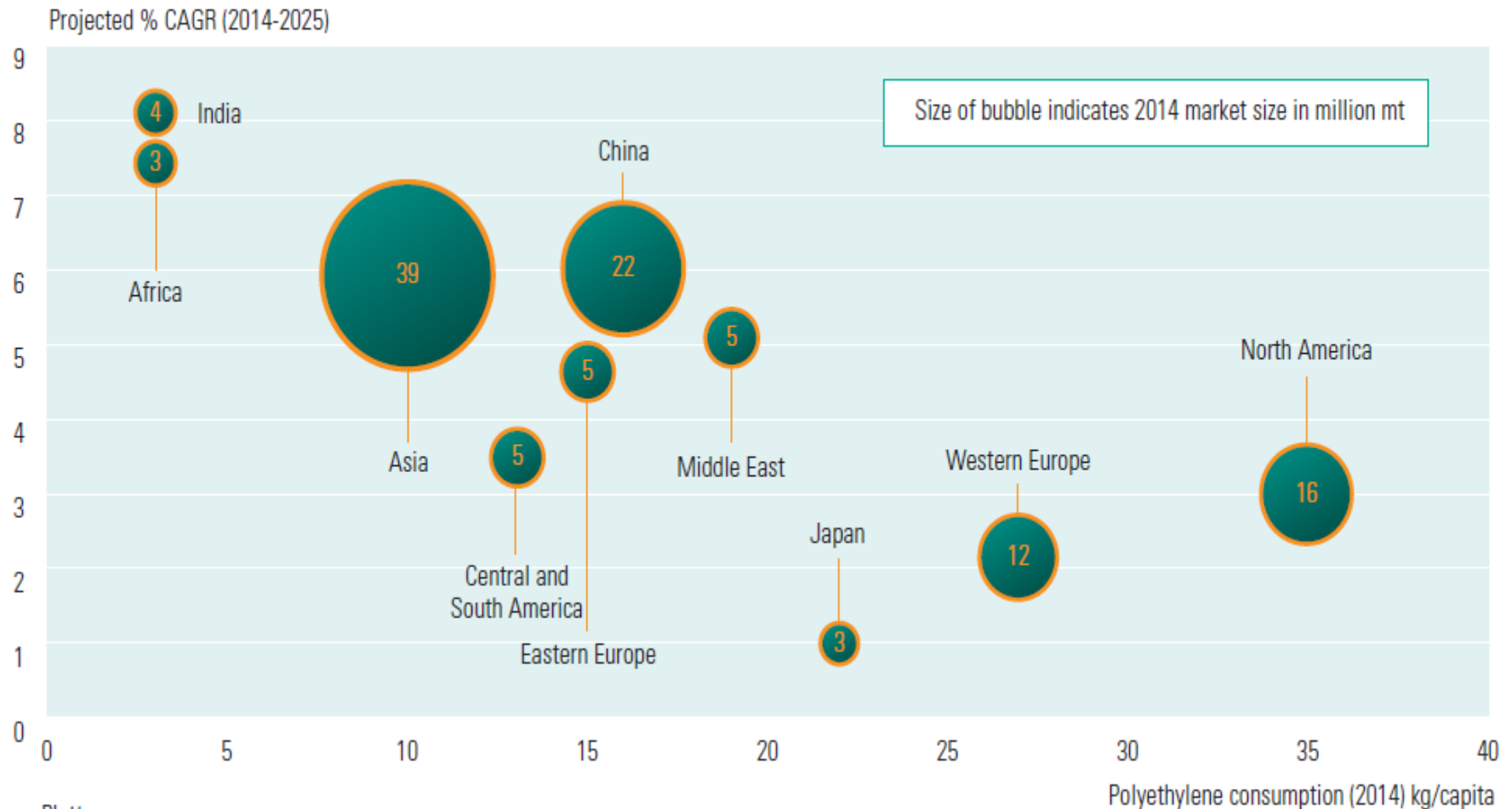
When will new North American capacities reach South America?

How are prices behaving with oil at \$50/b?

Polyethylene, polypropylene, PVC

Key takeaways

Polyethylene demand per capita



Source: Platts

- Latin America's population is near 600 million, yet PE capacity totals 5 million mt/year
- For US/Canada sellers, South America is a logical and attractive proposition because of proximity and growth potential
- But... IMF has revised region's GDP growth forecasts down significantly
- Brazil in technical recession

Latest IMF projections

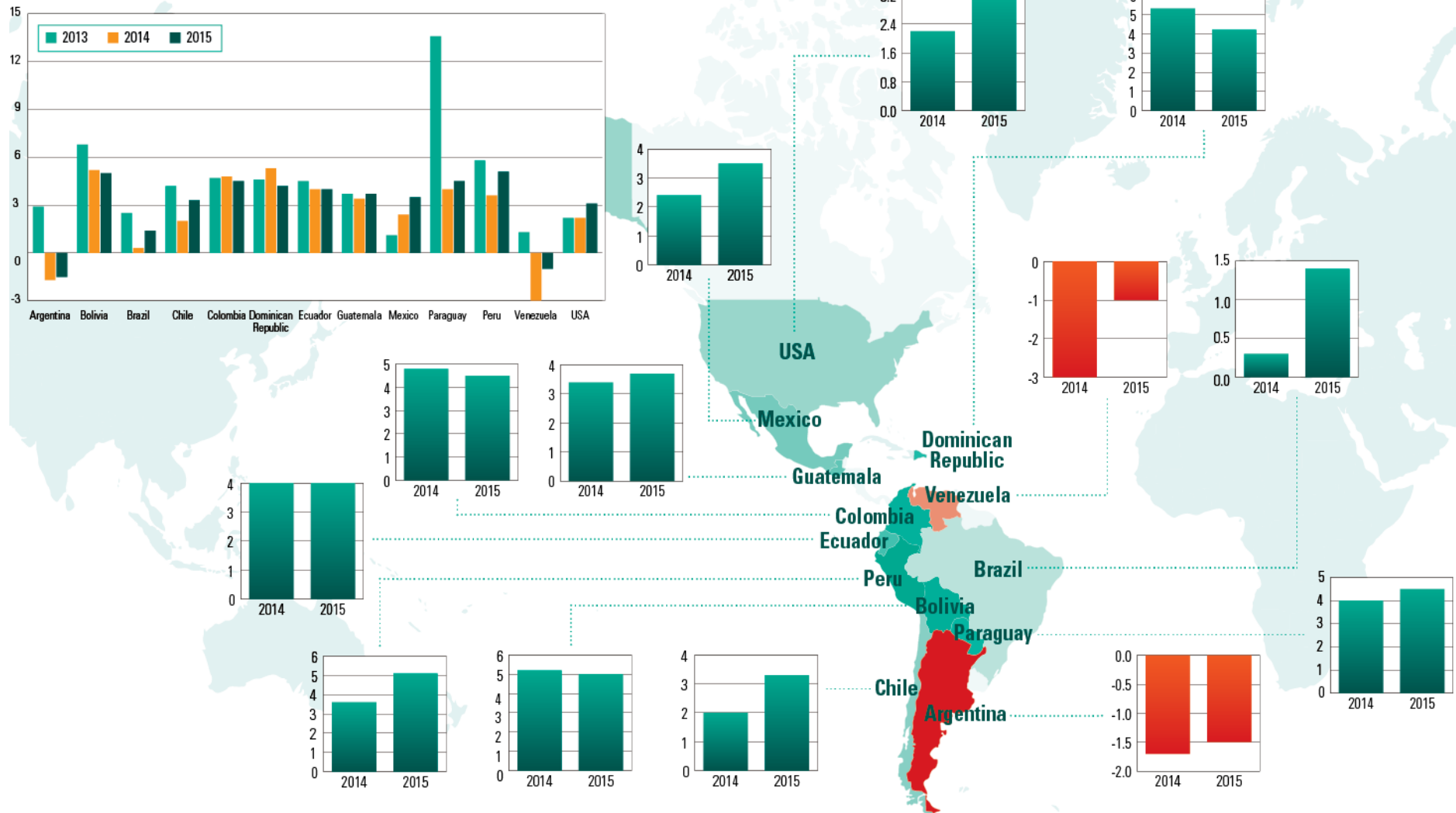
(real GDP growth, annual % change)

Country	2013	2014	2015
Argentina	2.9	-1.7	-1.5
Bolivia	6.8	5.2	5.0
Brazil	2.5	0.3	1.4
Chile	4.2	2.0	3.3
Colombia	4.7	4.8	4.5
Dominican Republic	4.6	5.3	4.2
Ecuador	4.5	4.0	4.0
Guatemala	3.7	3.4	3.7
Mexico	1.1	2.4	3.5
Paraguay	13.6	4.0	4.5
Peru	5.8	3.6	5.1
Venezuela	1.3	-3.0	-1.0
USA	2.2	2.2	3.1
Lat Am & Caribbean	2.7	1.3	2.2

Source: IMF Survey, October 10, 2014

Largest economies lagging

LATEST IMF PROJECTIONS (real GDP growth, annual % change)

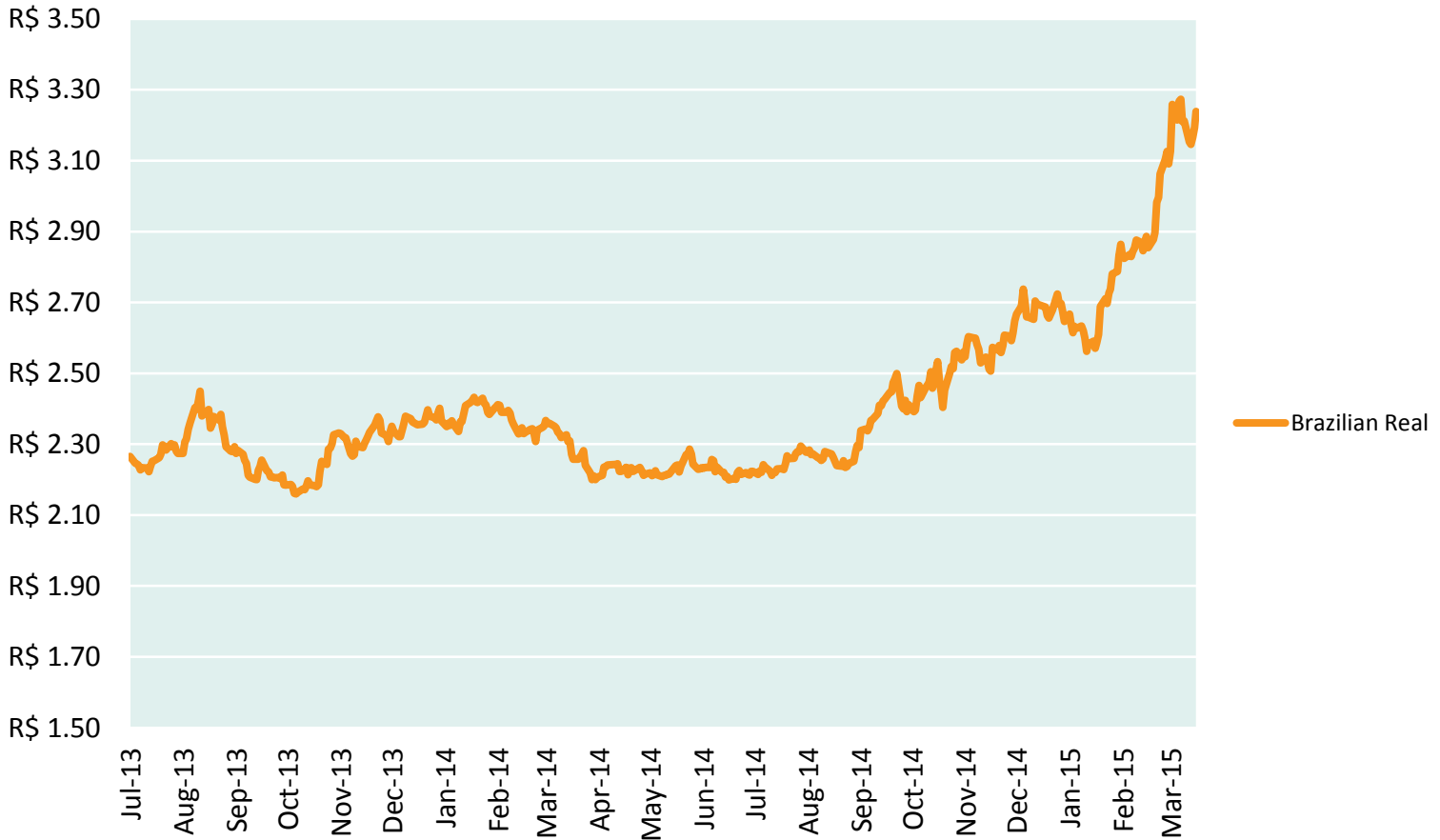


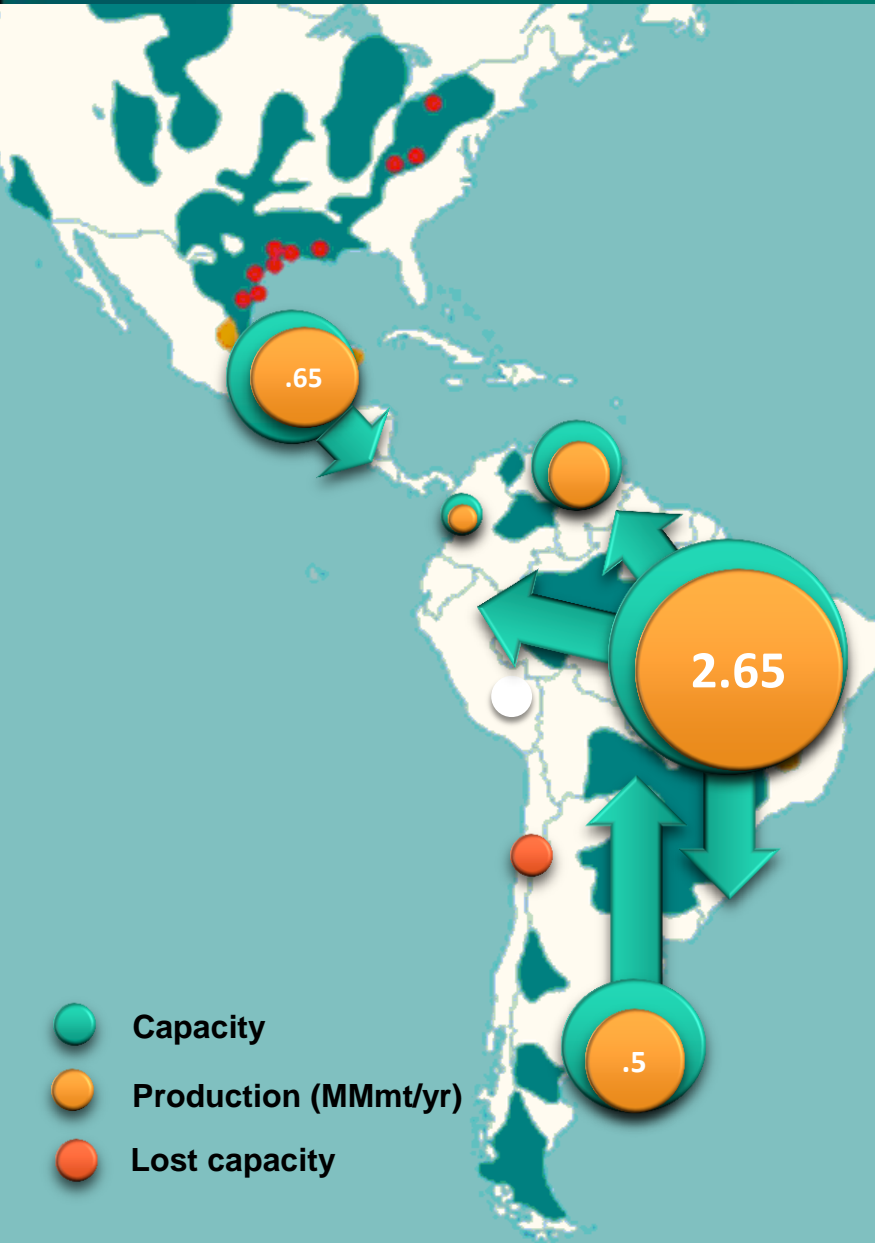
Source: IMF Survey, October 10, 2014

- Volatility in crude/energy prices has hit polymer markets and creates a mood of uncertainty
- Weaker currencies relative to the US dollar across the region, have made imports unattractive
- For the buyer, access to credit; for seller, collection issues, as delinquency rates go up
- Protectionism/anti-dumping measures
- Political instability in Argentina, Brazil, Venezuela

Strong USD makes imports unattractive

Brazilian real vs. US dollar





- Nearly every country is net-short polyethylene
- Bulk of regional production is concentrated in 3 countries: Brazil, Argentina and Mexico
- Biggest markets by demand: Brazil, Mexico, Argentina
- Fastest-growing markets: Colombia, Peru, Chile
- Braskem (Brazil) is the regional powerhouse, with more than 3 million mt/yr of PE capacity



Mexico

Source: Indelpro **Location:** Altamira
Capacity: 590,000 mt/yr **Integrated:** No

Colombia

Source: Propilco **Location:**Cartagena
Capacity: 455,000 mt/yr **Integrated:** Yes

Venezuela

Source: Propilven **Location:** Zulia
Capacity: 110,000 mt/yr **Integrated:** Yes

Brazil

Source: Braskem **Location:** Various
Capacity: 2 million mt/yr **Integrated:** Yes

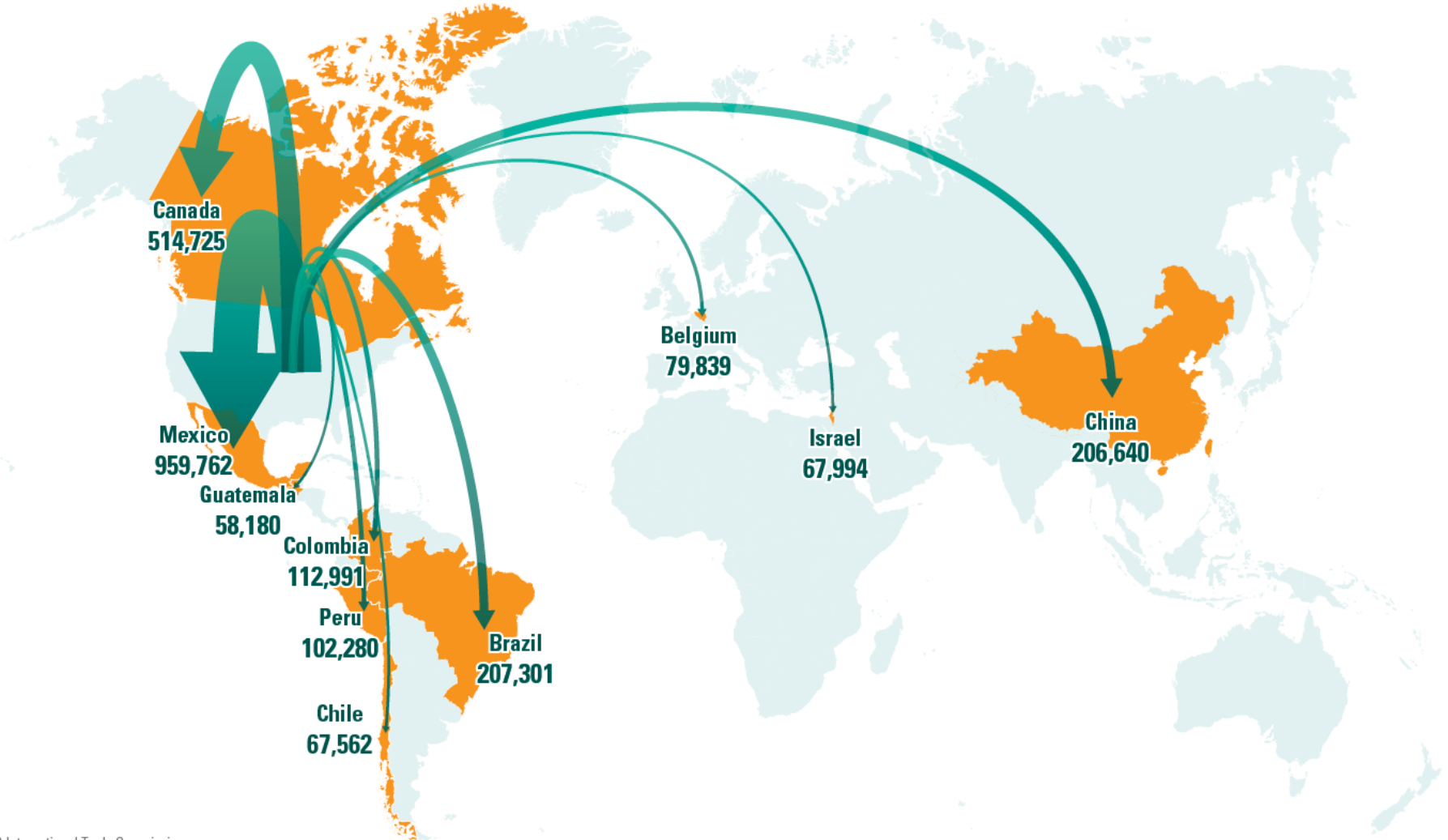
Chile

Source: Petroquim **Location:** Hualpen
Capacity: 120,000 mt/yr **Integrated:** No

Argentina

Source: Petroken, Cuyo **Location:**Various
Capacity: 320,000 mt/yr **Integrated:** No

Region will continue to crave US PE...



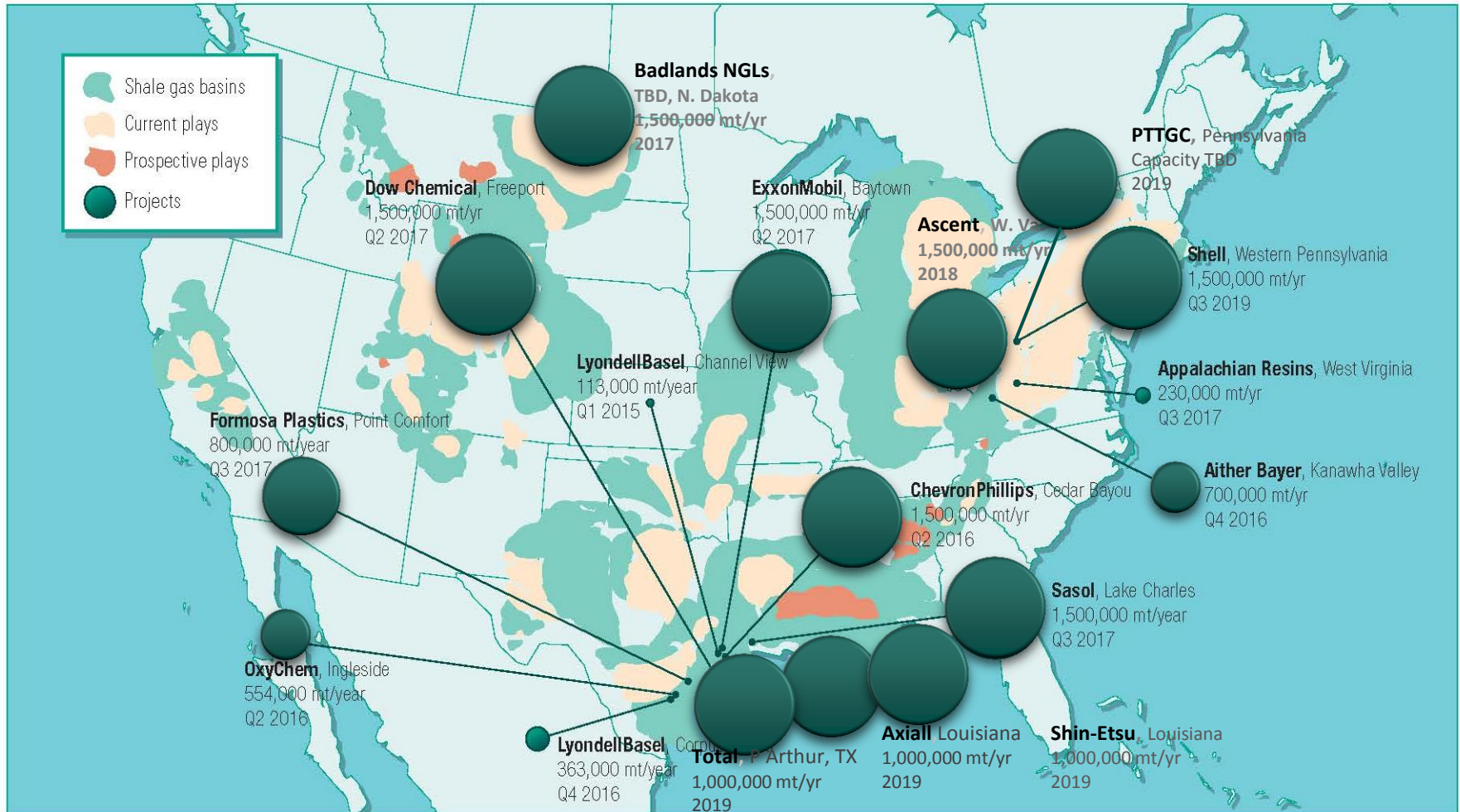
Source: US International Trade Commission

...Because projects are lagging



Source: Company announcements, Platts

US bets on expansions, exports



Source: EIA, Platts

Ethylene 'boom' nears: 2018

Company	Location	,000 t/yr	Startup
Dow Chemical	Texas	1,500	H2 2017
ExxonMobil Chemical	Texas	1,500	H2 2017
Chevron Phillips Chemical	Texas	1,500	H2 2017
Formosa Plastics CUSA	Texas	800	H2 2017
Sasol	Louisiana	1,500	H2 2017
Occidental/Mexichem	Texas	550	H2 2017
Appalachian Resin	W. Virginia	250	2018
Aither Chemical/RMG	W. Virginia	200-300	2018
Badlands NGLs	N. Dakota	1,500	2018
Ascent (Odebrecht-Braskem)	W. Virginia	1,000-1,500	2019
Axiall	Louisiana	1,000	2019
Shin-Etsu (Shintech)	Louisiana	1,000	2019
Total Petrochemicals	Texas	1,000	2019
PTTGC	Pennsylvania	N/A	2019
Shell Chemical	Pennsylvania	1,000-1,500	2019

Source: Company announcements, Platts

CENTRAL & SOUTH AMERICA *for* POLYETHYLENE

Capacity, Production and Demand Outlook

To what extent would the new U.S. PE capacity affect Asia's exports to Central and South America?

For more information visit:
www.platts.com/ppa

U.S. Demand & Production 2014/2023



Central and South America Demand & Production 2014/2023



PE Expansion Projects Through 2022

Project	Startup
1 Etileno XXI	2015
2 Olefinas III	2019
3 PIS	2019
4 Comperi	2020+
5 Bolivia	2022

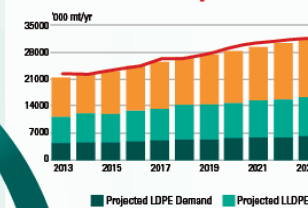
★ 600,000 mt/yr ★ 1,000,000 mt/yr

Asia Imports

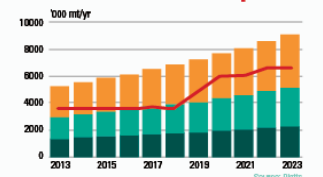
Peru has the highest import share from Asia at 22.6%, for 60,000 mt.

Thailand and Korea are the two largest Asian PE exporters to Central and South America.

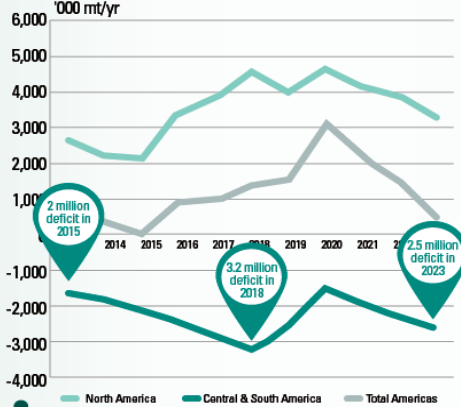
Americas to be Balanced by 2023



Central & South America PE Deficit to Attract Imports

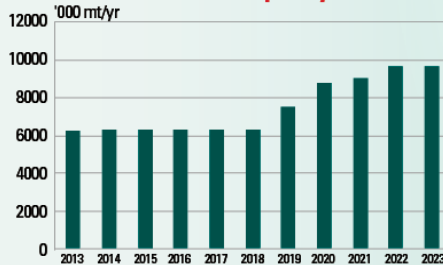


Polyethylene Surplus/Deficit Through 2023



Central and South America can absorb some, but not all, of that surplus

South America PE Capacity 2013/2023



Did You Know?

Brazil
The country is the biggest importer by volume, but less than 9% of that PE comes from Asia.

Chile
It is expected to have the largest LLDPE deficit in the region at 755,000 mt/yr by 2023.

North America
PE surplus to peak at 3.5 million mt/yr in 2017

Mexico
Despite Etileno XXI, it will remain a net importer, with deficits climbing to 1.6 million mt/yr by 2023.

● Demand '000 mt/yr
● Production '000 mt/yr
● Platts Key Assessment Hubs

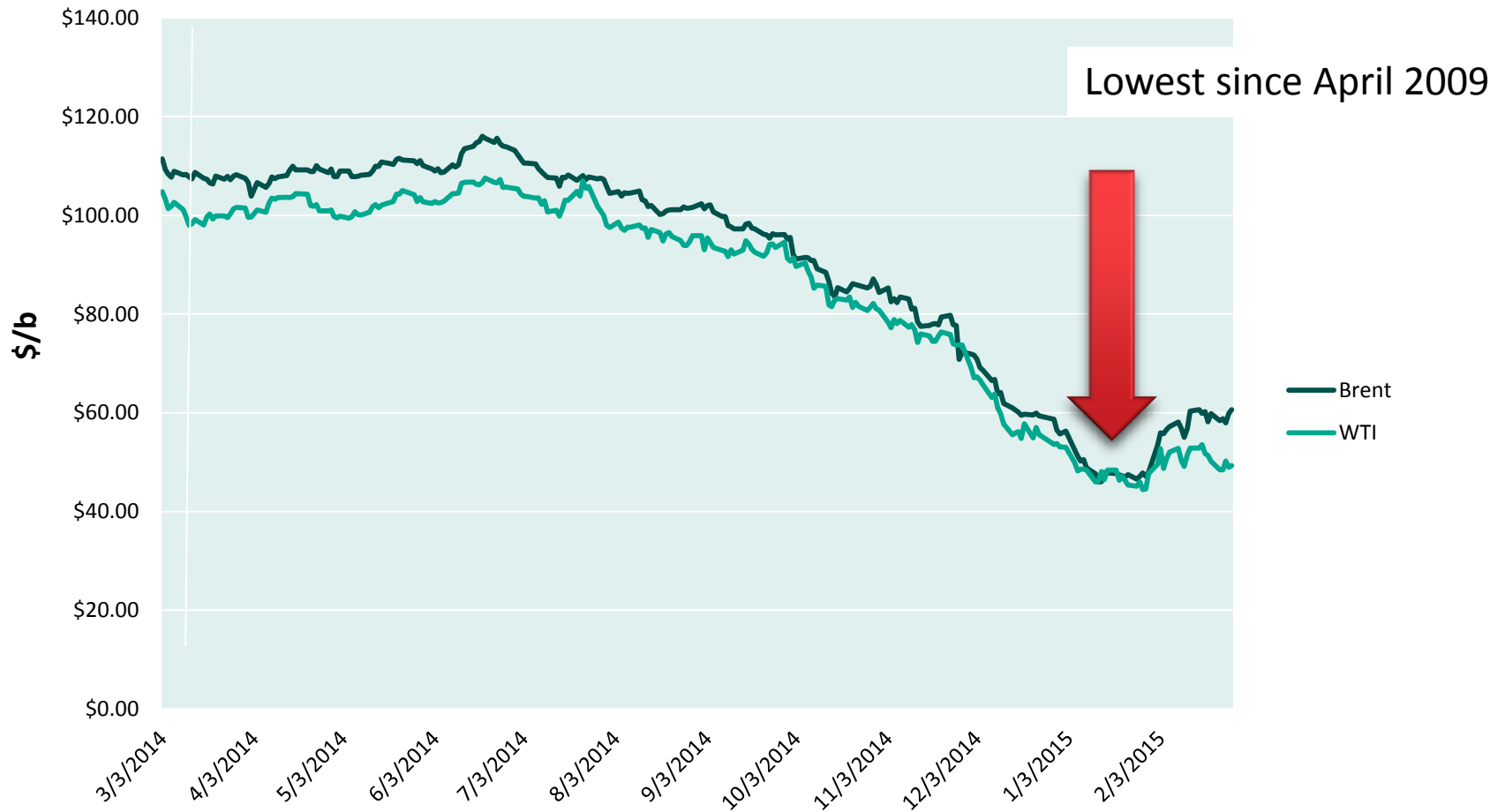
→ Imports
→ Exports

Argentina's LDPE deficit to grow to 237,000 by 2023.

Latin polymers in a world of \$50/b oil

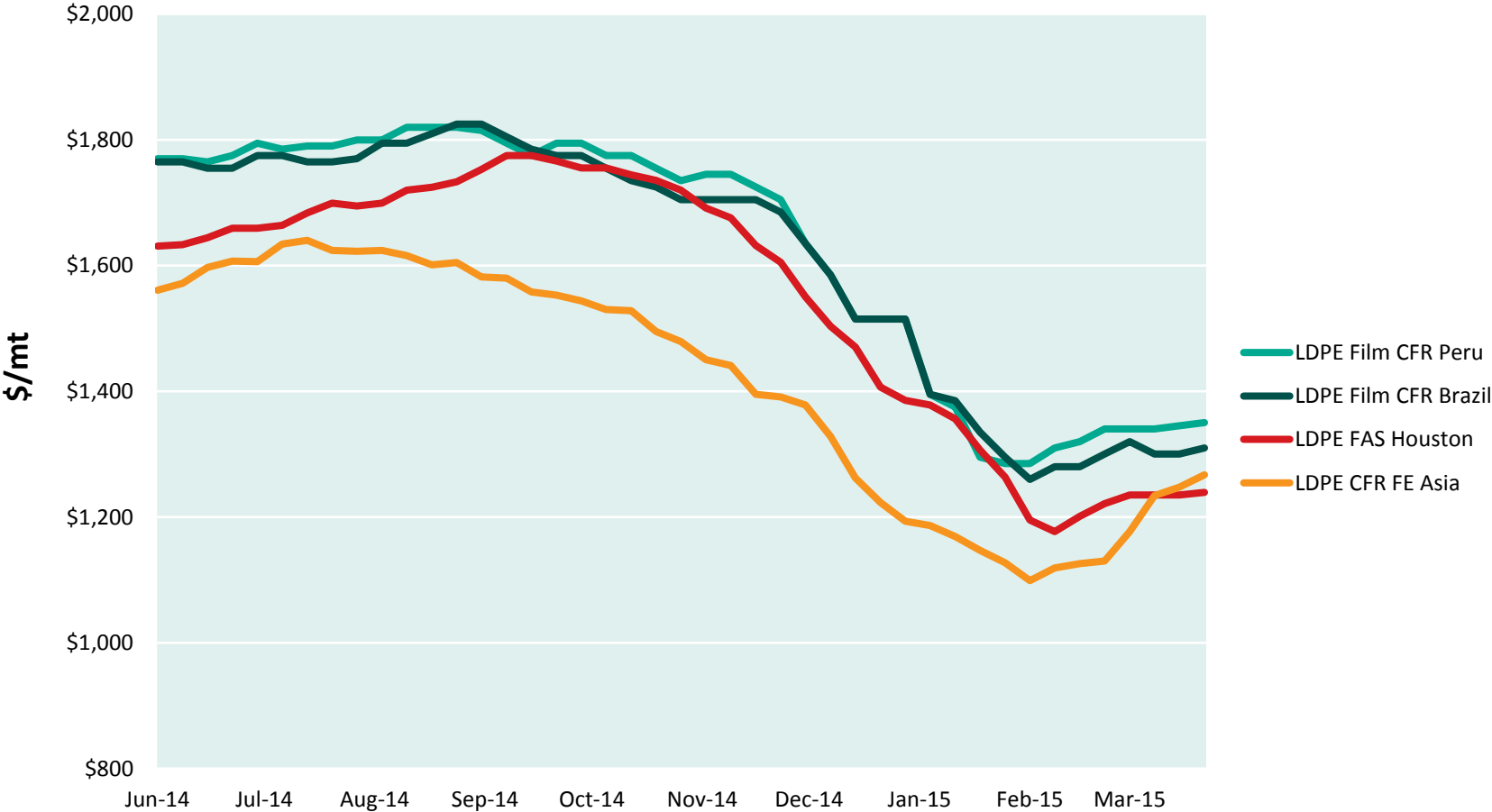
Lower crude and natural gas have yielded steep drops in the pricing of imported resin, but volatility, economic concerns have hindered trade in key markets

Brent, WTI since March 2014



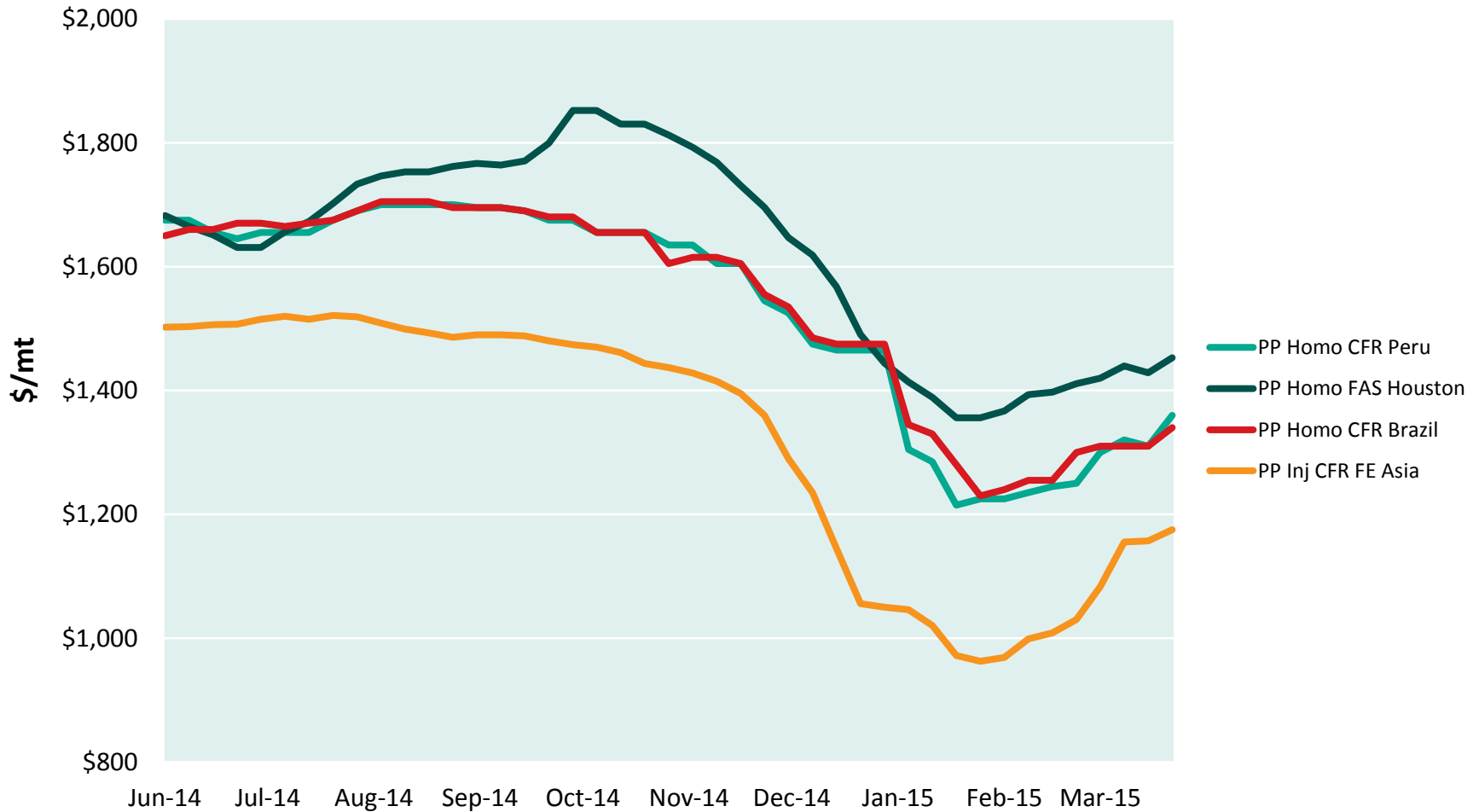
Source: Platts

Peru LDPE: Down 23% year on year



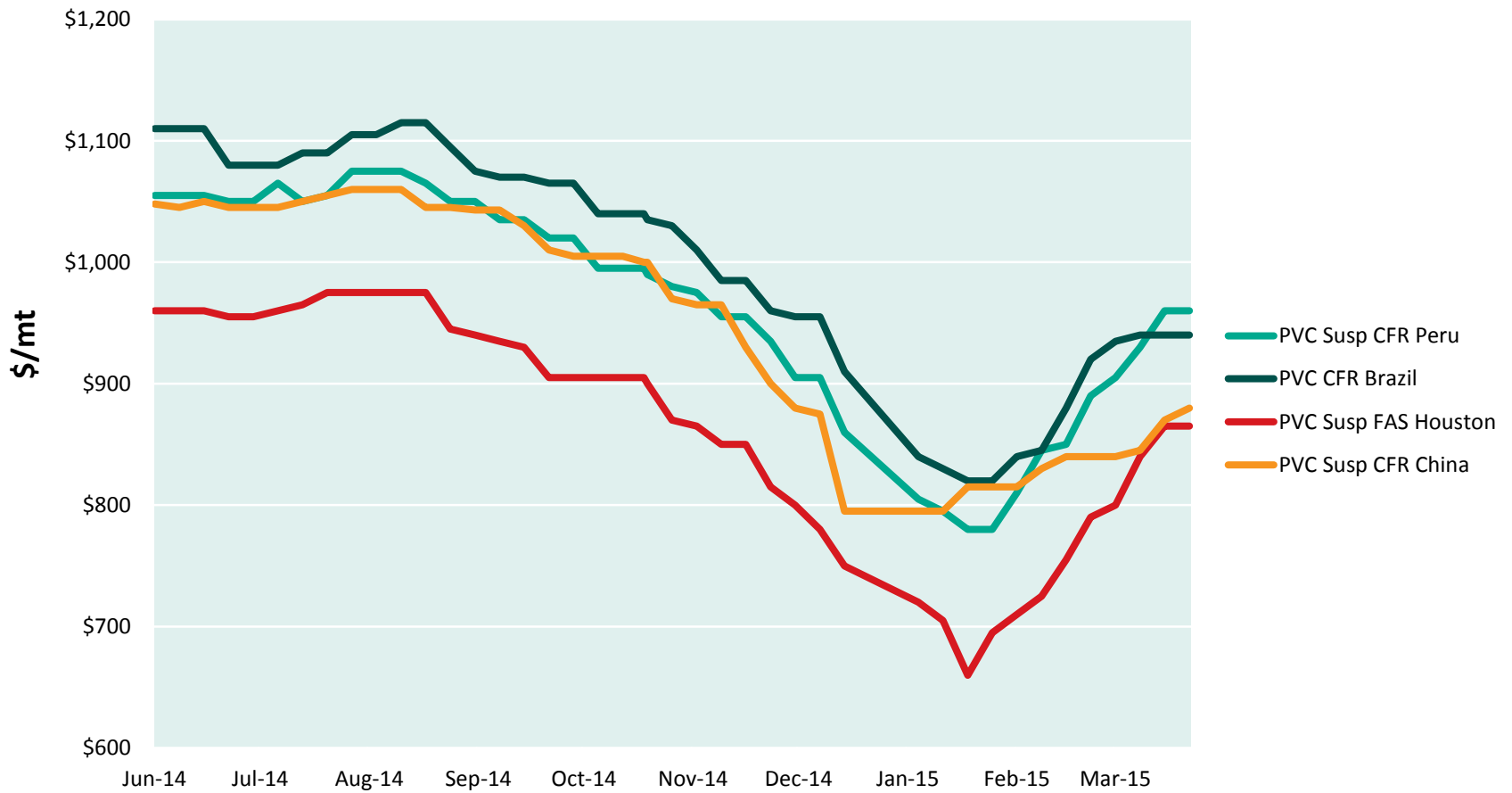
Source: Platts

PP imports track Asia pricing



Source: Platts

In PVC, US has more influence



Source: Platts

- Long term. North American producers look to enjoy feedstock advantage in region (naphtha vs. ethane)
- Demand centers are in close proximity
- Plastics usage remains low – room for growth
- Free-trade agreements with key countries in place
- Major expansion projects in the region lagging

- Volatility in crude/energy prices has hit polymer markets and fostered a mood of uncertainty
- Weaker currencies relative to the US dollar across the region have made imports unattractive
- For the buyer, access to credit; for seller, collection issues, as delinquency rates go up
- For seller and buyer, logistical, network constraints affecting major markets, including Brazil
- Protectionism/anti-dumping measures
- Political instability in Argentina, Brazil, Venezuela



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Thank you! Obrigado! Gracias!

Let's stay in touch regarding the markets

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