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The Global Fertilizer Supply Chain and Market Outlook

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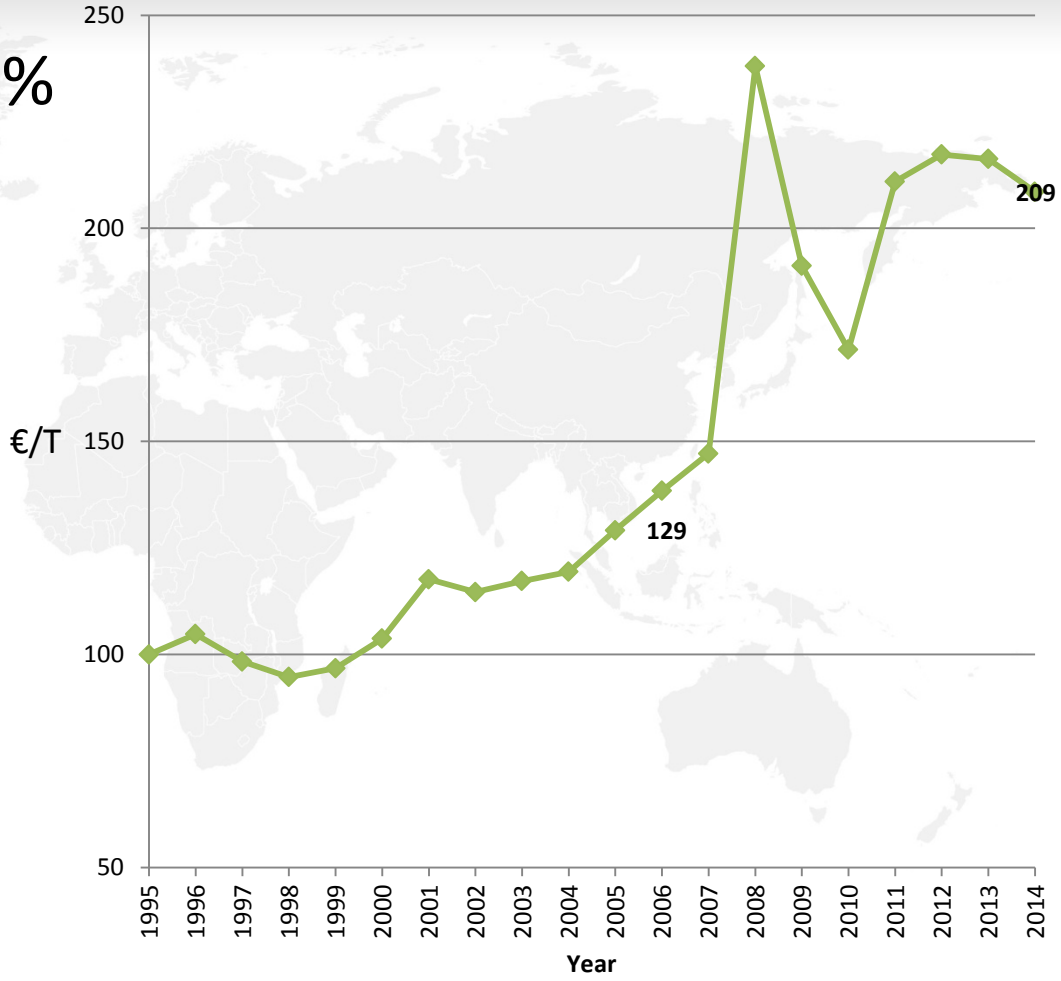
Outline

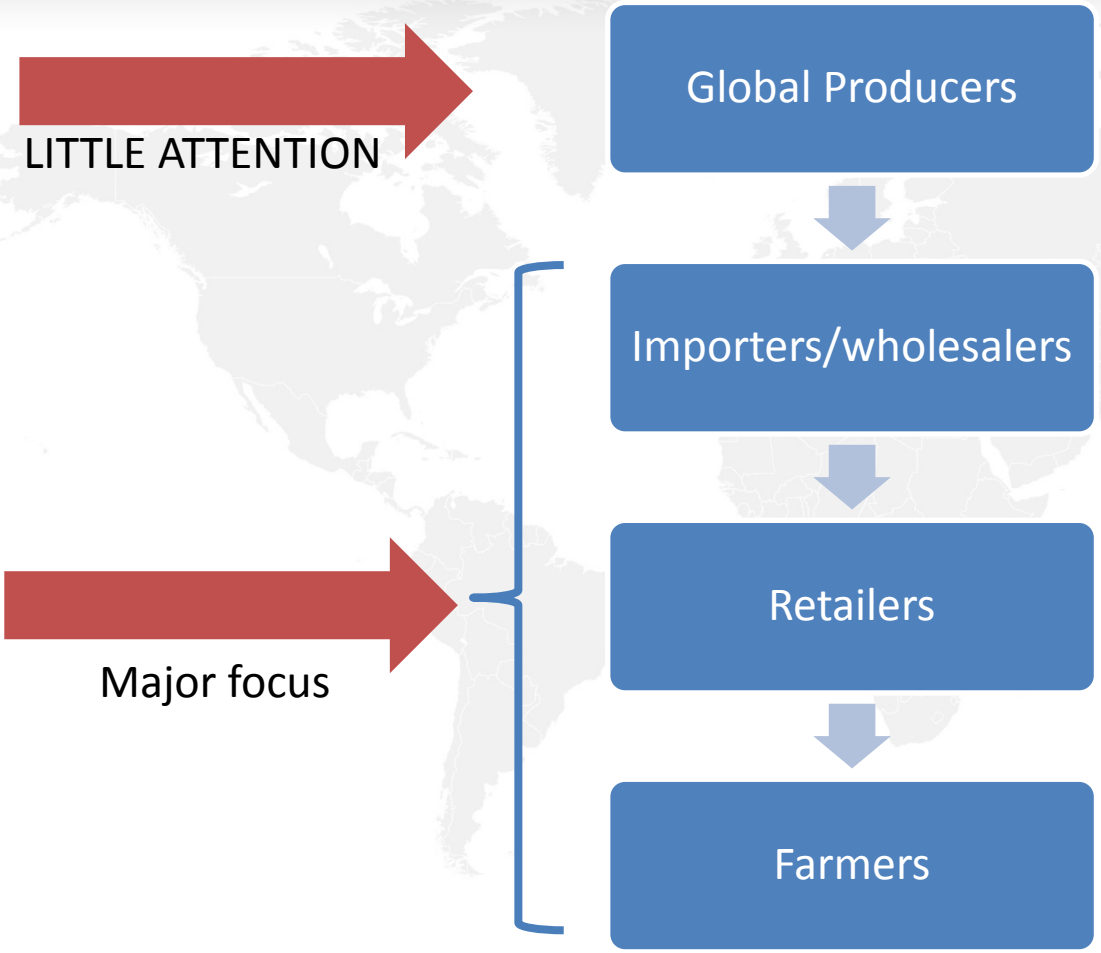
- Origins of fertiliser nutrients
- The supply chain
- Selection of NPK for compounds
- Factors affecting prices
- Price outlook

Fertiliser price out of synch

- Farm output € – up 25%
- Fertiliser € – 100%
- Up 62% in 10 years
- 1995
  - CAN €155/T
  - Barley €121/T (1.3T)
- 2015
  - CAN €320/T
  - Barley €130/T (2.5T)



The Fertiliser Supply chain



Highly concentrated:
Market power exertion?

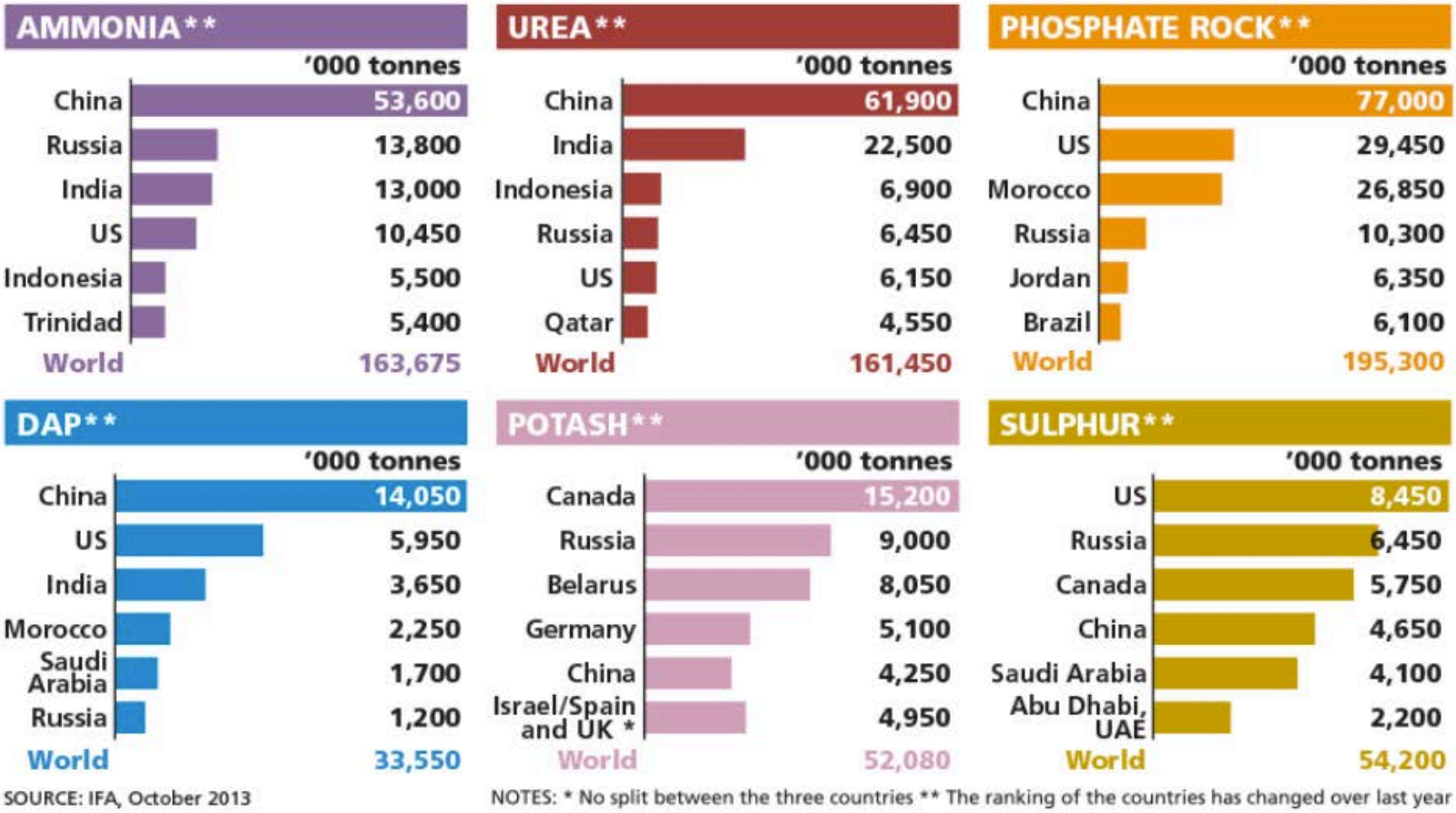
Poor dealer network,
late irregular deliveries,
high transportation costs,
credit constraints,
lack of market information

Low/moderate use
vrs no use. Why?

Blends - sources

- N – CAN, AN, Urea
- P – DAP, TSP, MAP
- K – MOP, SOP
- S – SOP

Worlds major producing countries



Worlds major producing countries

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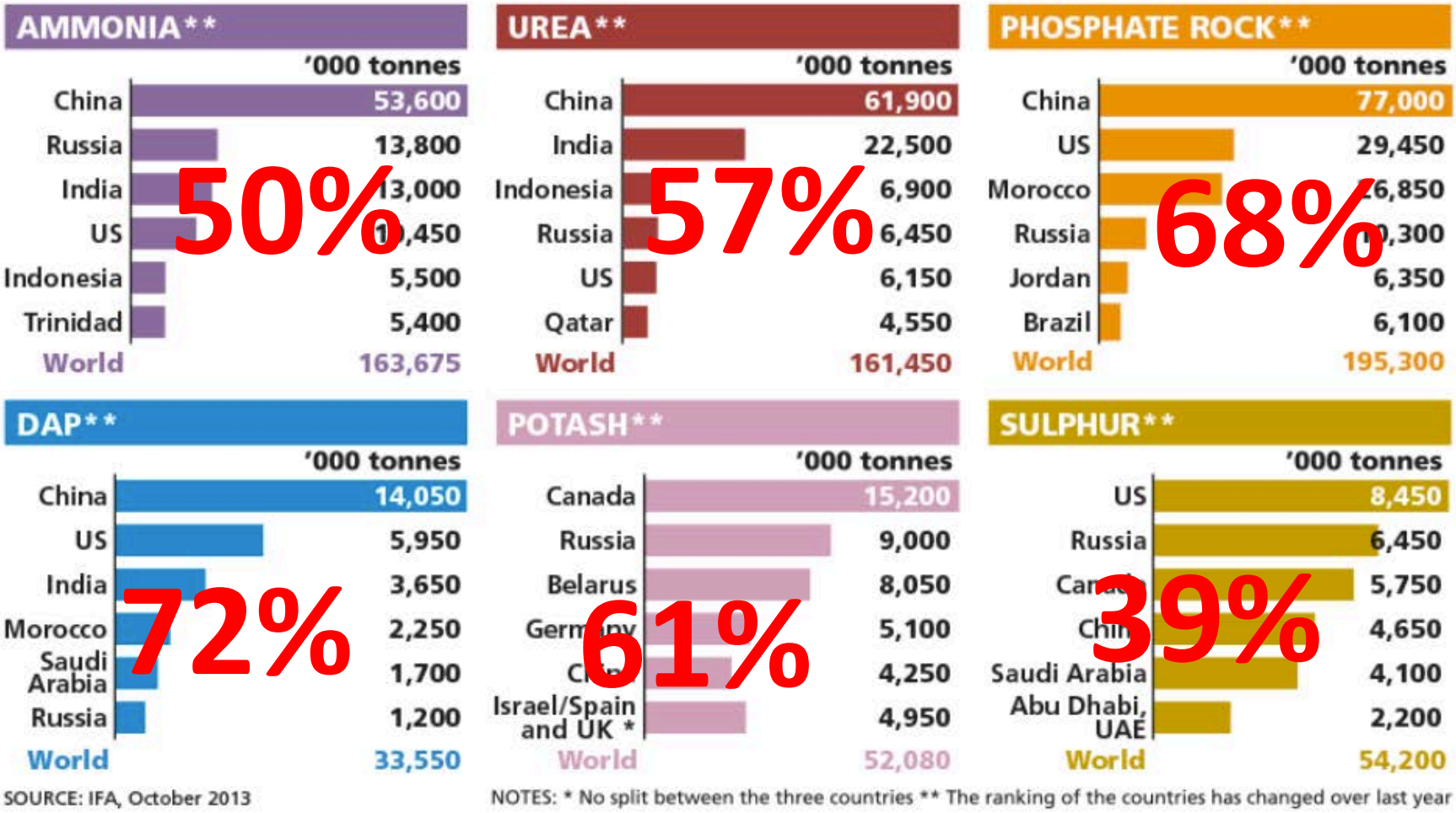
TOP 3 control more than 50% of all supply



EU Suppliers and sources

Urea	Egypt	Yara, Helm
Potash	Germany, UK	K+S, ICL
DAP	Morocco	OCP
CAN	DE/FR/UK/Norway	Yara, OCI
CAN*	Russia	Uralchem

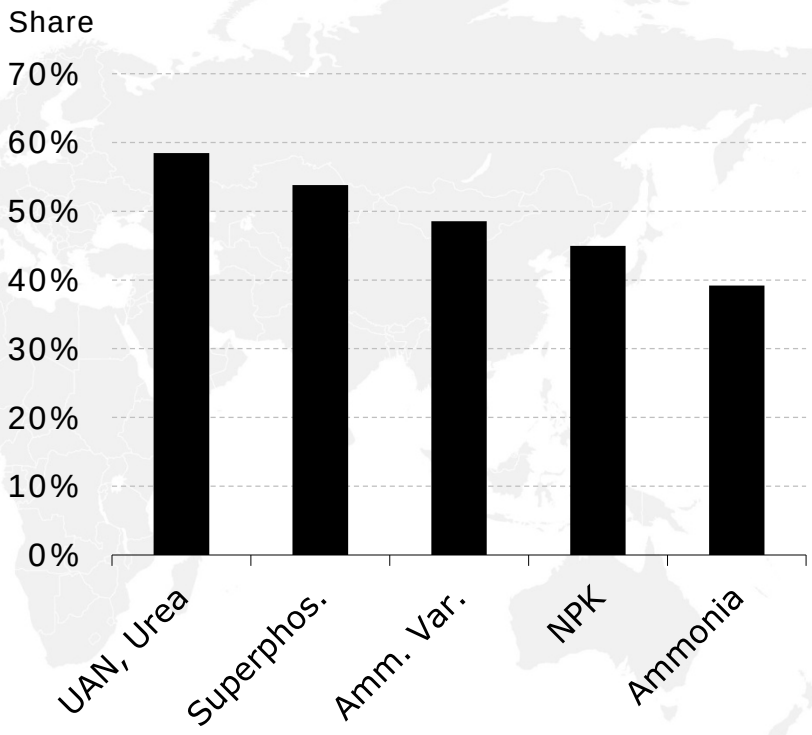
The global supply chain

- Complex
- Geopolitical
- Macro-economic
- Trade barriers
- Other commodity sectors
  - Energy
  - Mining

Production within EU is concentrated

- Production is
  - Capital intensive
  - Subject to large economies of scale
  - This naturally leads to high producer concentration
- 159 fertiliser manufacturing sites in EU-27
  - Seven largest producers account for 93% of ammonium nitrate capacity in Western Europe
  - Ammonia production in Germany and Poland are highly vertically integrated with Urea production

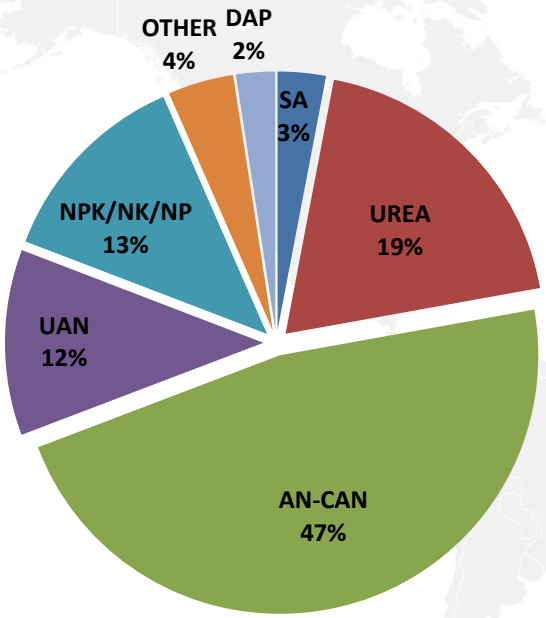
- Share of EU capacity held by 4 largest EU producers



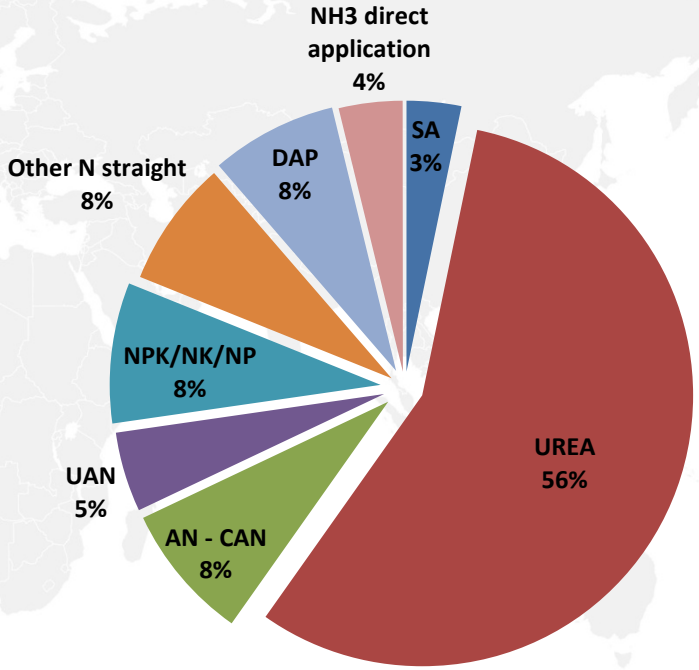
- Source: EU Commission

The Nitrogen Market

EU 27
10 million tons of N



World
100 million tons of N

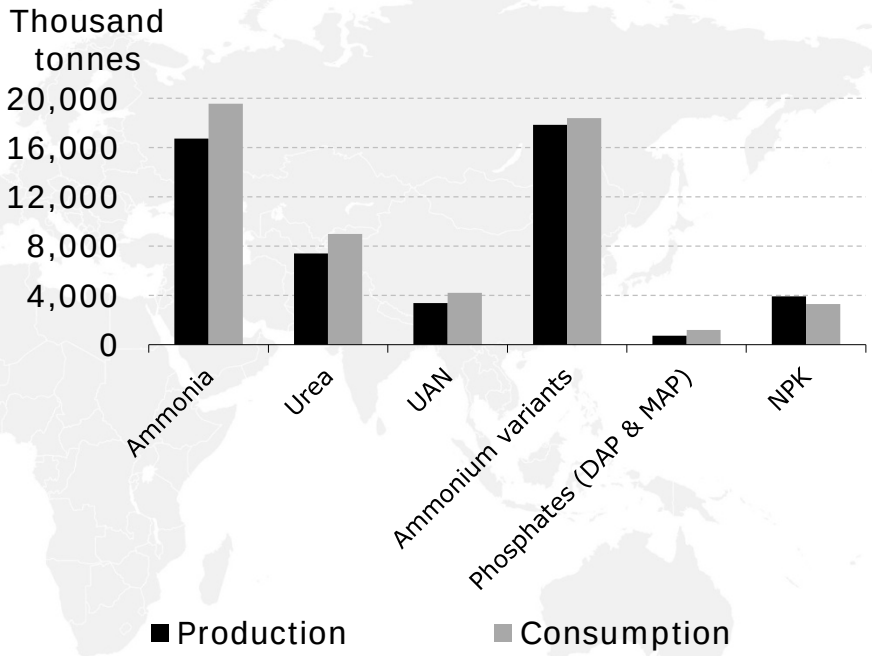


EU is a nitrates market while the world is a Urea one

EU is dependent on imports

- Ammonia, Ammonium variants, and Urea are consumed in large quantities within the EU
- NPK, UAN, and superphosphates in lower quantities.
- Production does not cover consumption within the EU
  - On average only 88% of EU fertiliser consumption is supplied by EU production

- **EU production and consumption 2011**

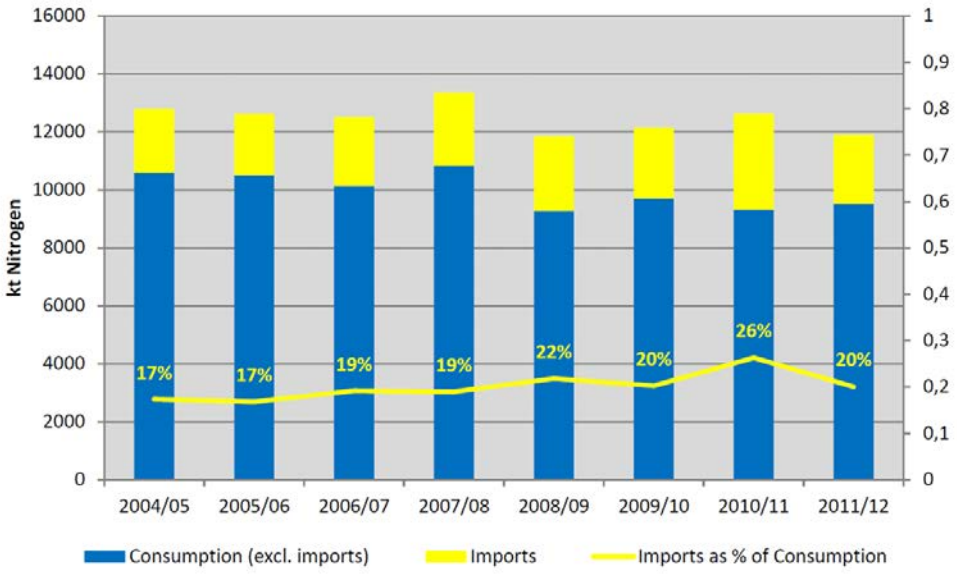


- Note: NPK includes NPK, NP compounds and PK compounds
- Source: CRU Fertilizer Market Outlooks 2013, IFA, FAOstat

Nitrogen - Imports needed

- Excess demand in the EU is covered by imports
- Imports of fertilisers containing nitrogen is stable around 20 per cent of consumption
- Mid-term projections predict EU consumption to be basically constant

- Import share of Nitrogen fertilisers in EU-27



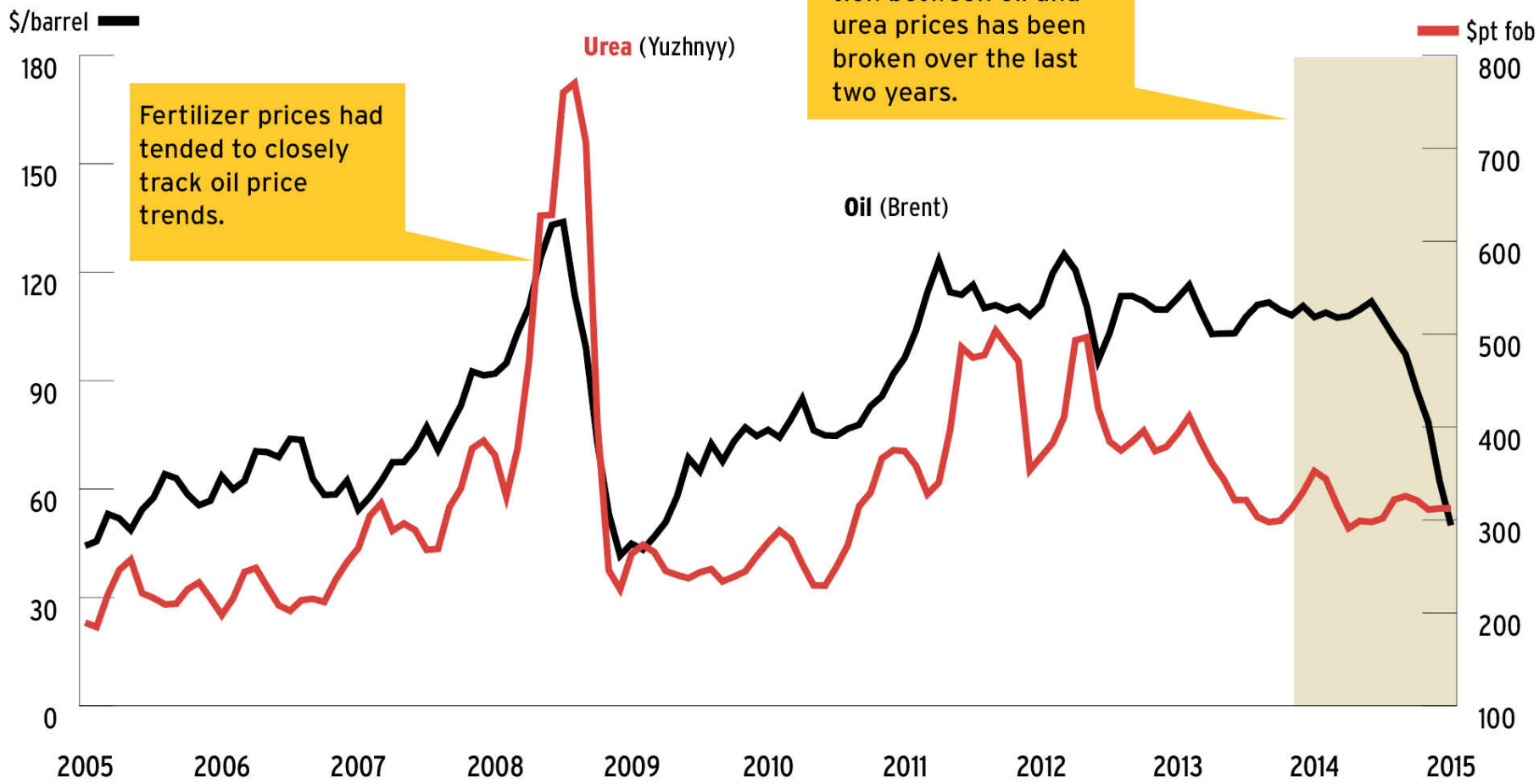
- Note: Consumption includes both agriculture and technical use of nitrogen containing fertilisers
- Source: Fertilisers Europe 2012 Overview

Factors impacting prices

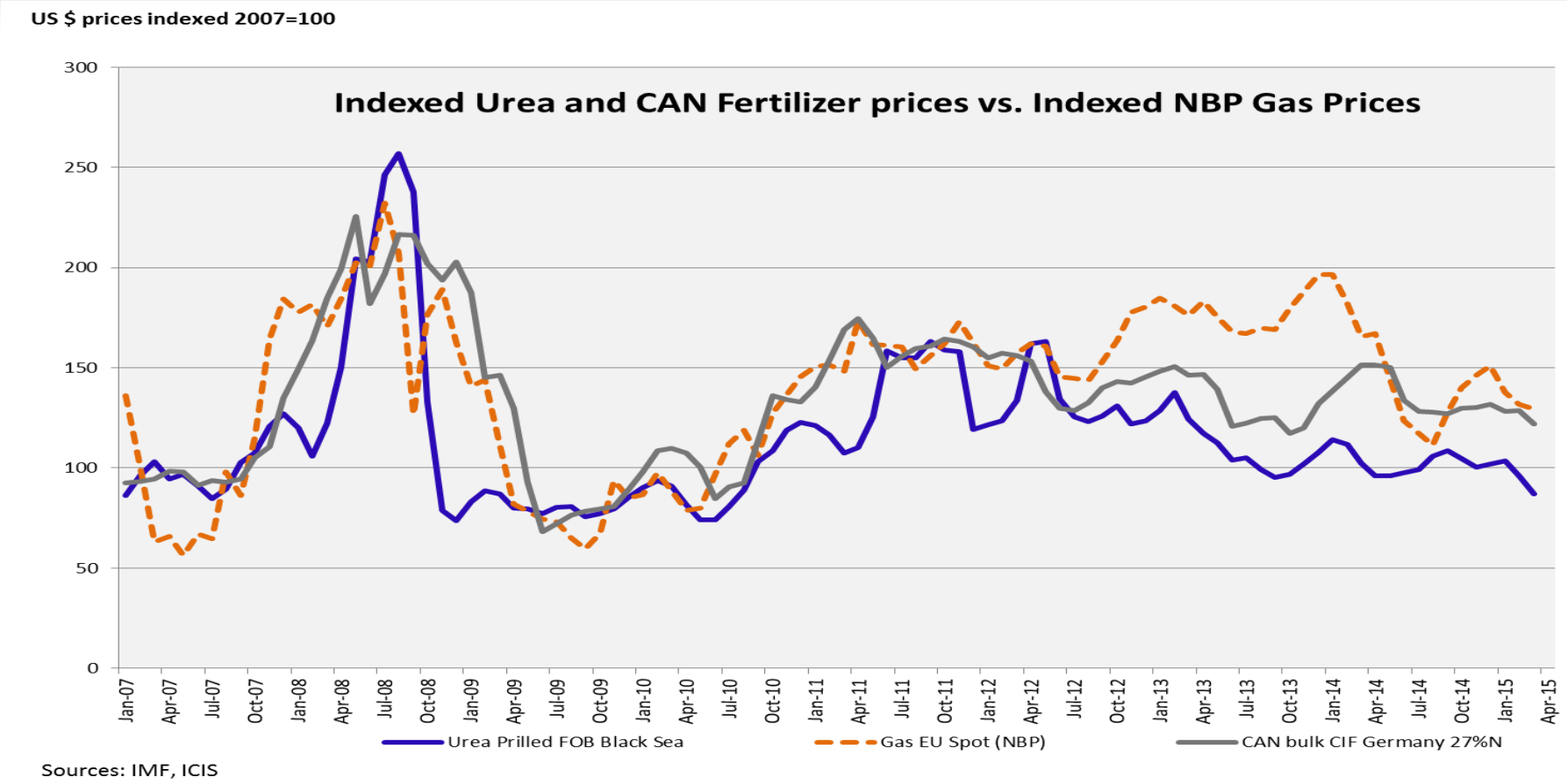
- Supply demand balance
- Currency
- Gas Prices
- Grain Prices – 68% arable/24% grass in EU
- EU Policy

Factors impacting price - oil

Figure 1
Oil and urea prices from 2005 to 2015

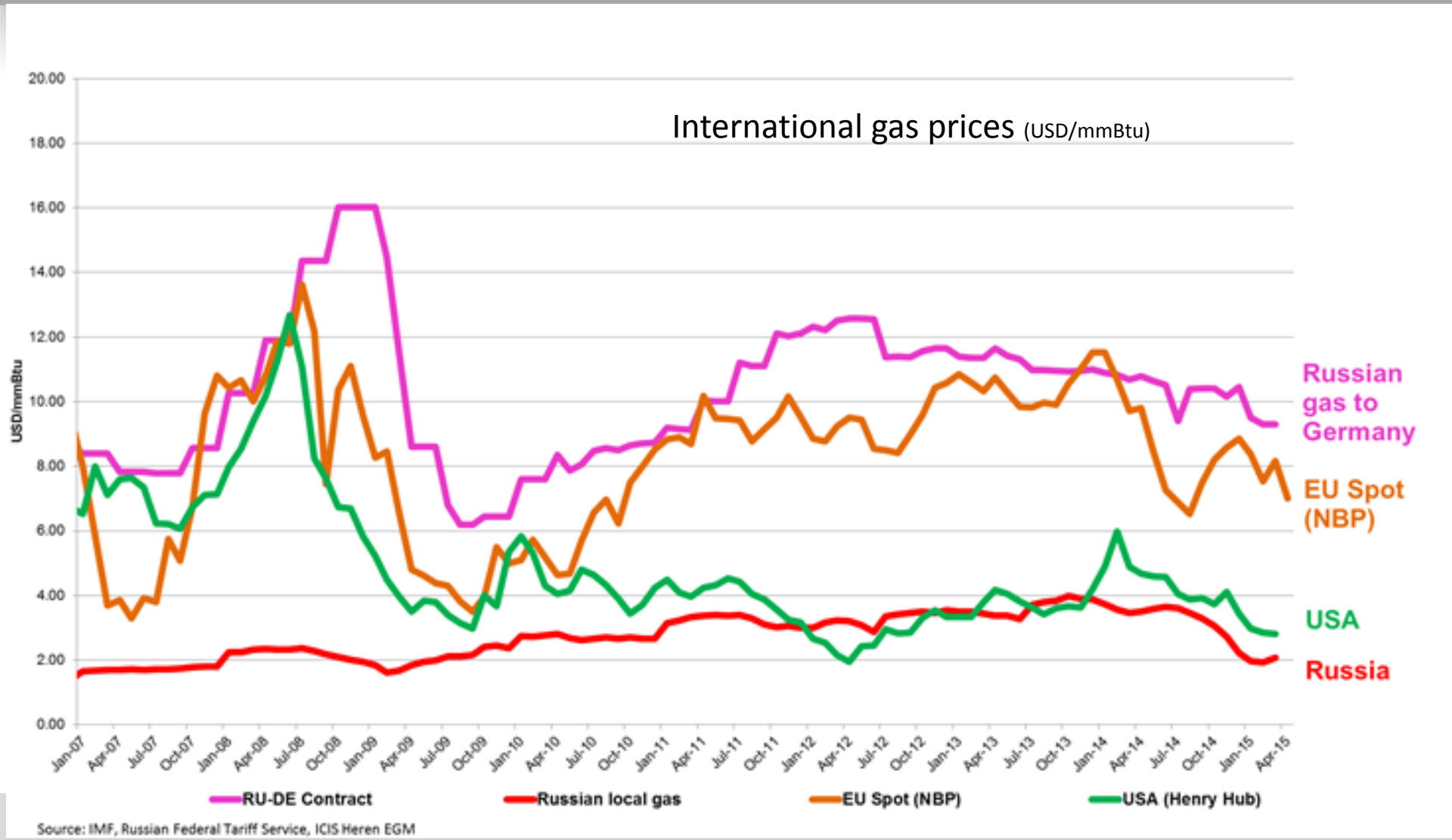


Factors impacting price - gas



Sources: IMF, ICIS

EU gas is expensive



Source: IMF, Russian Federal Tariff Service, ICIS Heren EGM

Factors impacting price - currency

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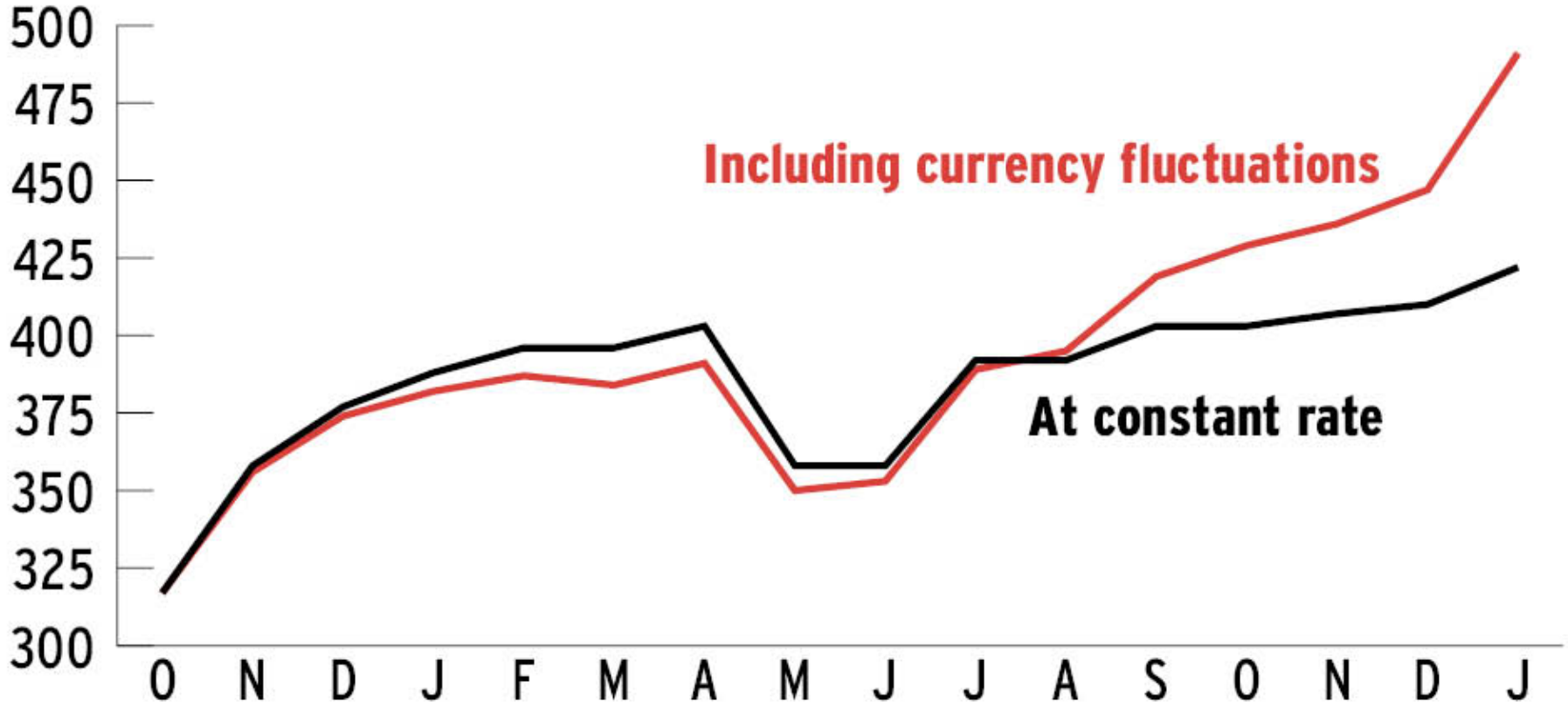
Figure 5

Effect of weak euro on DAP (€/t, last 15 months)



Factors impacting price - currency

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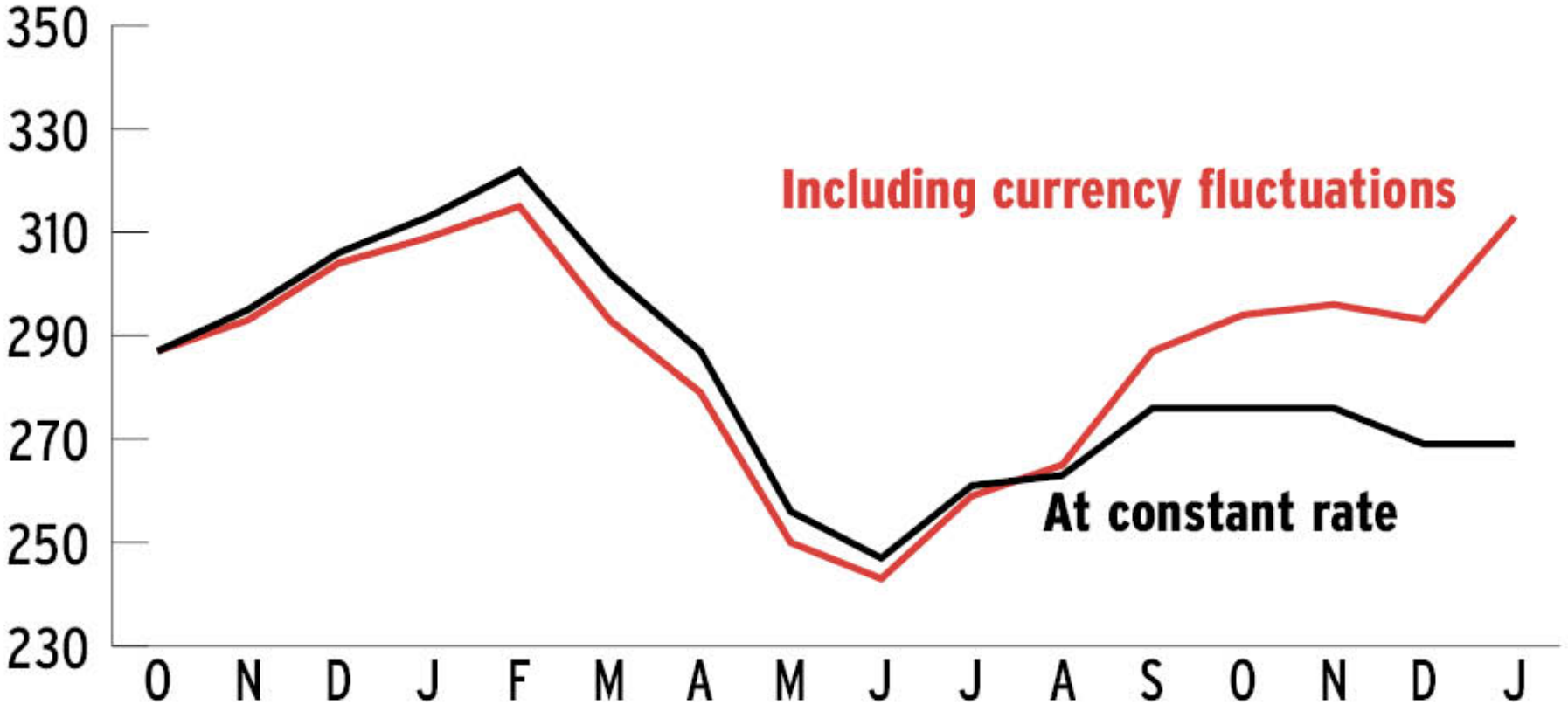
Figure 6

Effect of weak euro on urea (€/t, last 15 months)



5 year outlook

- Invest $ 125bn
- 235 new units
- 1.4 m people are employed in the industry worldwide
    - 45,000 new direct jobs
    - 95,000 new indirect jobs

Nitrogen Outlook

- Supply growth to exceed growth in N demand during the next 5 years
- Supply surpluses would accelerate from 10mT N in 2016 to 18m T in 2019
- New ammonia capacity in East Asia and African
- Industrial demand expected to increase 28% compared to 6% in fertiliser N

Nitrogen Outlook - Urea

- Urea - 55% going to 70%
- New Urea capacity (East Asia, Africa and North America)
- 60 new units (20 located in China)
- In countries well endowed with natural gas
- Capacity to increase by 4% per year
- 2019 before comes on stream
- Surplus – 4% of potential supply

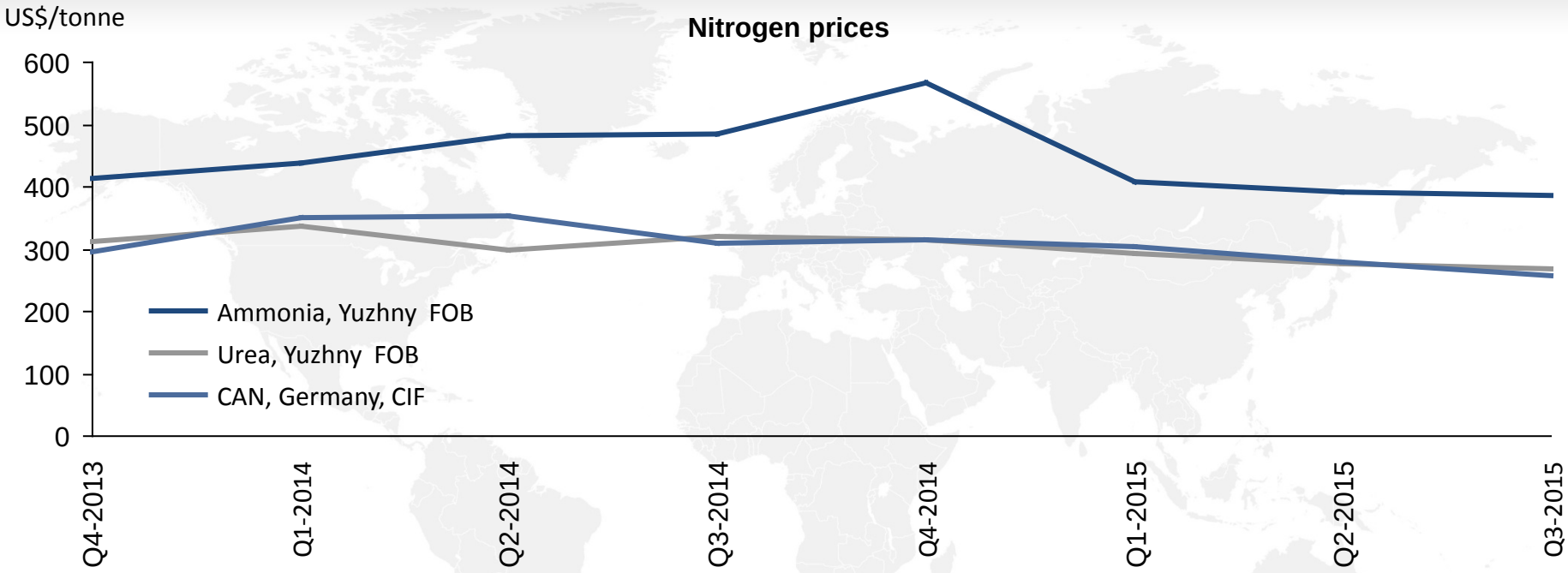
Phosphate Outlook

- Rock supply to grow 16%
- Massive capacity expansions
- 30 new units
- Export orientated
- 80 % - Morocco, Saudi Arabia, Jordan China
- Surplus – 4% of potential supply

Potash Outlook

- Supply will increase 16%
- Major Brownfield projects planned
- 4 new mines
- 2008 started – take a long time to come on stream
- Canada, Russia, Belarus -70% of growth
- Short term equilibrium moving towards a growing surplus in the longer term
- Surplus – 18% of potential supply (14%)

Global Nitrogen Prices have weakened



Nitrogen prices (US$/tonne)

	Q4-2013	Q1-2014	Q2-2014	Q3-2014	Q4-2014	Q1-2015	Q2-2015	Q3-2015
Ammonia, Yuzhny FOB	414	438	483	485	567	410	392	386
Urea, Yuzhny FOB	312	338	298	321	316	294	276	269
CAN, Germany, CIF	295	350	352	309	316	304	278	257

Source: ICIS, Integer

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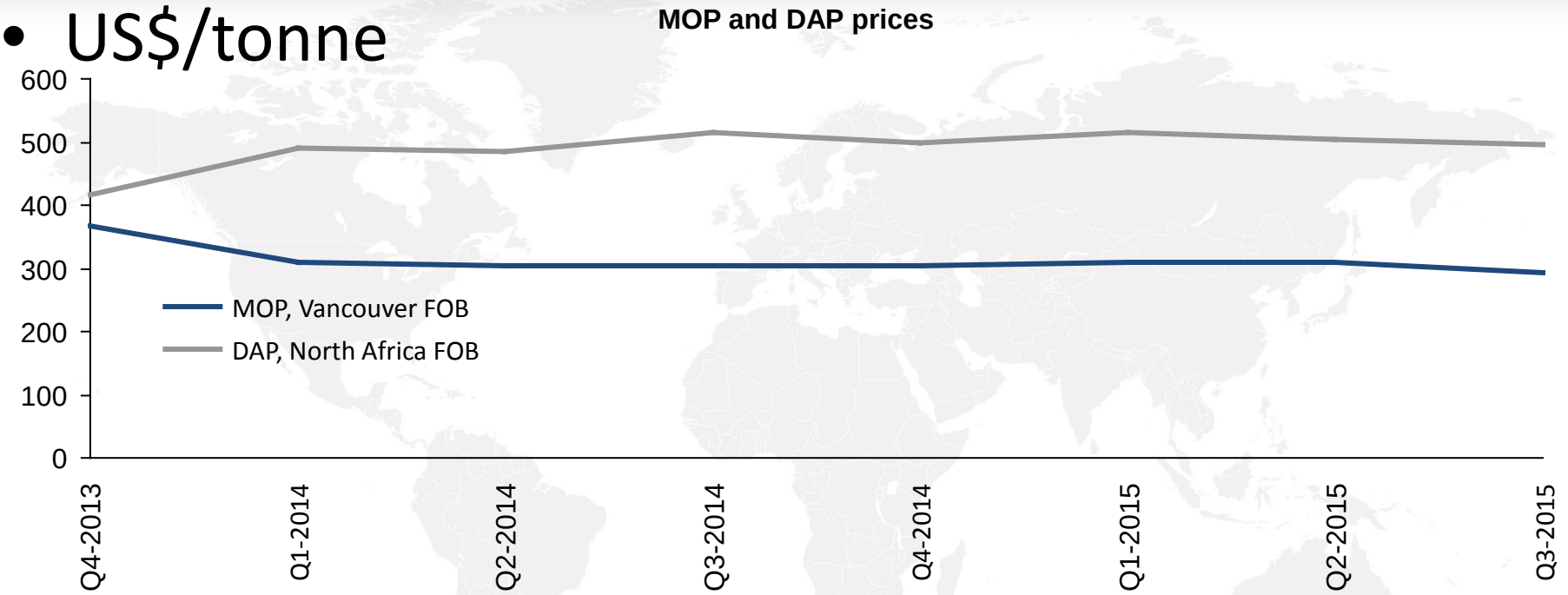
MOP and prices weaker, DAP prices increased

- US$/tonne



MOP and DAP prices (US$/tonne)

	Q4-2013	Q1-2014	Q2-2014	Q3-2014	Q4-2014	Q1-2015	Q2-2015	Q3-2015
MOP, Vancouver FOB	368	310	305	305	305	310	309	293
DAP, USG FOB	415	490	484	516	500	515	505	497

Source: ICIS, Integer

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Summary

- Weak € is single biggest factor driving current prices
- EU is a CAN market – niche
- Arable crops drive demand and prices
- Gas accounts for 80%
- N – strong increases unlikely
- P – price is high
- K – watch evolution of grain prices
- Caution – volatile - little and often

Source: Integer