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5th International Whey Conference

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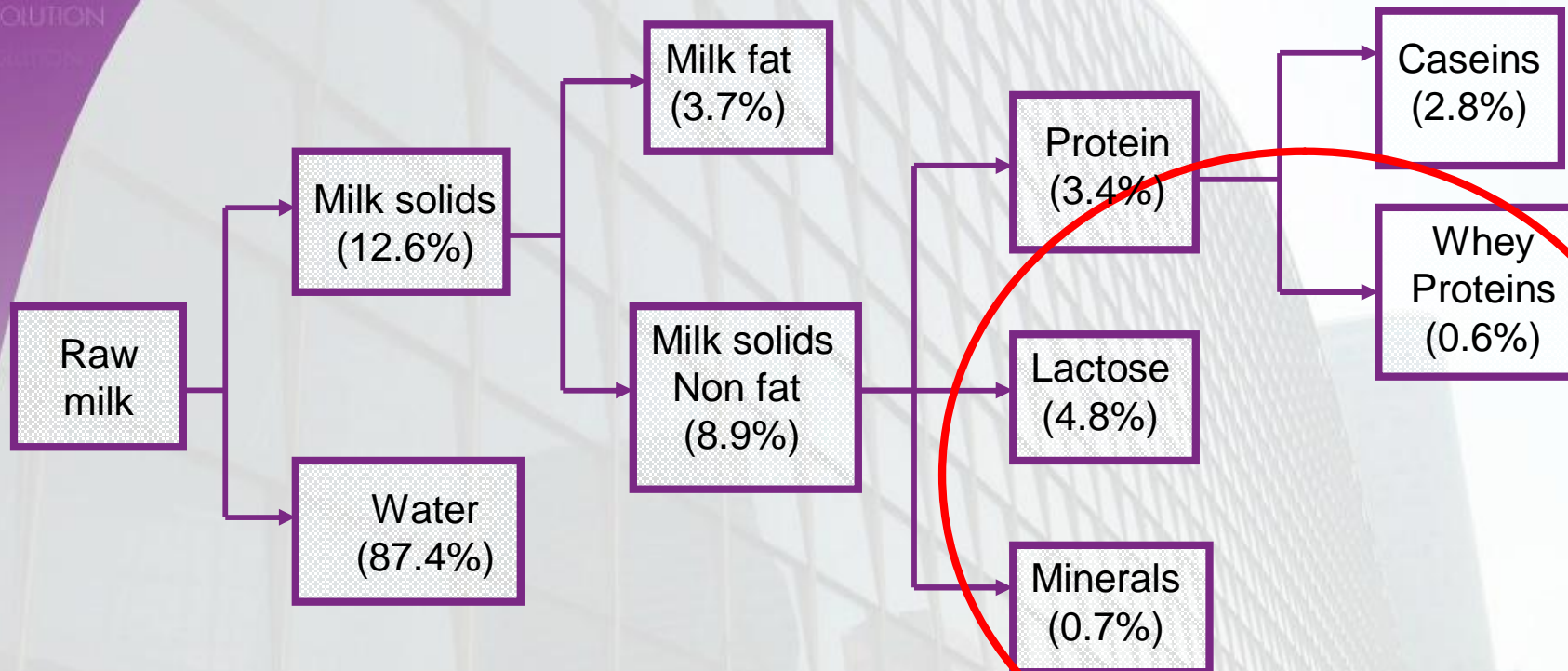
The Whey market: Mechanism of supply and pricing

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The Netherlands



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Important components of whey processing





Filtration and cristallisation are main process techniques

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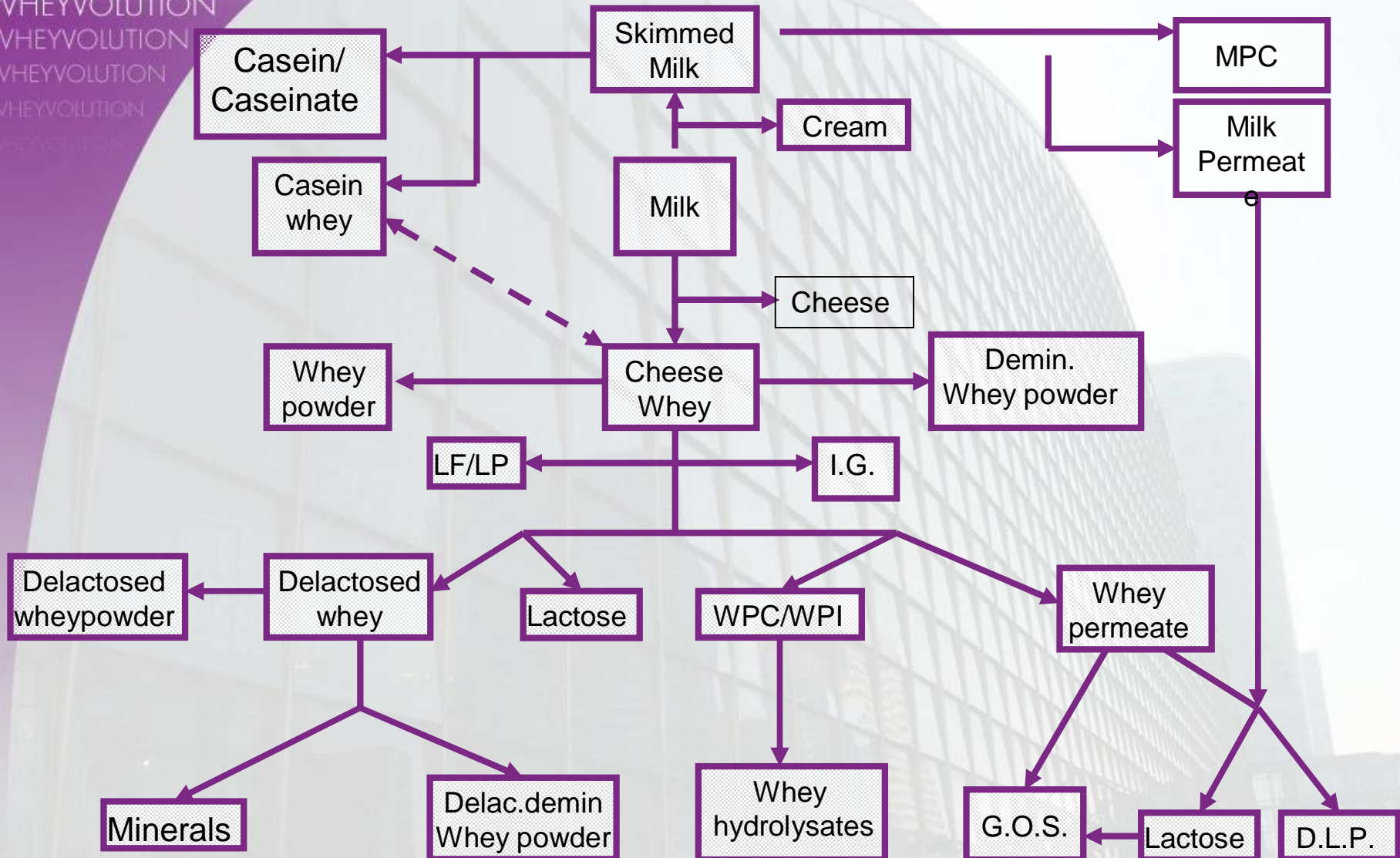
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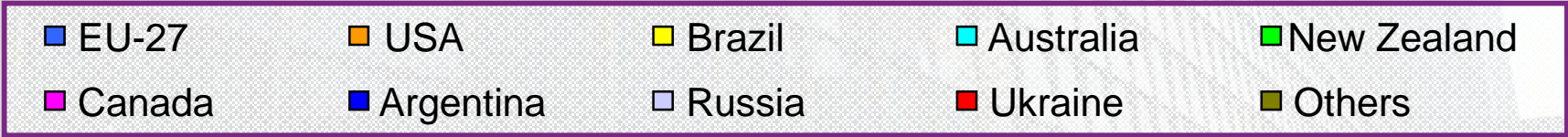
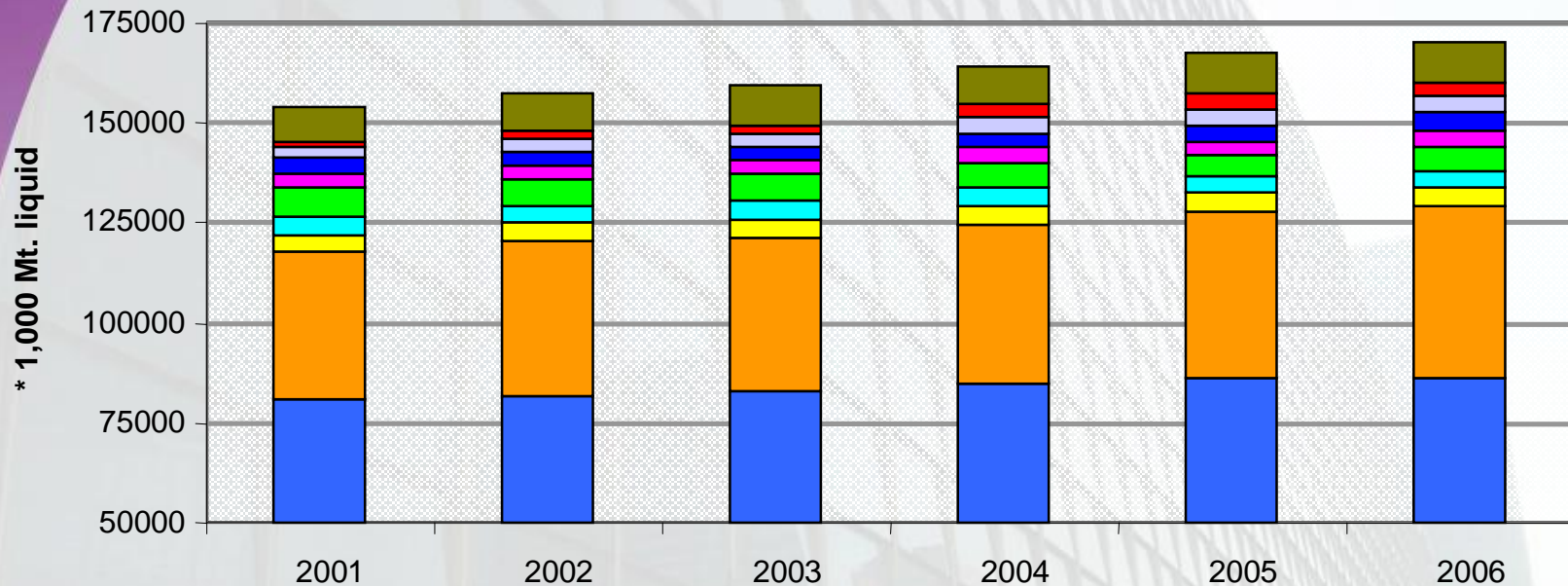




EU & USA have more than 75% of whey in the world

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Liquid Whey availability (Cheese & casein)



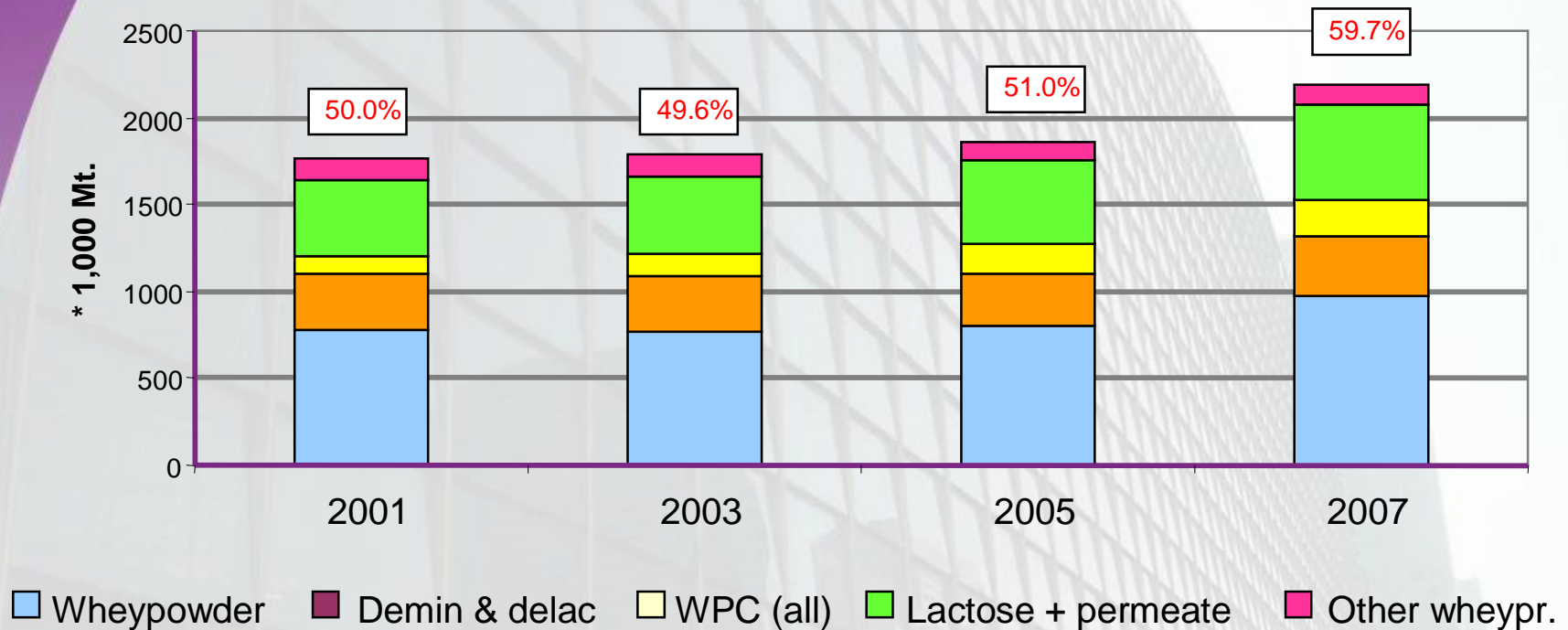
World's whey availability continuously higher



EU Whey processing strongly growing and whey powder still very important

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Production of EU whey products



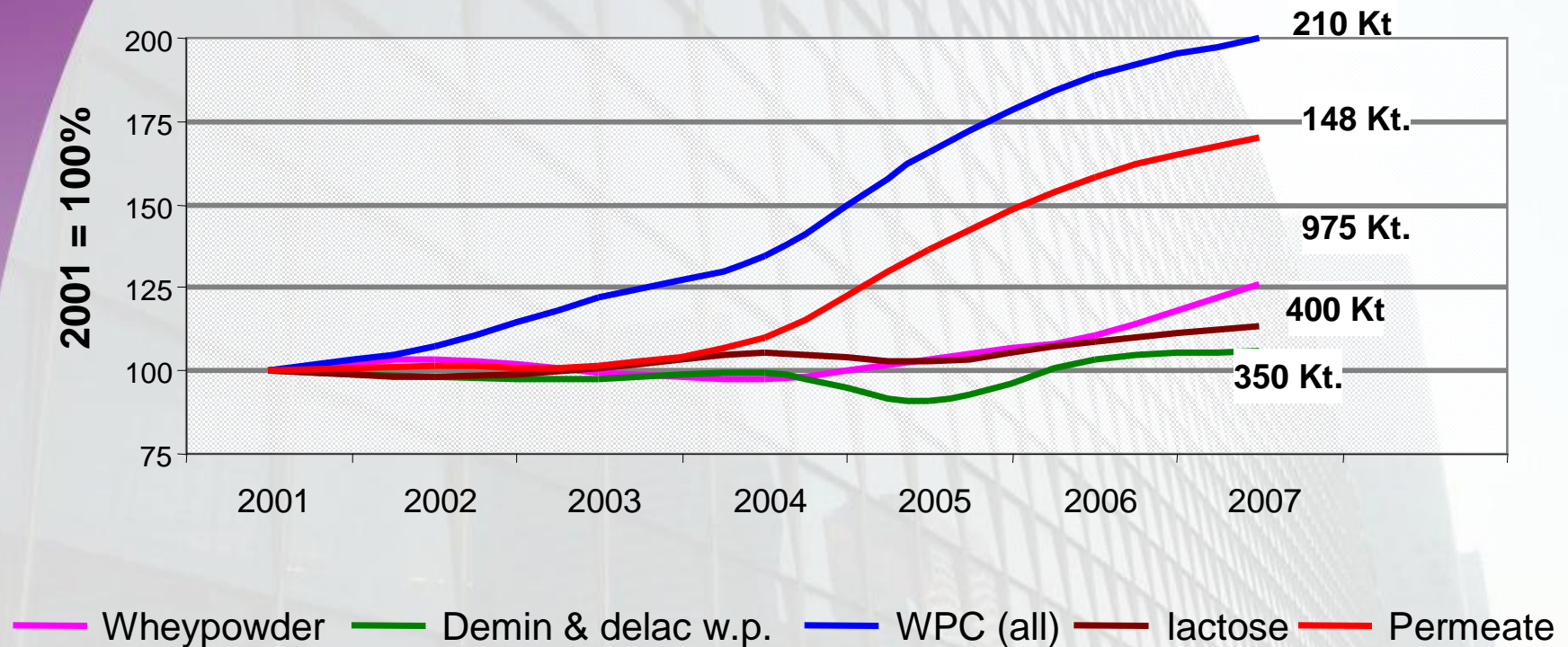
**In 5 years, the share in whey processing is up by 10%,
On top of that, a higher availability of whey due to more cheese**



EU: strongest growth in value added products

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Development in EU whey processing (2001 = 100)





US Developments in whey processing comparable with EU

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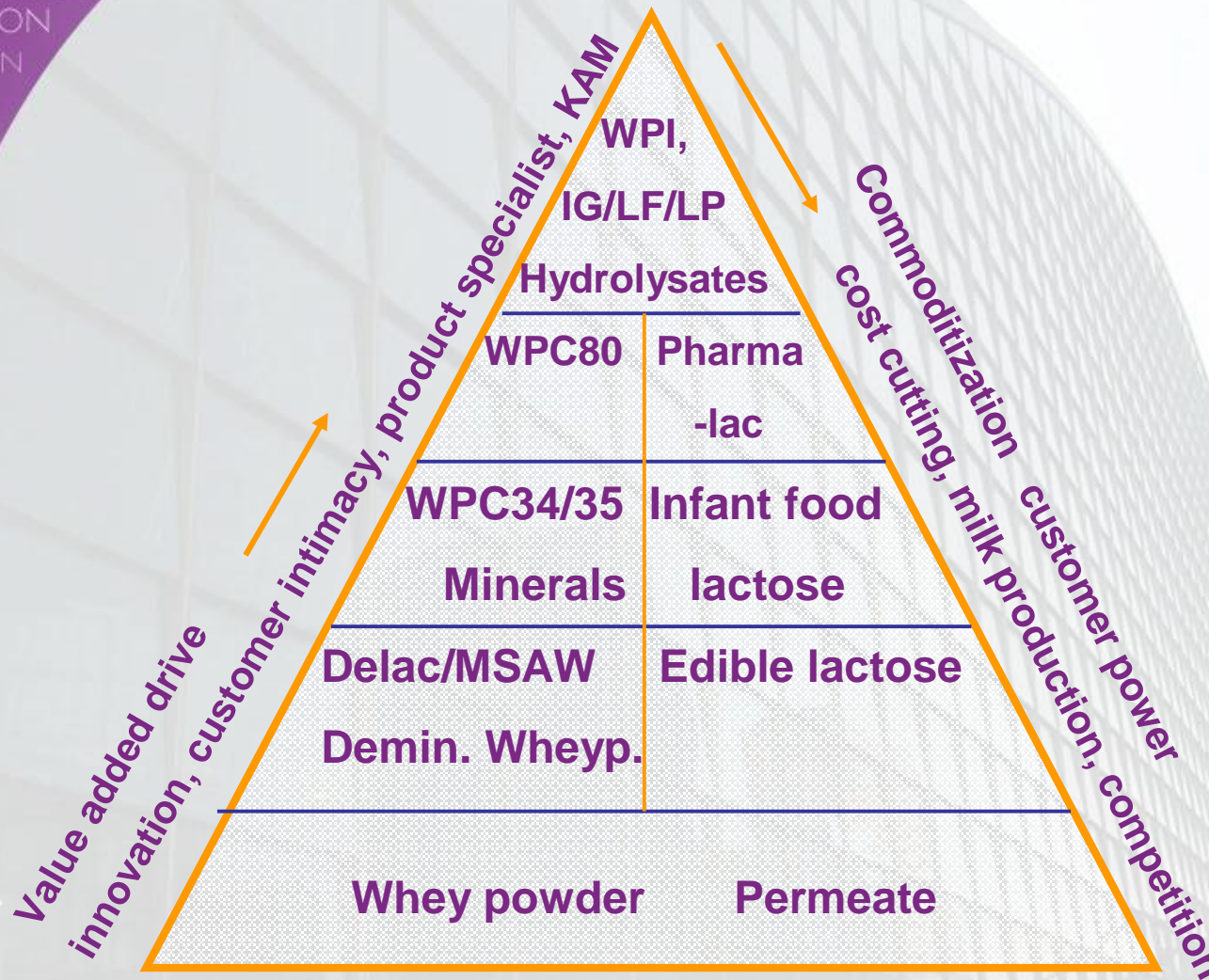
in 1,000 Mt.	EU			USA		
	2003	2007	%	2003	2007	%
Lactose	356	400	12%	278	307	10%
WPC<50	97	162	67%	123	150	22%
WPC>50	30	48	60%	49	73	49%
Delac+demin	324	345	6%	59	52	-12%
Wheypowder	1156	1250	8%	492	512	4%

Strong growth in high added value
Slowly in low added value



Value added whey products (specialties / commodities)

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High added value whey products only in EU, USA & Oceania

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Quantity of cheese needed to produce 5,000 Mt. of whey product

Whey product 5000 Mt.	Milk equiv in Mt.	Cheese in Mt.	Investment in wheyprocessing in Mln Euro
Whey powder	85000	10.000	4,5
50% Demineralized	80000	9.500	5,3
Delac/MSAW	185000	22.000	12
WPC34/35	355000	42.000	22
WPC80	850000	100.000	30

- ~ Conditions for high value added protein products:
 - è High concentration of cheese or casein production
 - è Ability to finance the high investments
 - è A lot of critical mass
 - è Sophisticated Marketing & Sales dept.



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Application determines how fast ingredients will be replaced

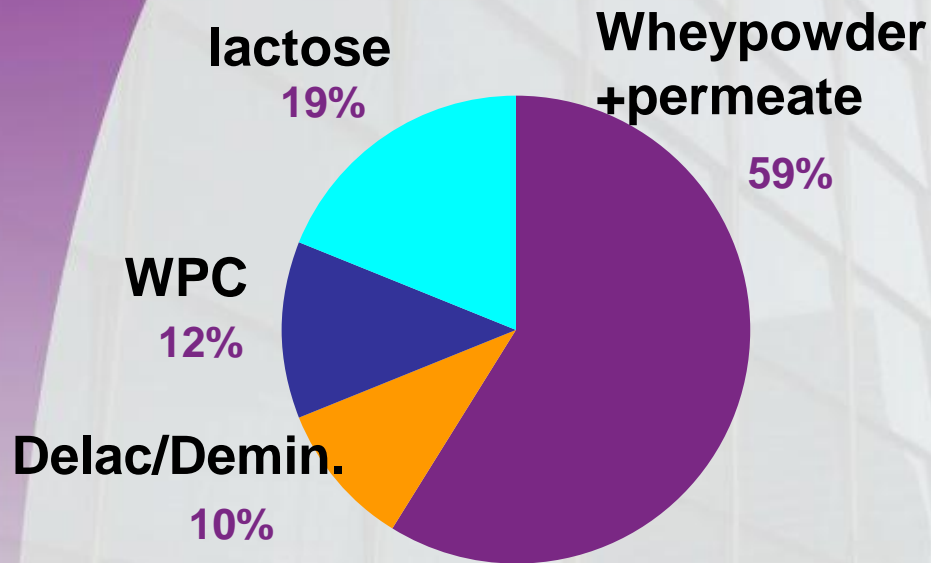
	Speed of replacement by other ingredients
Pharma application	+/-
Nutritional/infant food	+
Food application	++
Feed	++++



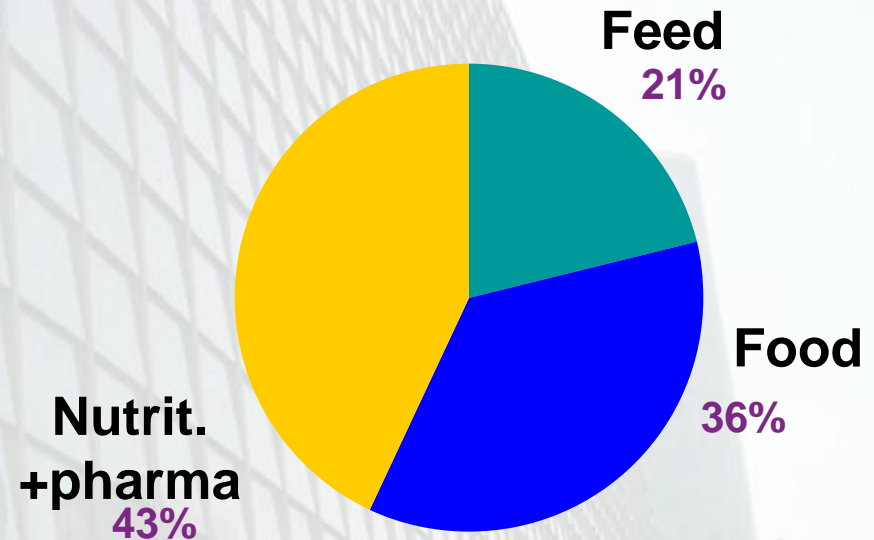
Whey powder and feed application remain important

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World Dry whey products



Application of whey products

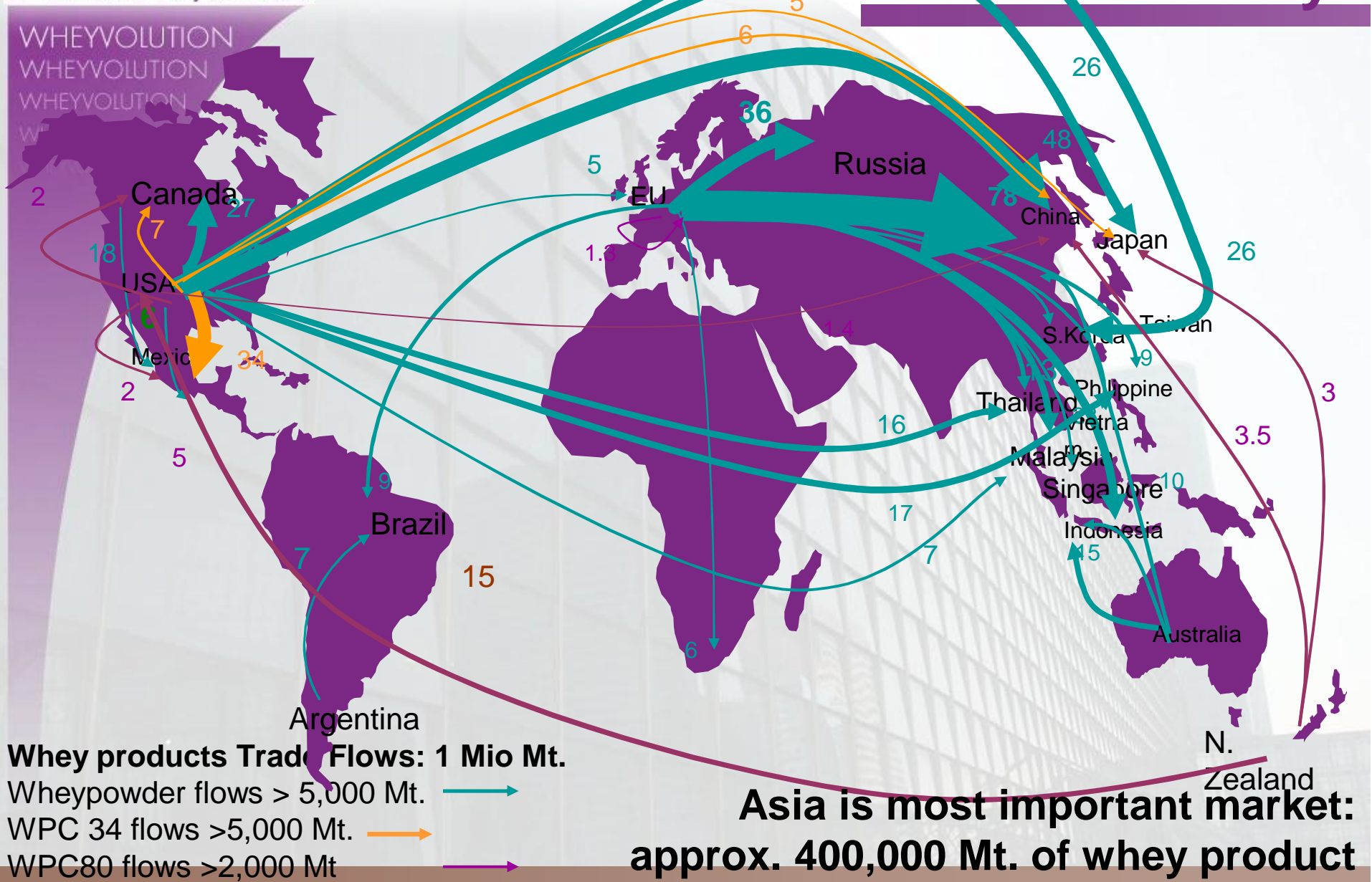


The solution of the present market situation with very low prices must be found in the application in feed and in whey powder



EU & USA are most important in international trade of whey

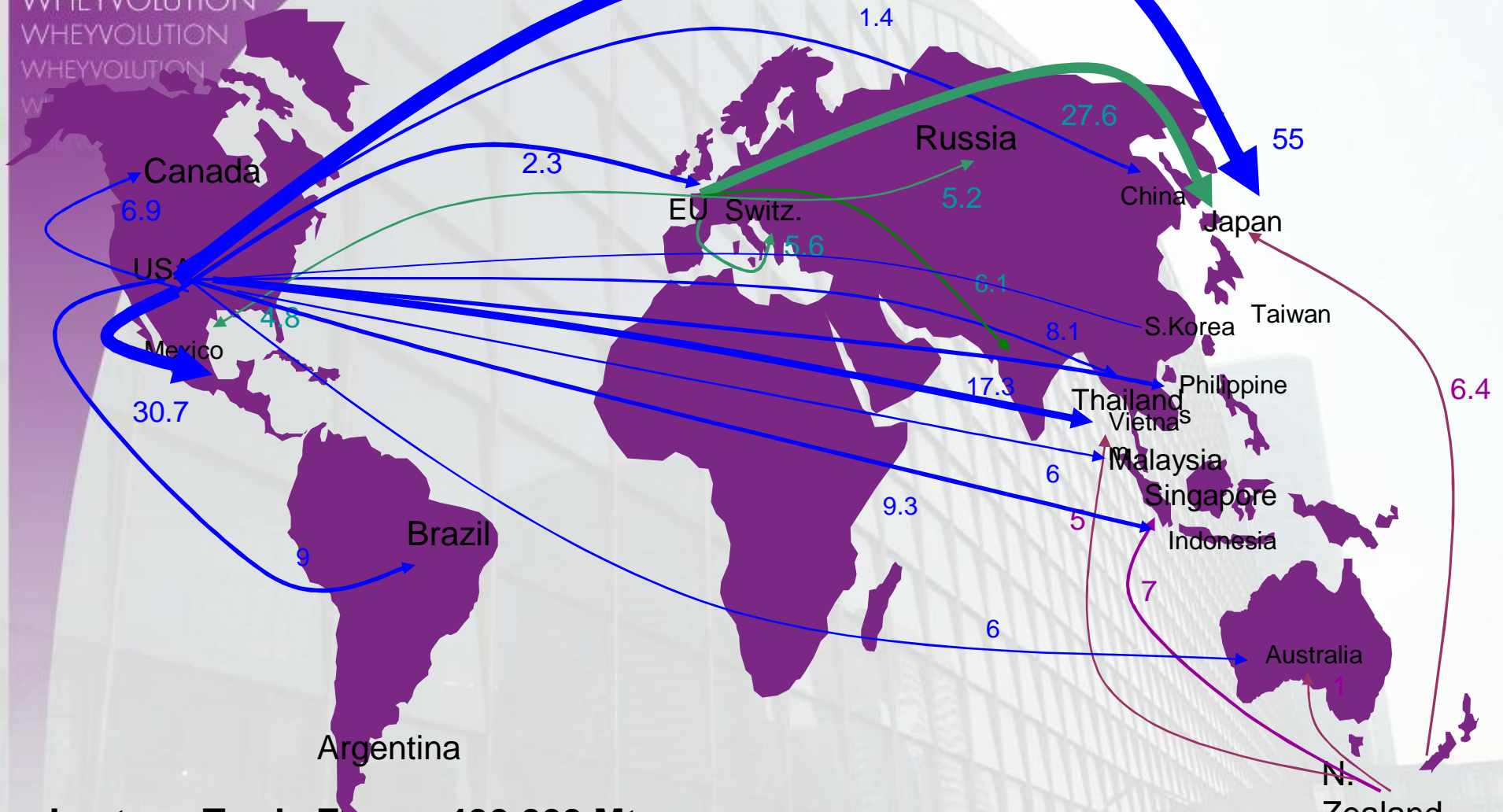
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USA is most important in international trade of lactose

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Lactose Trade Flows: 400,000 Mt.
Lactose flows >5,000 Mt

Asia is most important destination with 230,000 Mt.

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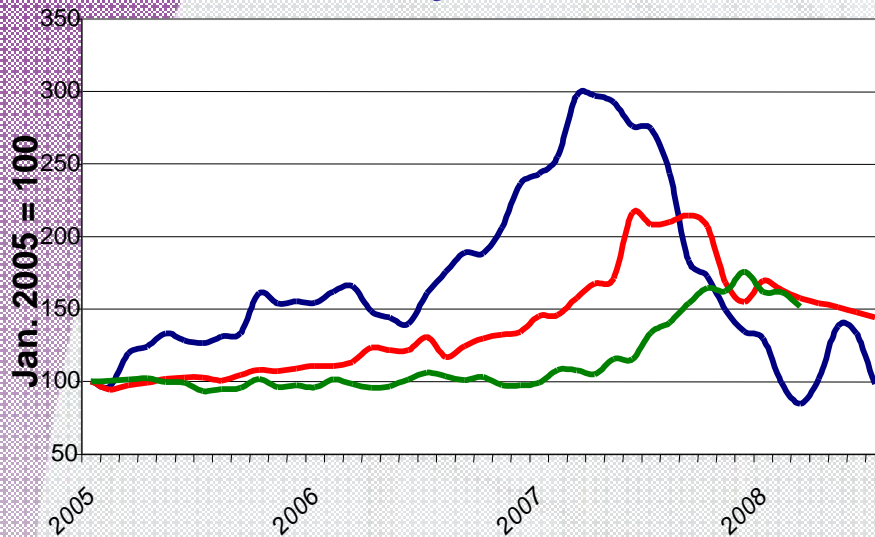
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Price relations

Prices of Added value products follow commodities and fluctuate less

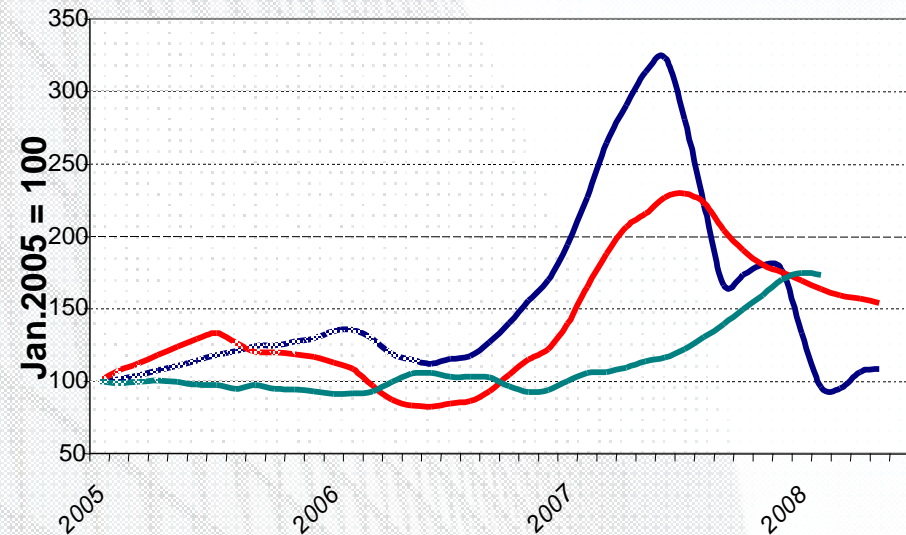
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EU whey markets



■ whey powder ■ WPC30
■ French FOB price WPC80
 (3 m. rolling av. France)

US whey markets



■ Wheypowder ■ WPC34
■ WPC80 FOB (6m rolling av.)

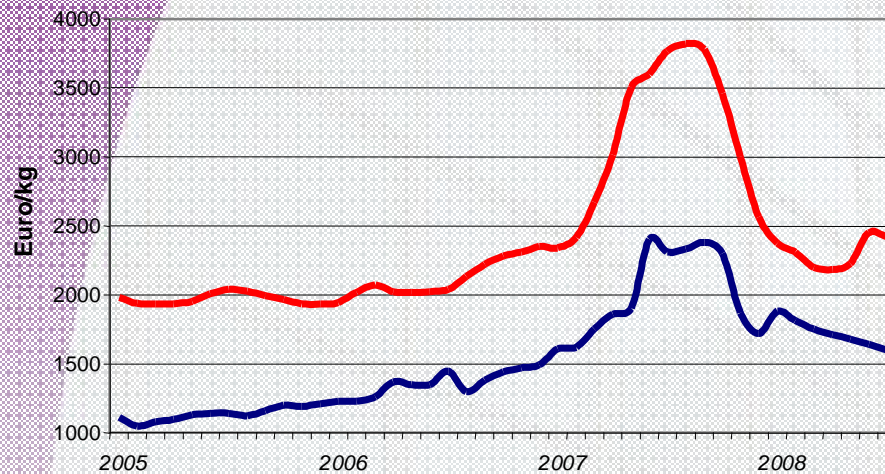
With same development in EU and USA



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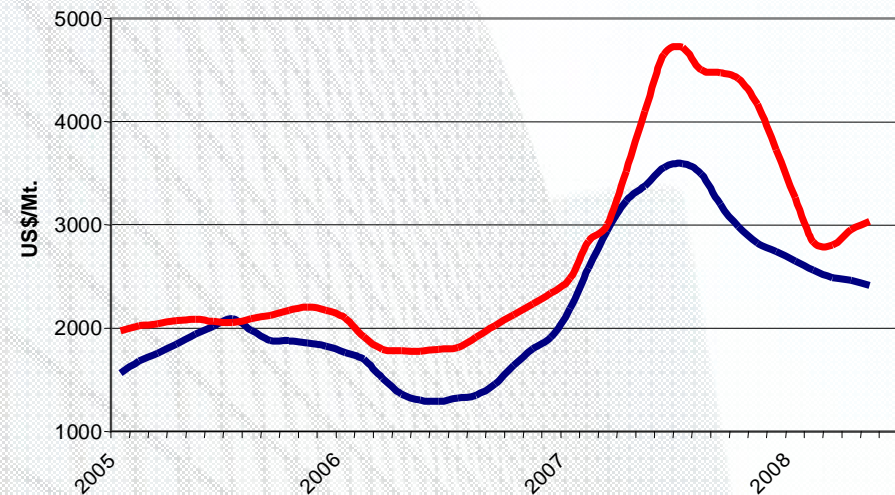
WPC<50 often used as to replace SMP

Relation WPC<50 versus S.M.P. at EU-market



— WPC<50 — S.m.p.

Relation WPC<50 vs NFDM on US market



— US WPC34 — US NFDM

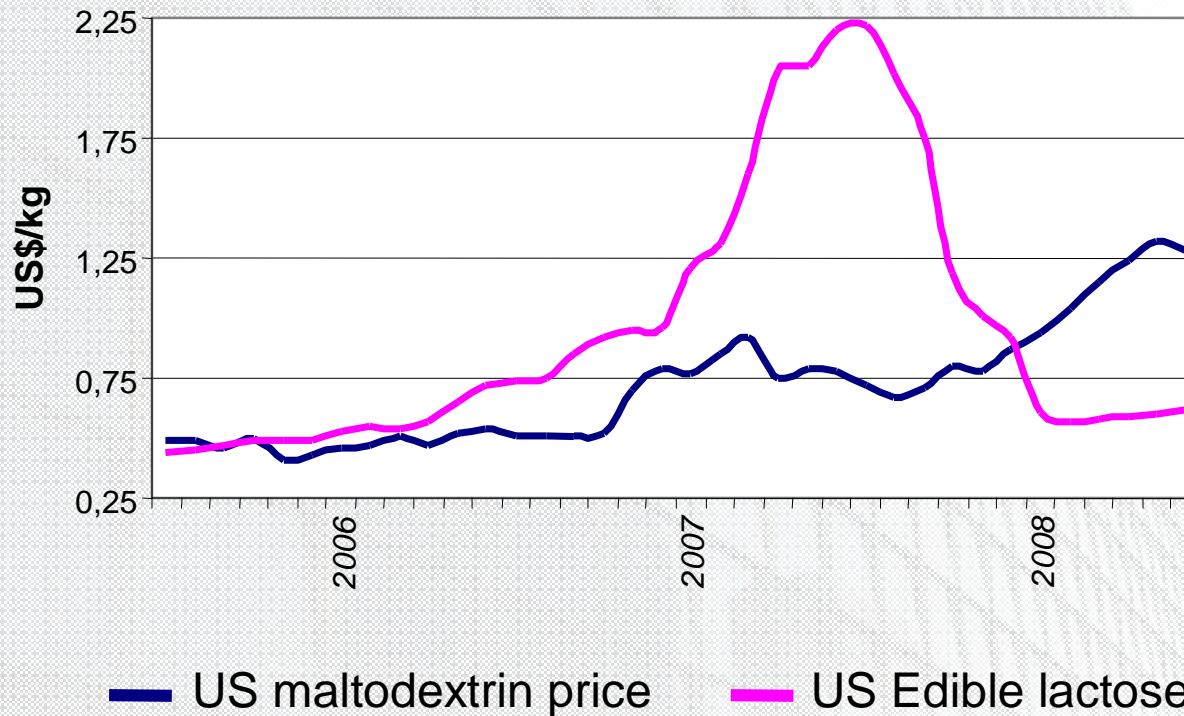
The product lags in price development and is cheaper



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Lactose has become more attractive than maltodextrin

Development of Maltodextrin vs lactose prices on world market



Lactose could replace maltodextrin soon



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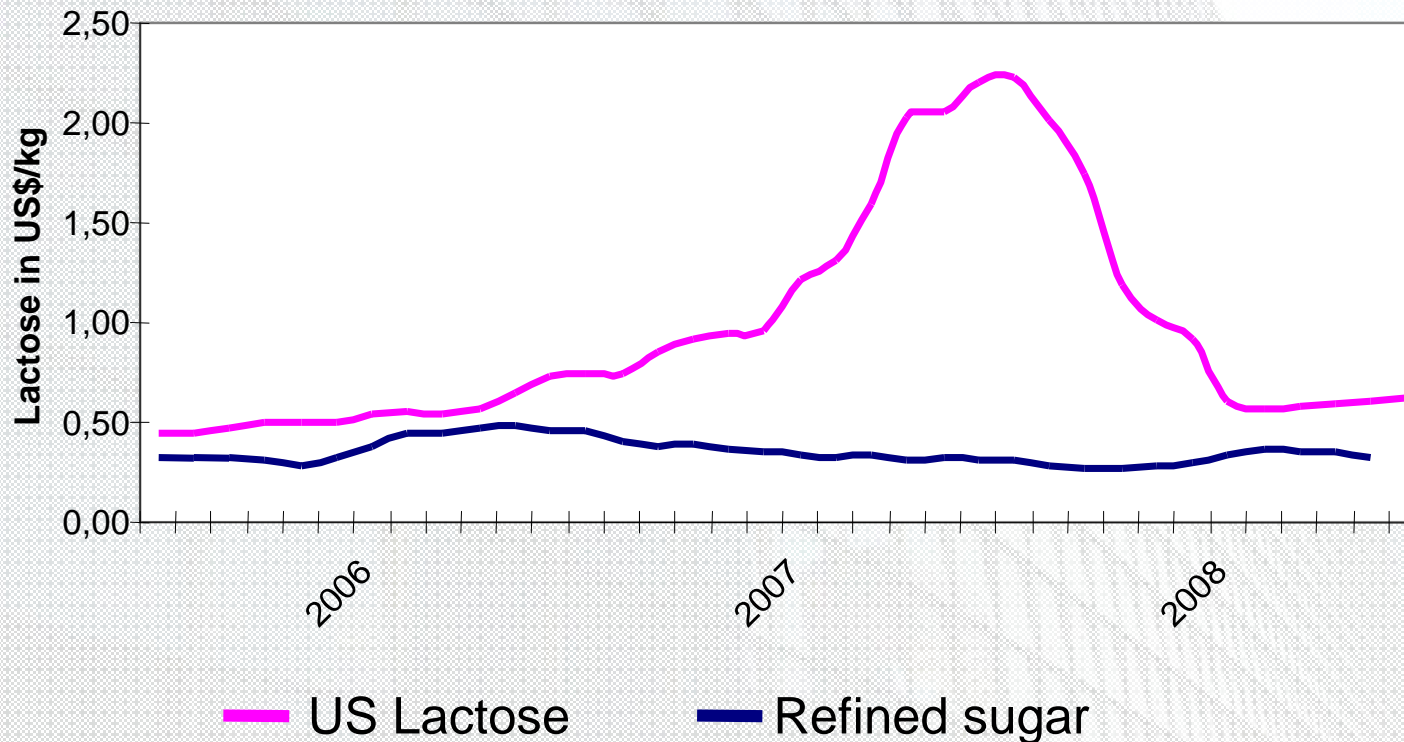
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Lactose becomes now attractive to replace refined sugar

World prices sugar vs lactose



Lactose could replace refined sugar soon



Conclusions

- ~ Whey processing continues to be important and voluminous
- ~ To produce high value added whey products critical mass is needed
- ~ In international trade EU & USA are most important suppliers, Asia is most important market place
- ~ Feed applications remain very important for whey valorization
- ~ Prices:
 - è commodity prices fluctuate more than value added
 - è Value added prices follow commodity price development
 - è After the high priced 2007, whey prices are now back on earth and demand will resume

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Thank you for your attention