Evolution of dairy production systems in Australia…and can the country stop the ‘rot’

Presentation to Australian Dairy Farmers:

Farming Systems and Herd Improvement Policy Advisory Group

David Beca

17 April 2020

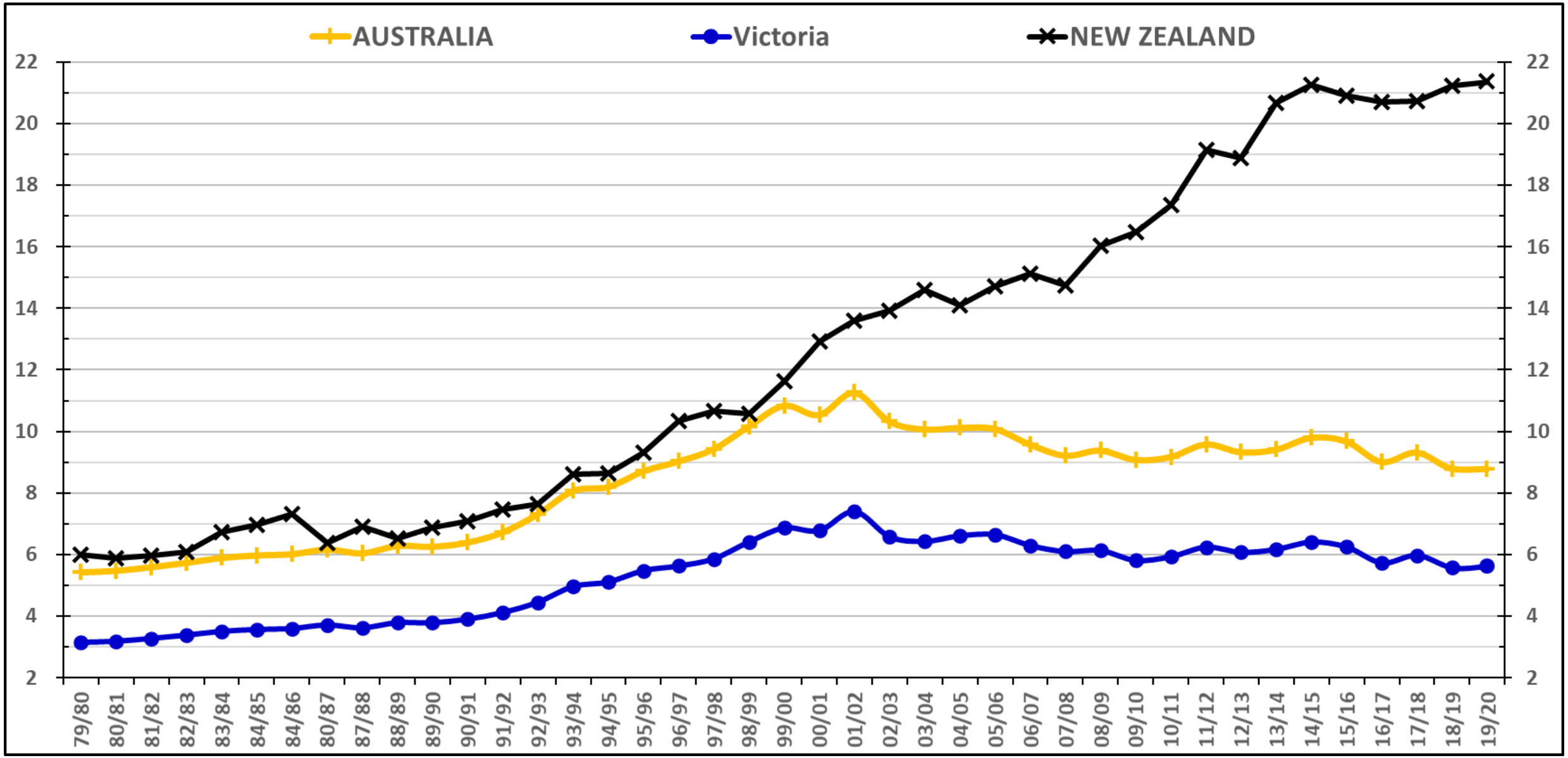
Presentation outline

- ❑ Confirm basis for countries being reviewed and compared
- ❑ What are the trends in production and profitability?
- ❑ What is driving the Australian trend?
- ❑ What is the impact of farmers choice of production system?
- ❑ What might need to change to change the future?

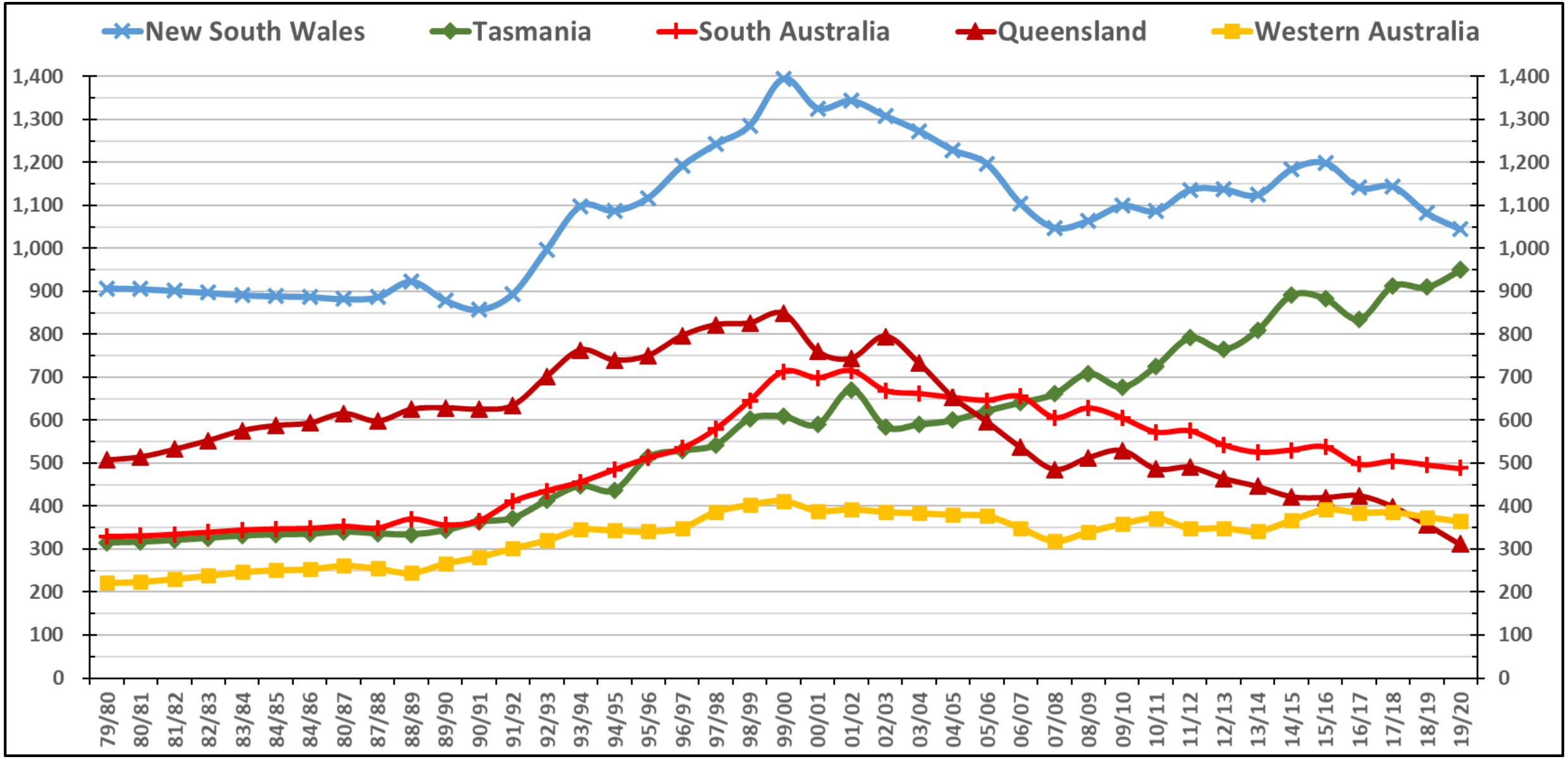
Categorisation of countries and AUS states for milk market focus, climate and level of government support or subsidies

MILK MARKET	Primary export focus	Combined export and domestic focus	Primary domestic focus
Country	New Zealand, Uruguay	Australia, Argentina, United States	South Africa
Australian State	Tasmania	Victoria, South Australia	New South Wales, Queens-land, Western Australia
CLIMATE	**"Cool" temperate**	**"Hot" temperate**	**Subtropical**
Country	New Zealand	Australia, Argentina, Uruguay, South Africa, United States	
Australian State	Tasmania	Victoria, New South Wales, South Australia, Western Australia	Queensland
GOVERNMENT SUPPORT / SUBSIDIES	**Very little to none**	**Some (not substantial)**	**Substantial**
Country	Australia, New Zealand, Uruguay, South Africa	Argentina, United States	

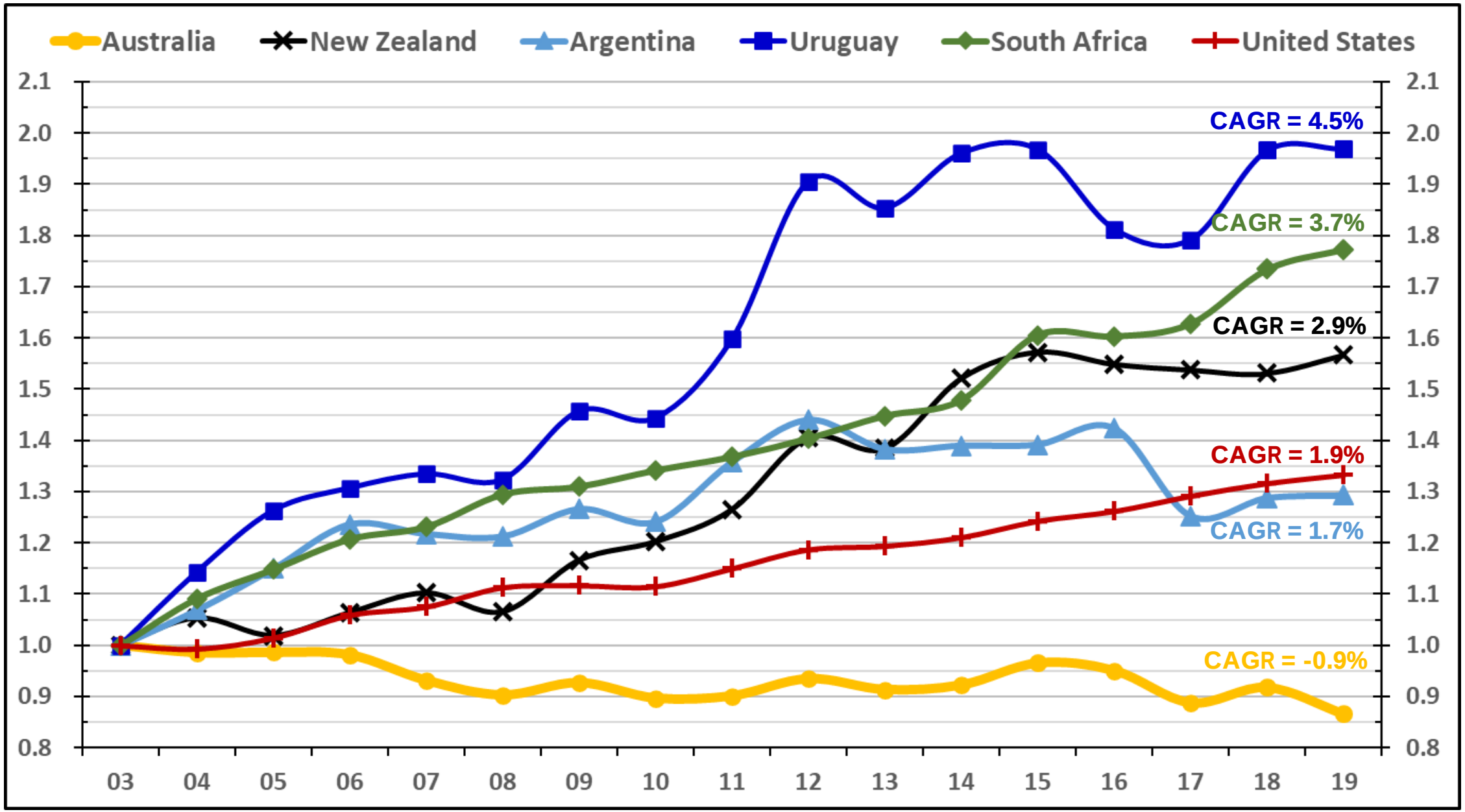
Annual milk production (billion litres)



Annual milk production NSW, TAS, SA, QLD and WA (million litres)



Annual solids corrected milk production (2002/03 Base = 1.00)



So why the absence of growth in milk supply in Australia?

Profitable dairy businesses are required to provide the opportunity for growth

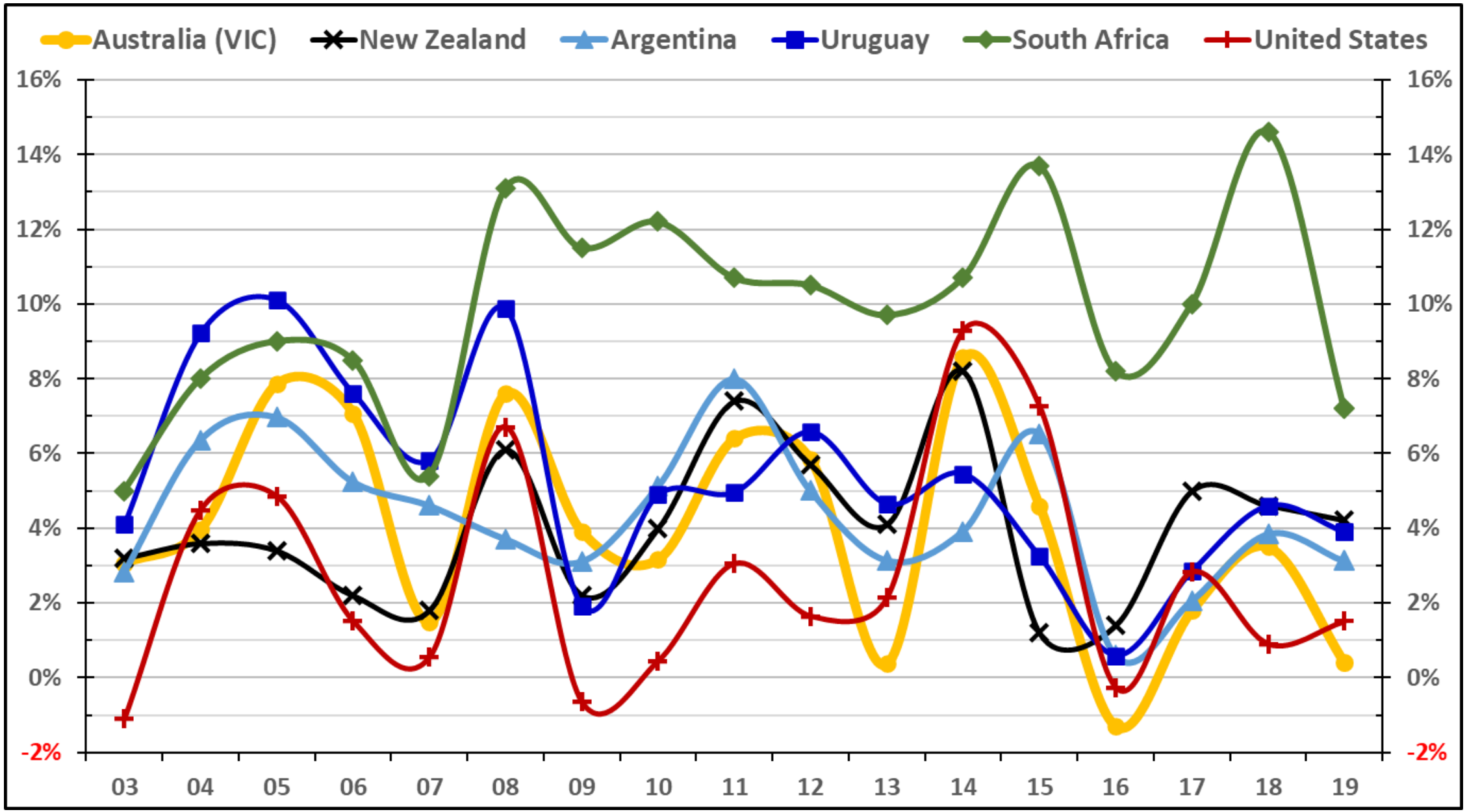
Some profitability is required to attract investment in dairying

Growth in milk supply is required for milk processors to thrive…or they must survive by cannibalising each others milk supply

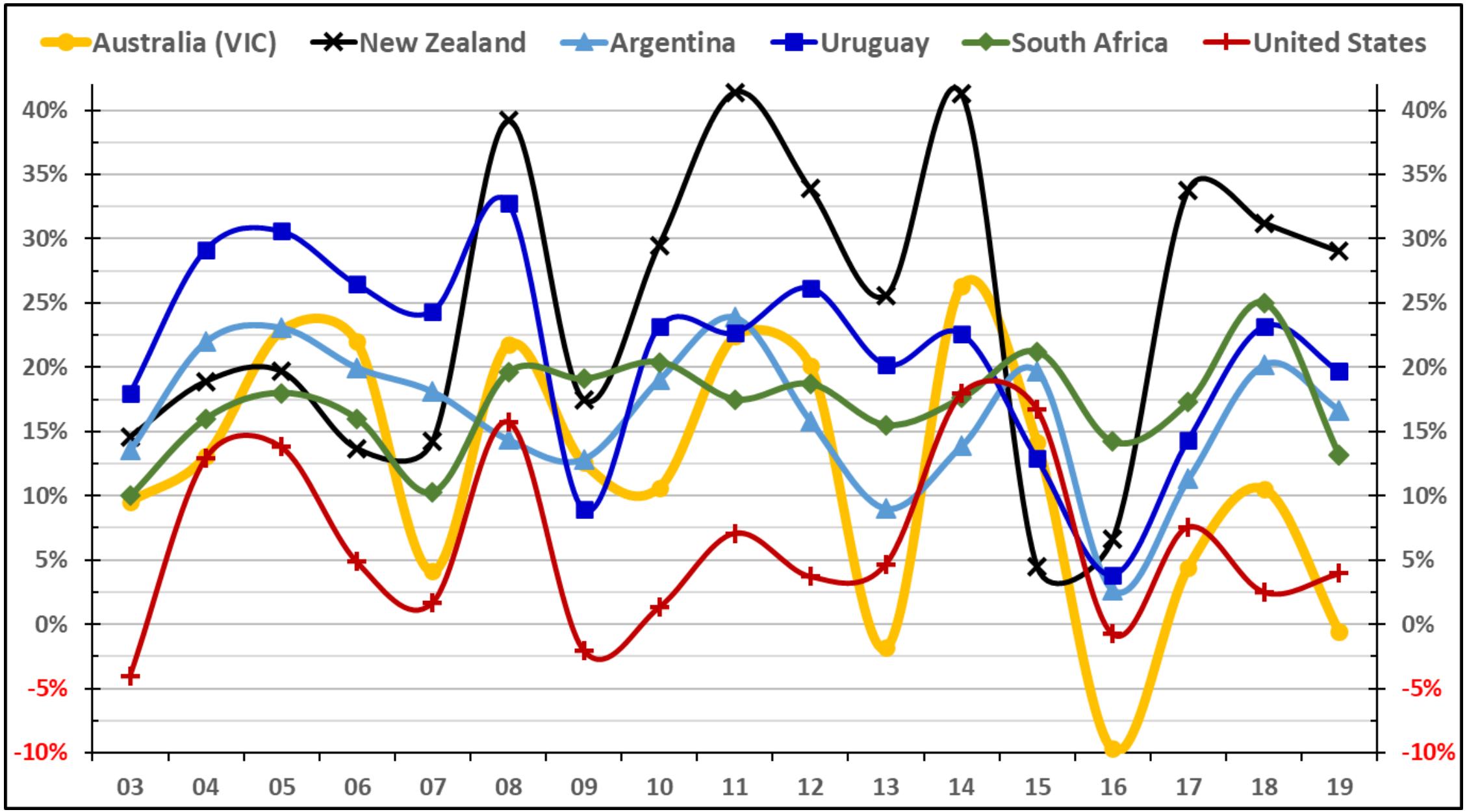
So what has been happening to farm profitability?

And what is driving any changes in profitability?

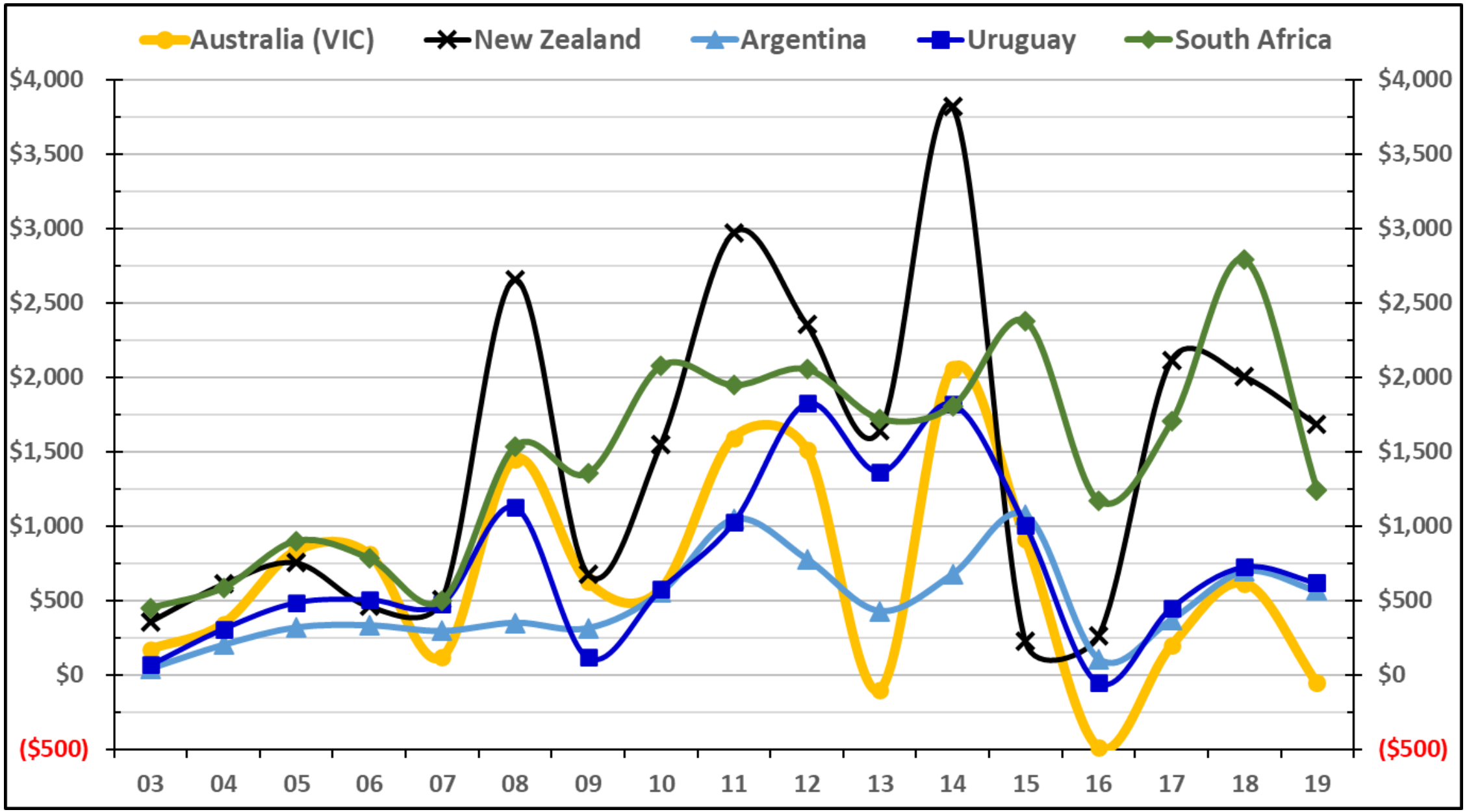
Return on (total) capital (%)



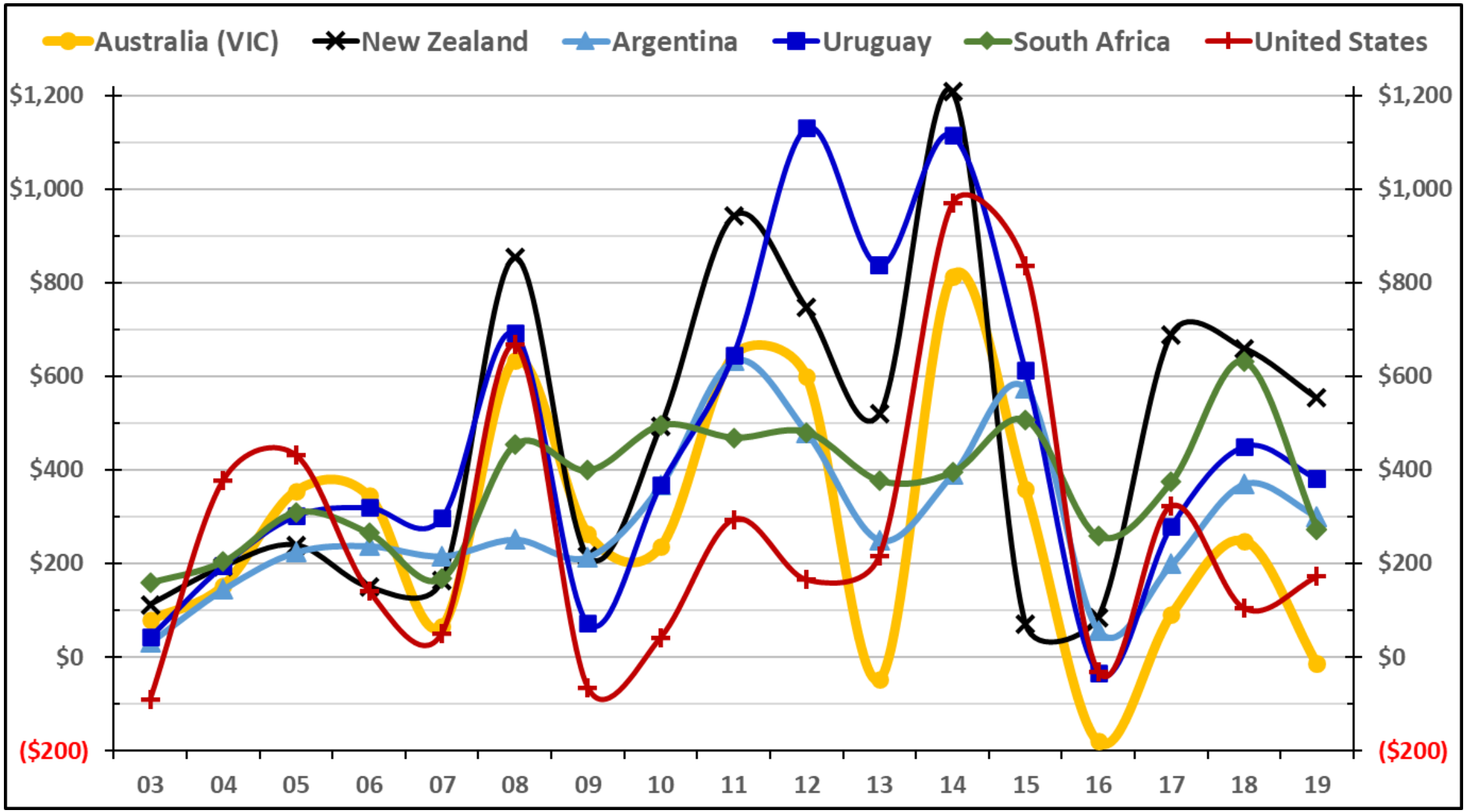
Operating profit margin (%)



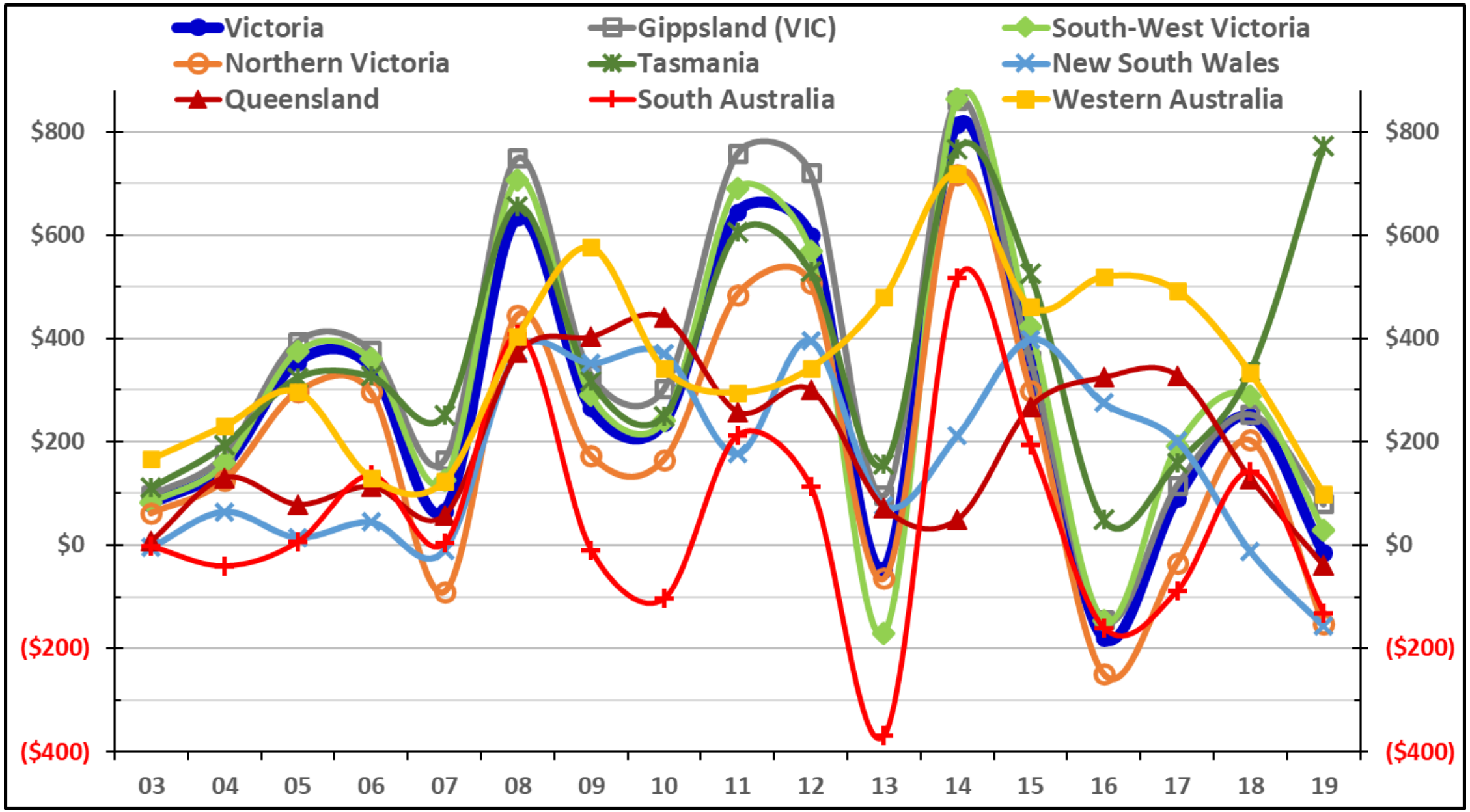
Profit per hectare (USD/hectare)



Profit per cow (USD/cow)



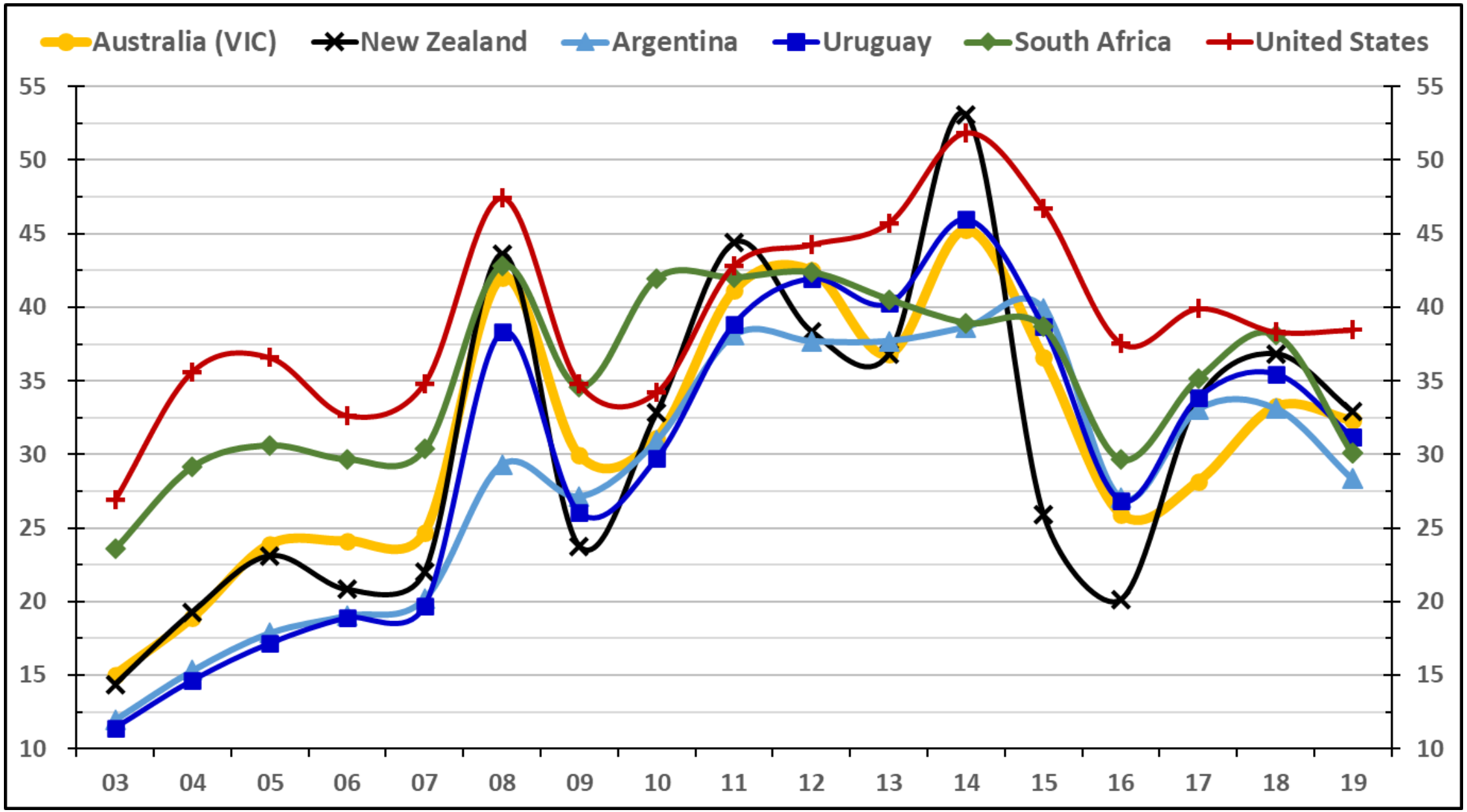
Profit per cow for all states plus three regions of VIC (USD/cow)



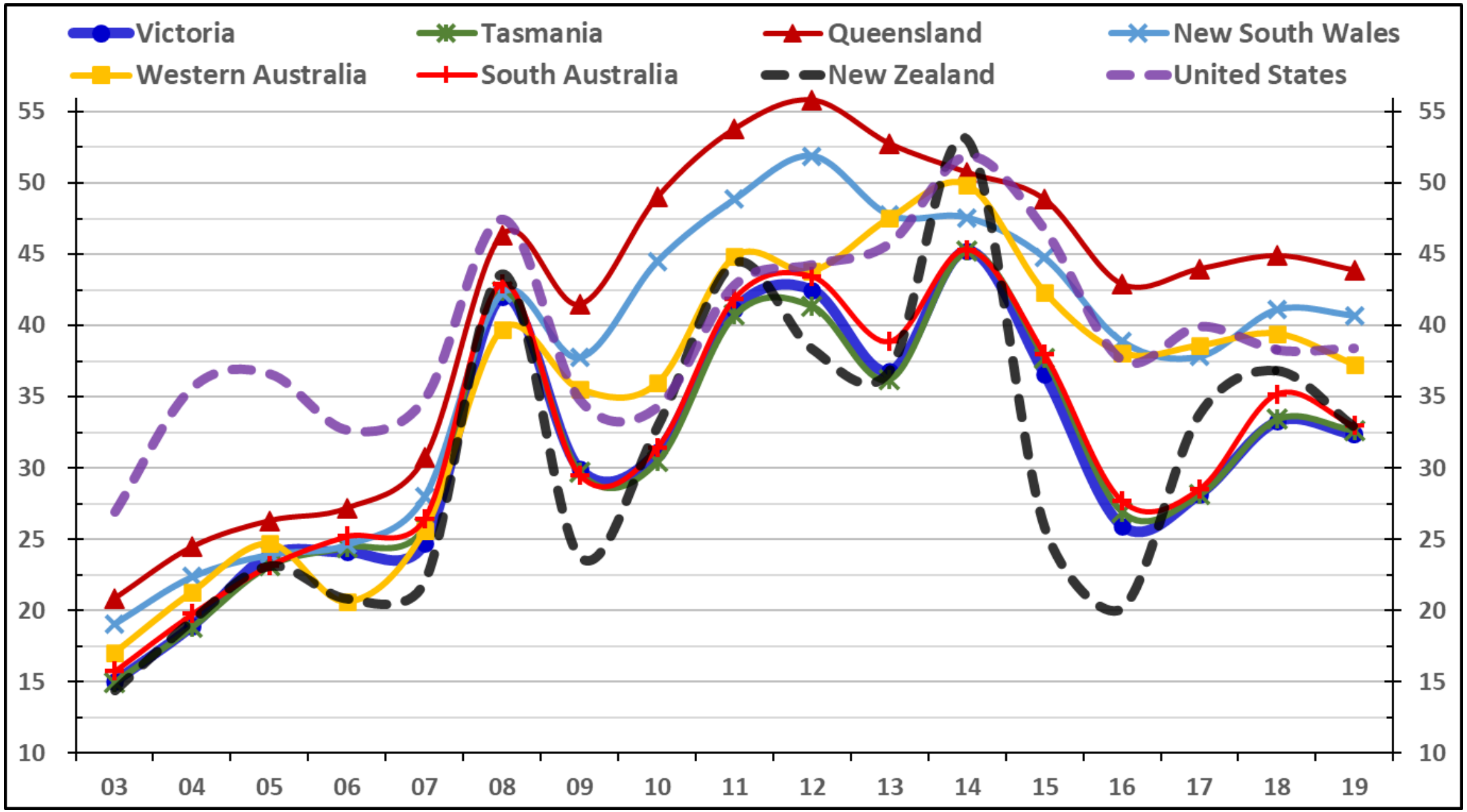
What are the factors causing loss of profitability?

Milk price…supermarkets, milk processors, MG implosion?

Milk price (USD c/litre ECM)



Milk price for all states (USD c/litre ECM)



What are the factors causing loss of profitability?

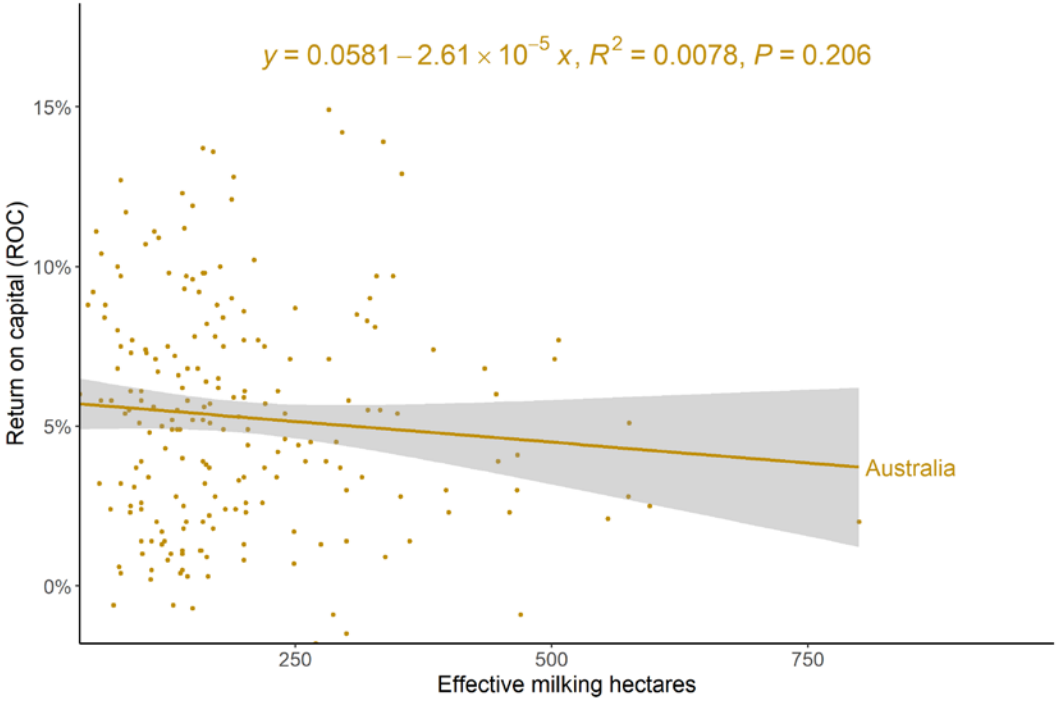
Milk price…supermarkets, milk processors, MG implosion?

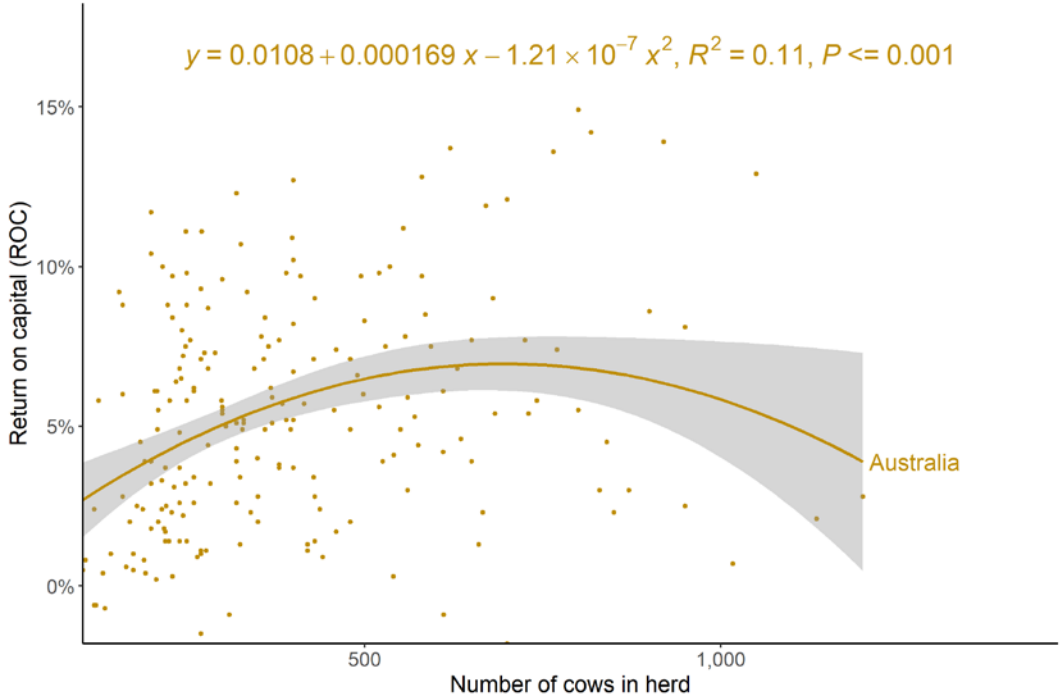
Weather/drought?

Deregulation of the dairy industry in 2000?

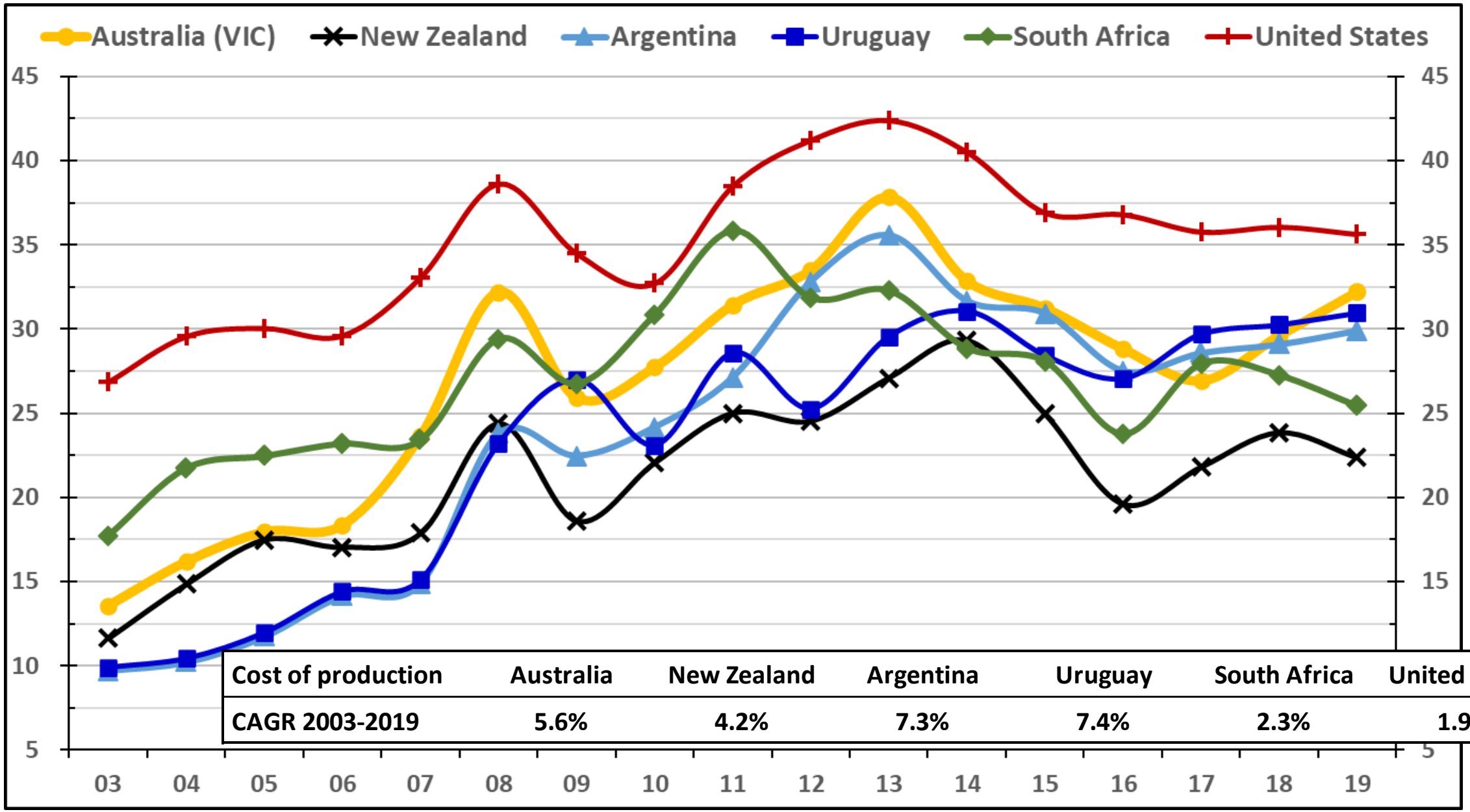
Size of dairy farm?

Avg. No. Cows in Herd	Australia	New Zealand	Argentina	Uruguay	South Africa	United States
2017/18	271	431	160	2014 150 est.	2014 353	234
2018/19	276	435	162 est.	158 est.	370 est.	236 est.



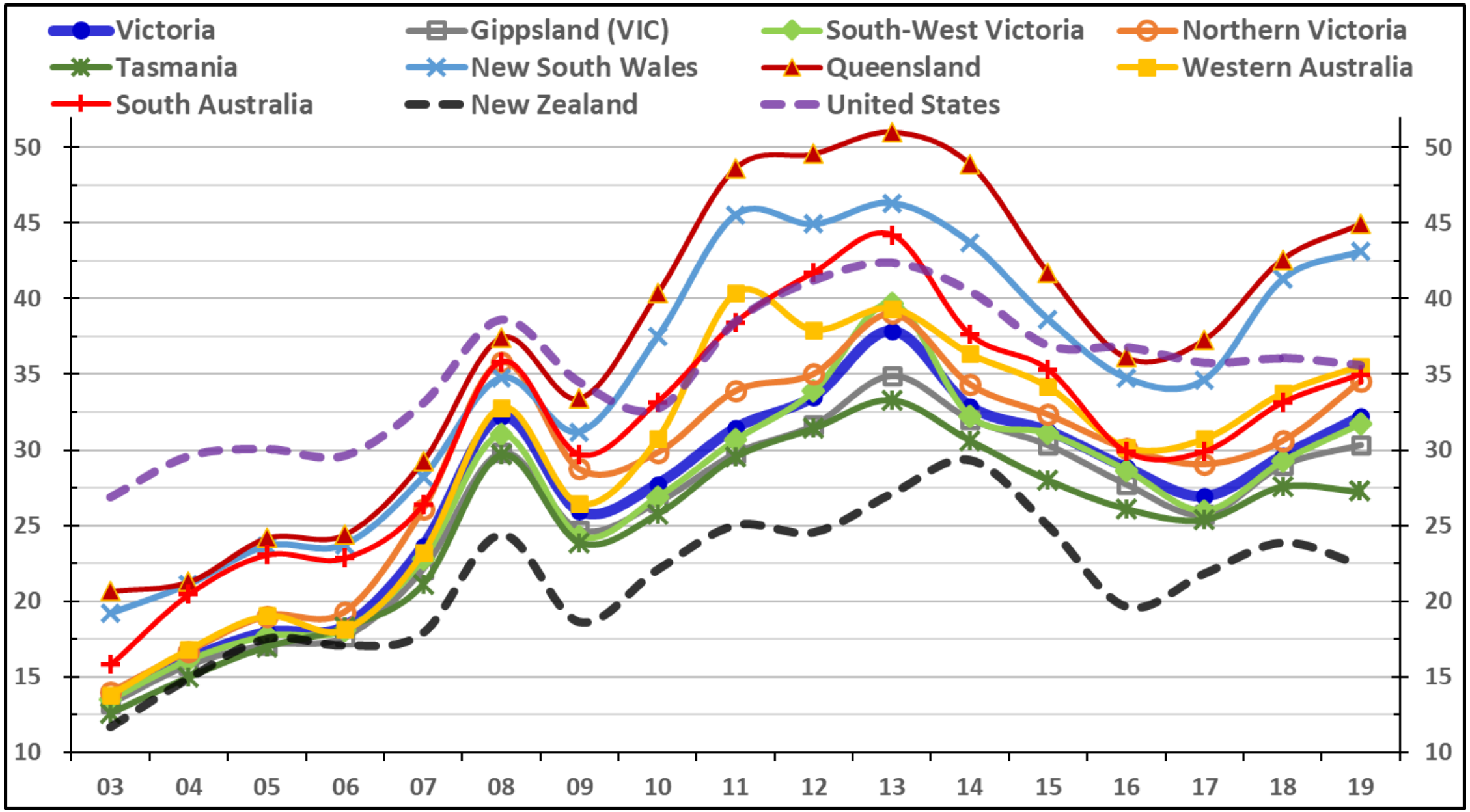


Cost of production (USD c/litre ECM)

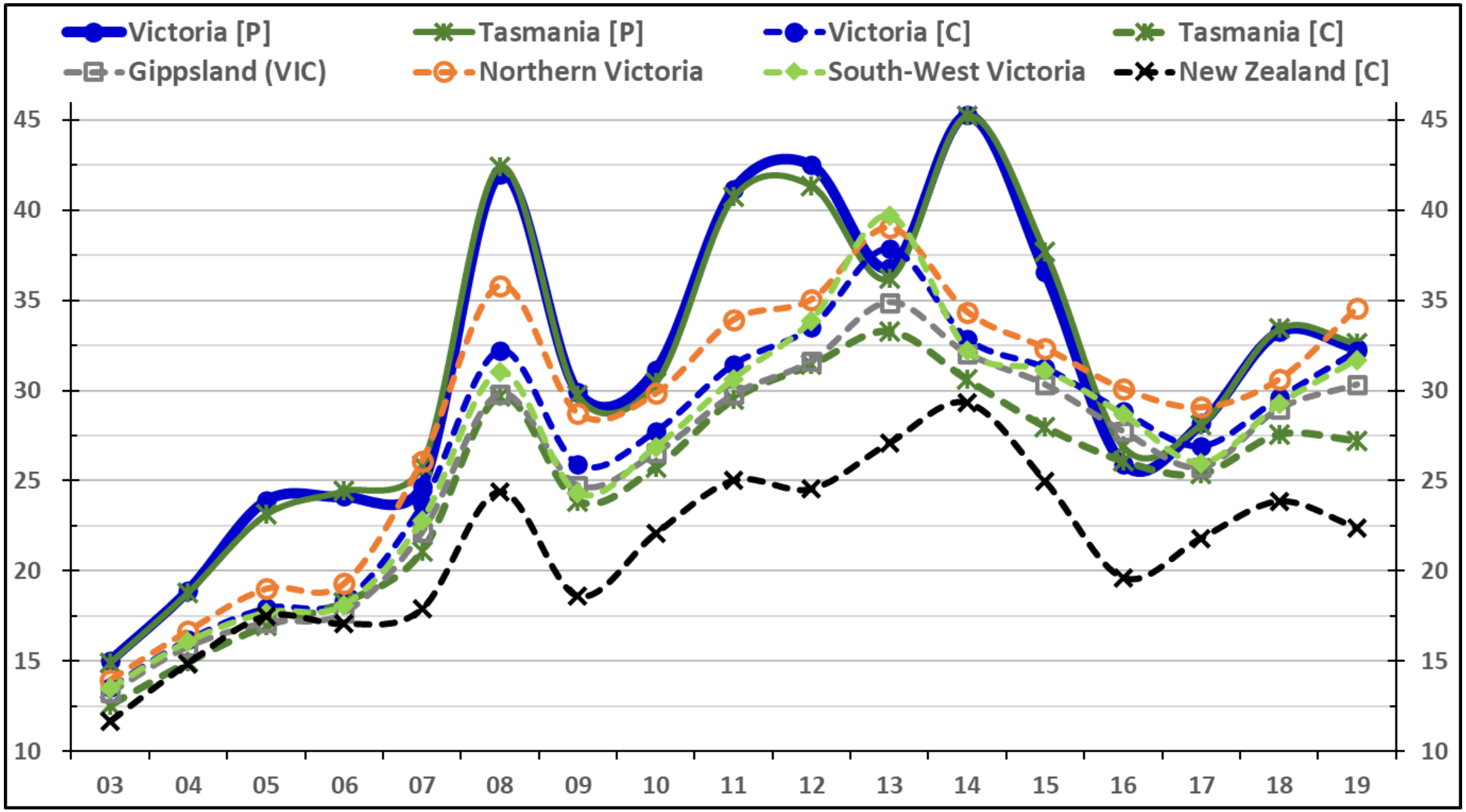


Cost of production	Australia	New Zealand	Argentina	Uruguay	South Africa	United States
CAGR 2003-2019	5.6%	4.2%	7.3%	7.4%	2.3%	1.9%

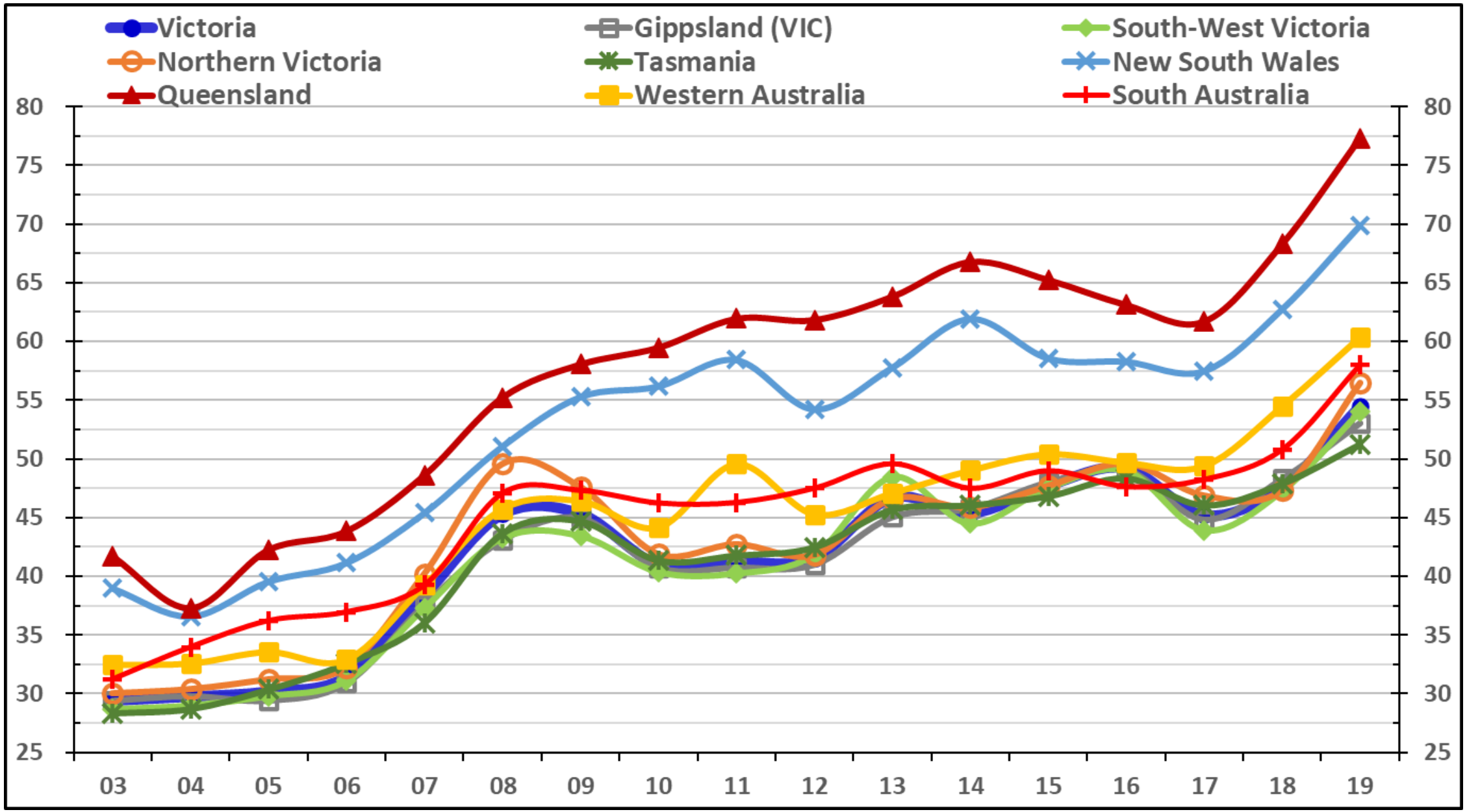
CoP for all states plus three regions of VIC (USD c/litre ECM)



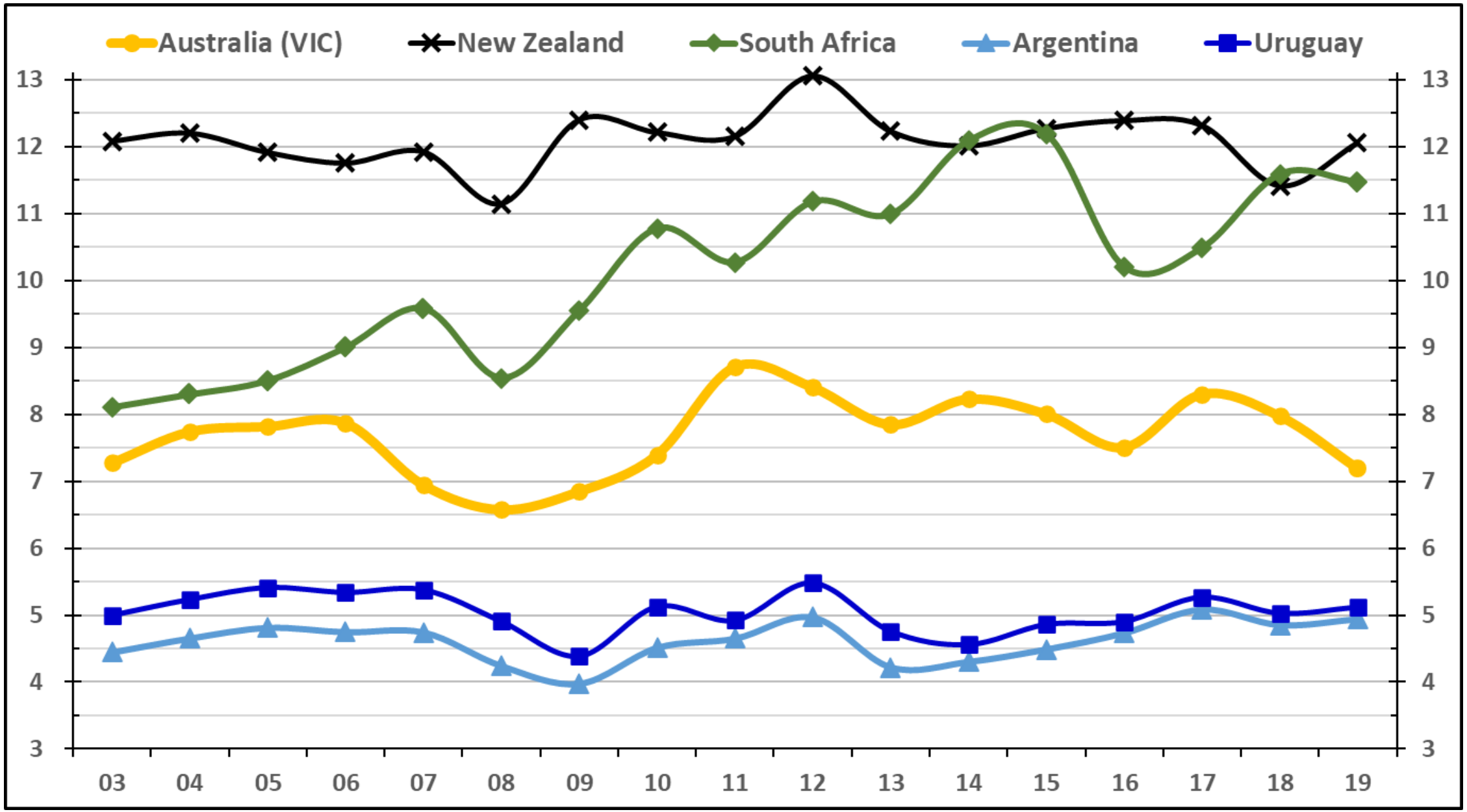
Milk price (solid line) for VIC and TAS versus CoP (dotted line) for VIC, TAS, VIC regions and NZ (all USD c/litre ECM)



Economic CoP for all states plus three regions of VIC (AUD c/litre ECM)



Pasture harvest (tonne dry matter per hectare per year)



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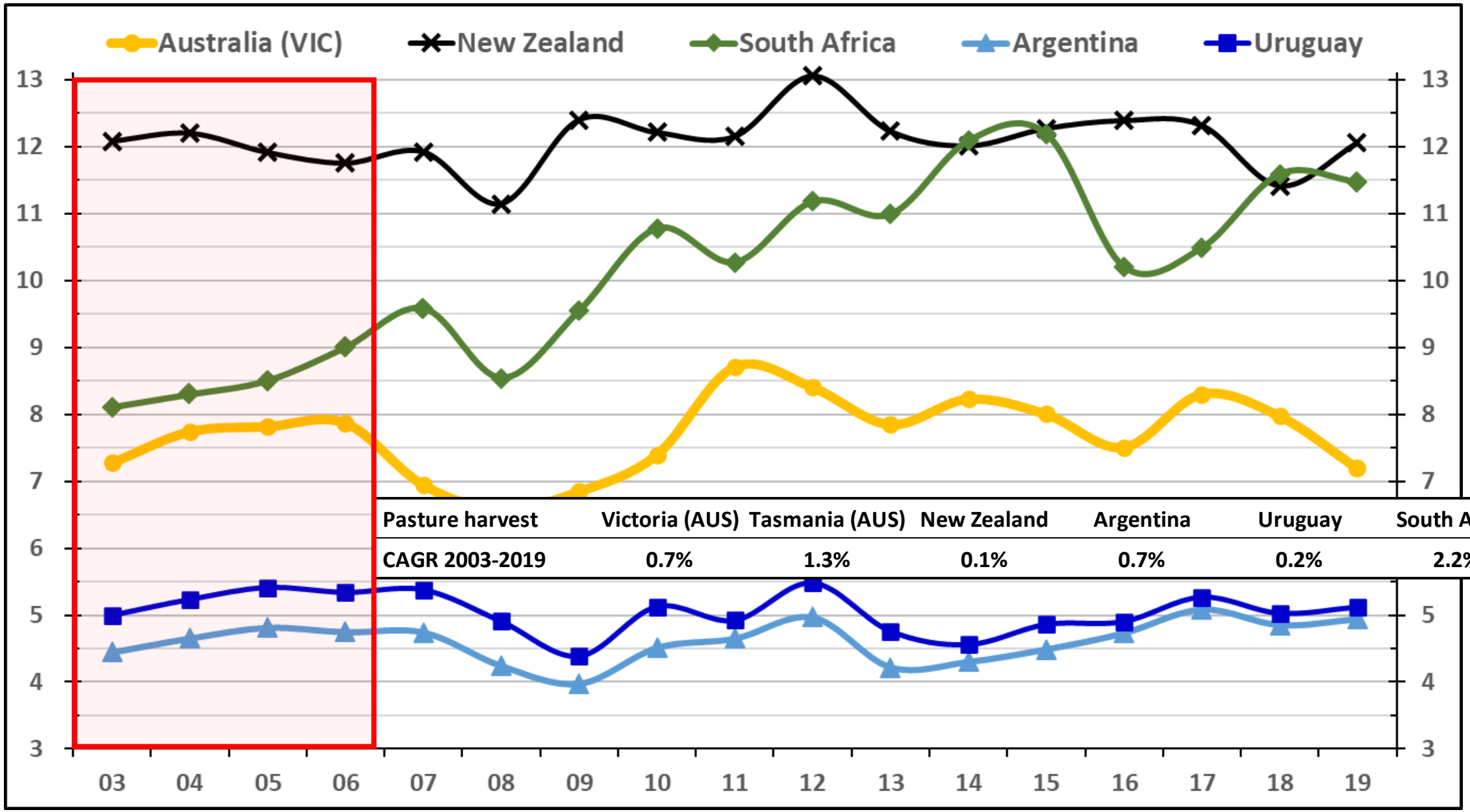
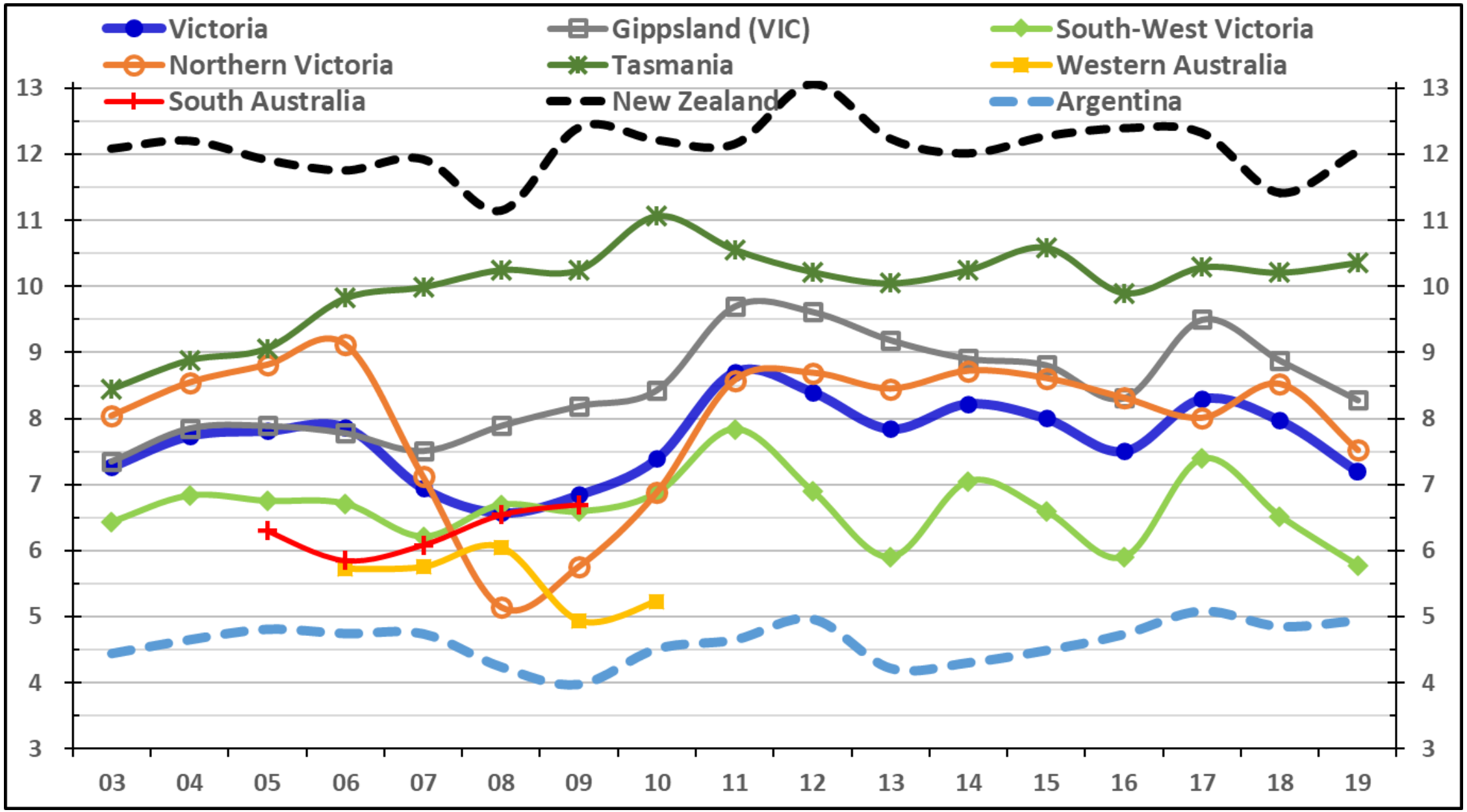


Pasture harvest	Victoria (AUS)	Tasmania (AUS)	New Zealand	Argentina	Uruguay	South Africa
CAGR 2003-2019	0.7%	1.3%	0.1%	0.7%	0.2%	2.2%

Pasture harvest (tDM/ha/yr) for States

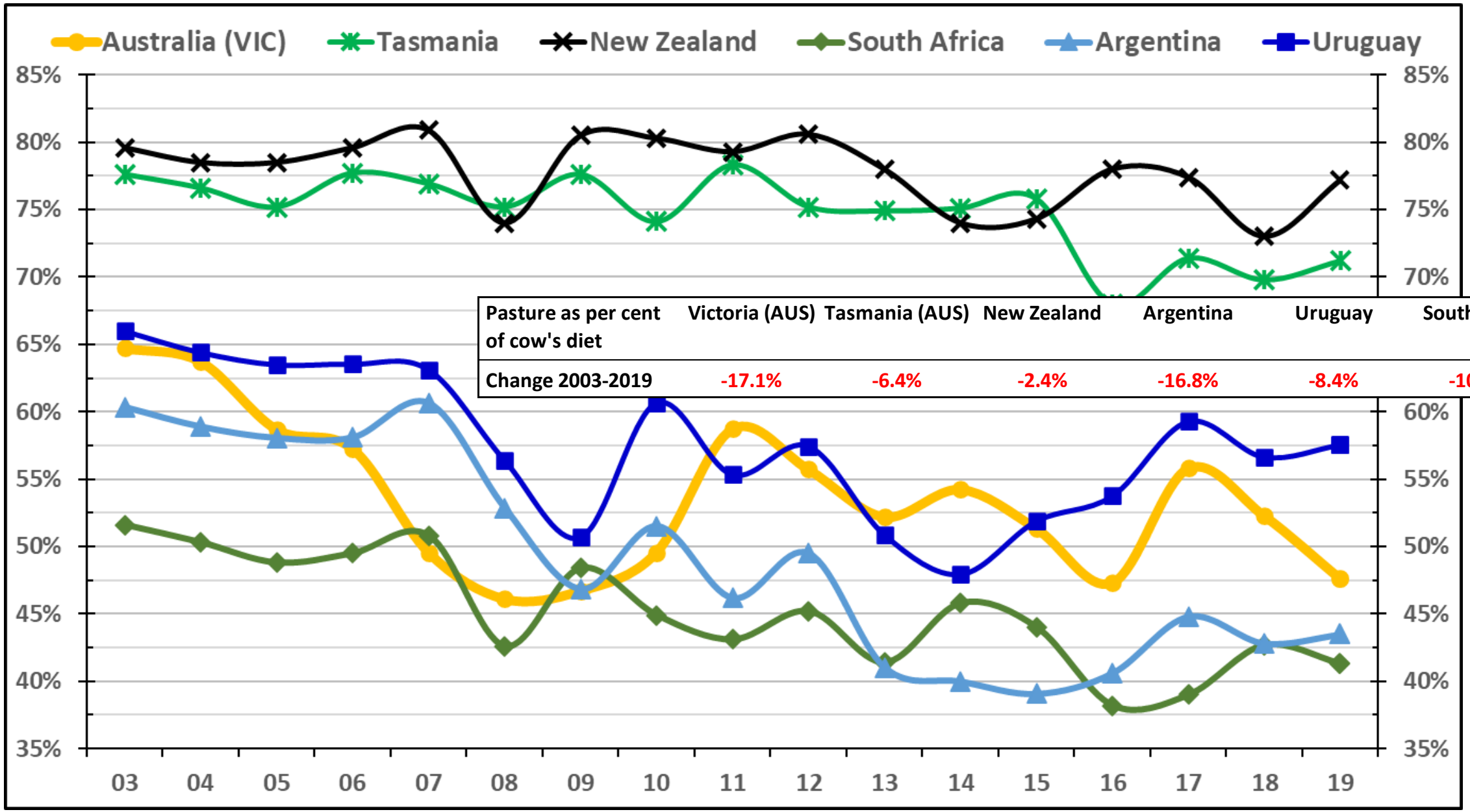


What have been the changes in farm production system?

What has been happening to the farm production system?

What are the impacts of changing production system?

Pasture as % of cow's diet (US not on graph as 0%)

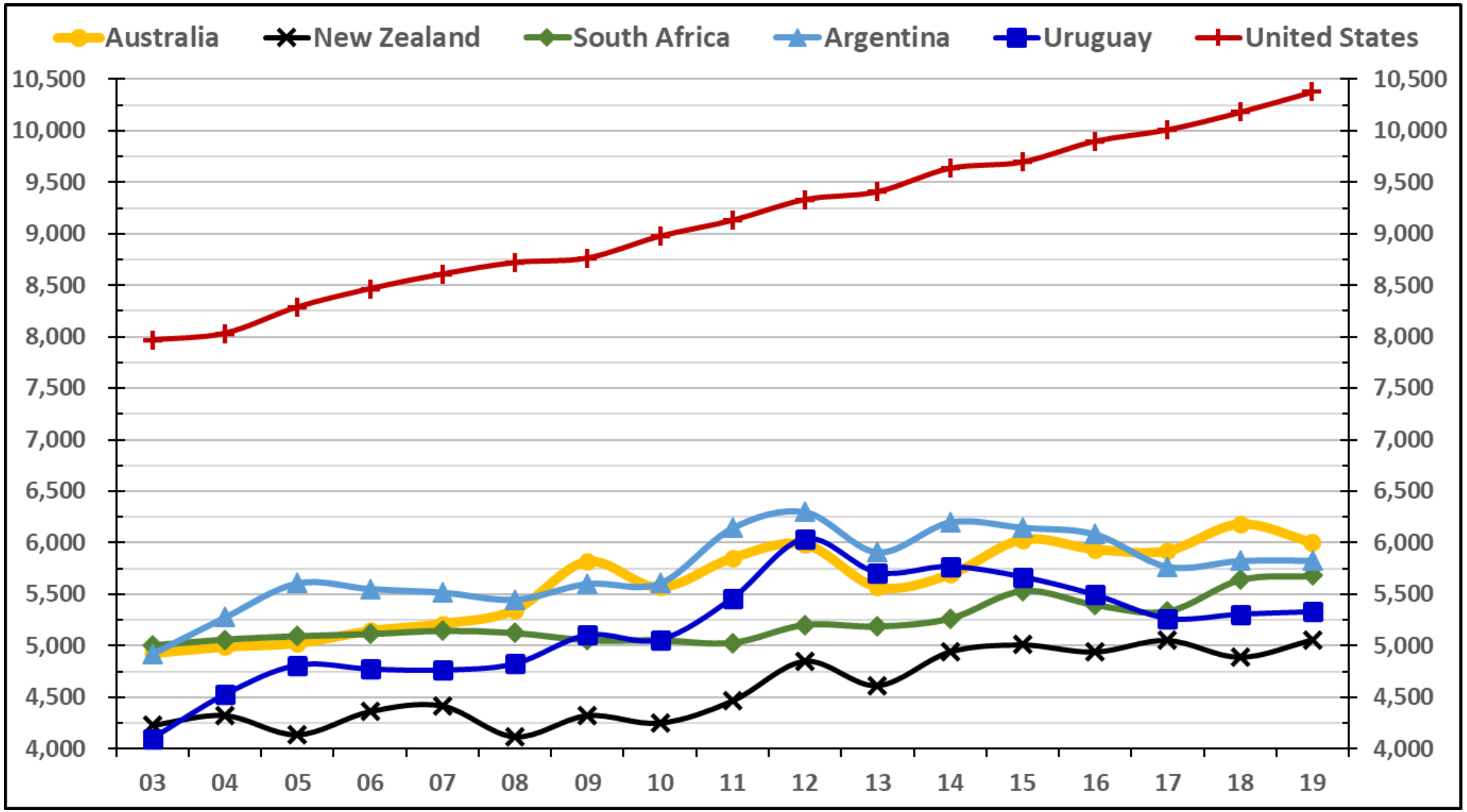


Pasture as per cent of cow's diet	Victoria (AUS)	Tasmania (AUS)	New Zealand	Argentina	Uruguay	South Africa
Change 2003-2019	-17.1%	-6.4%	-2.4%	-16.8%	-8.4%	-10.3%

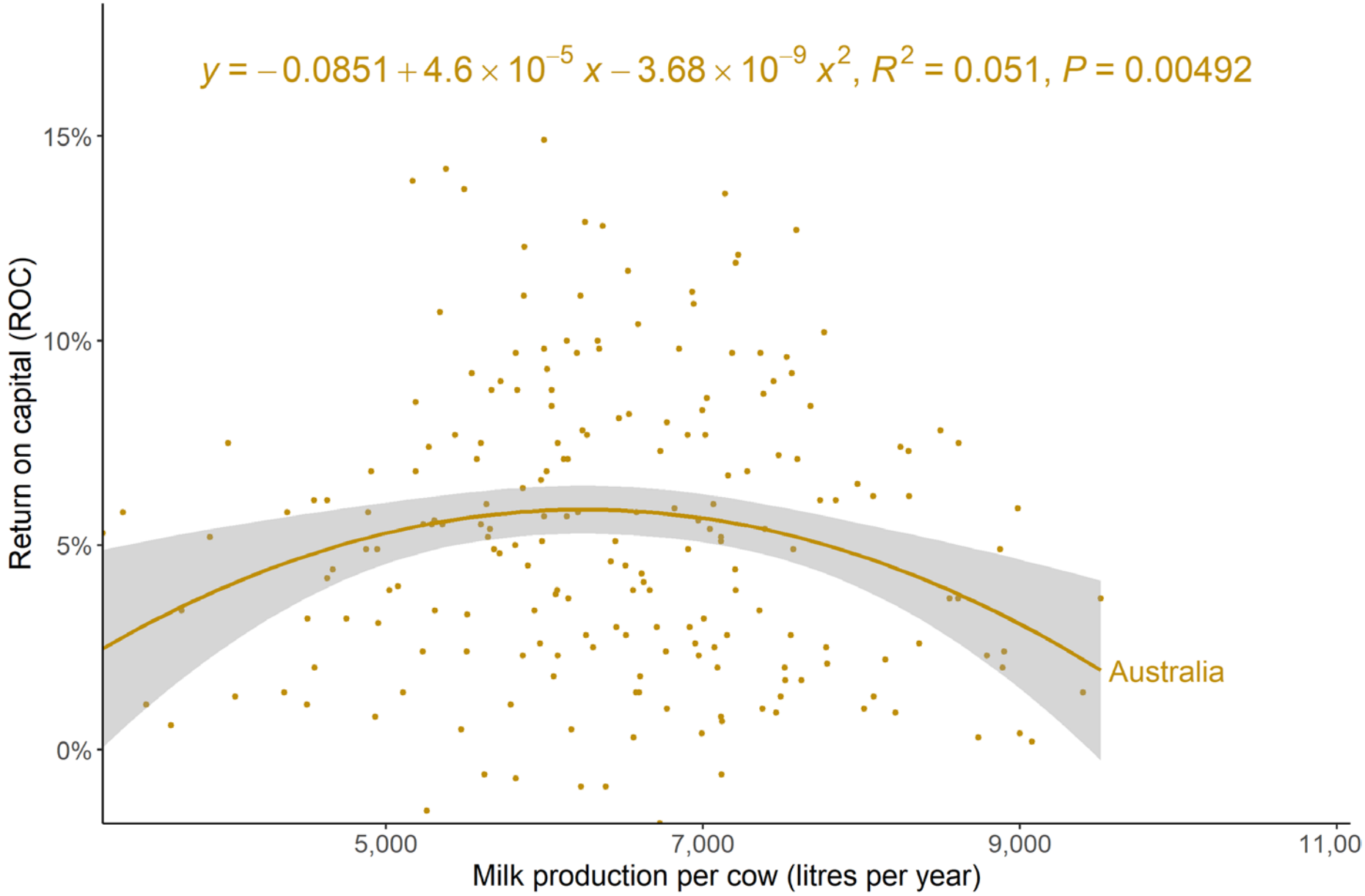
Pasture, concentrate and forage cost in USD per tDM plus ratios of concentrate and forage cost as multiple of pasture cost (forage cost excludes any pasture cost)

2010-2019	Pasture Cost	Concentrate Cost	Concentrate to Pasture Ratio		Forage Cost	Forage to Pasture Ratio	
Victoria (AUS)	$97	$329	3.4	240%	$183	1.9	89%
Tasmania (AUS)	$69	$376	5.5	446%	$192	2.8	178%
New Zealand	$43	$284	6.6	560%	$231	5.4	436%
South Africa	$88	$336	3.8	282%	$142	1.6	62%

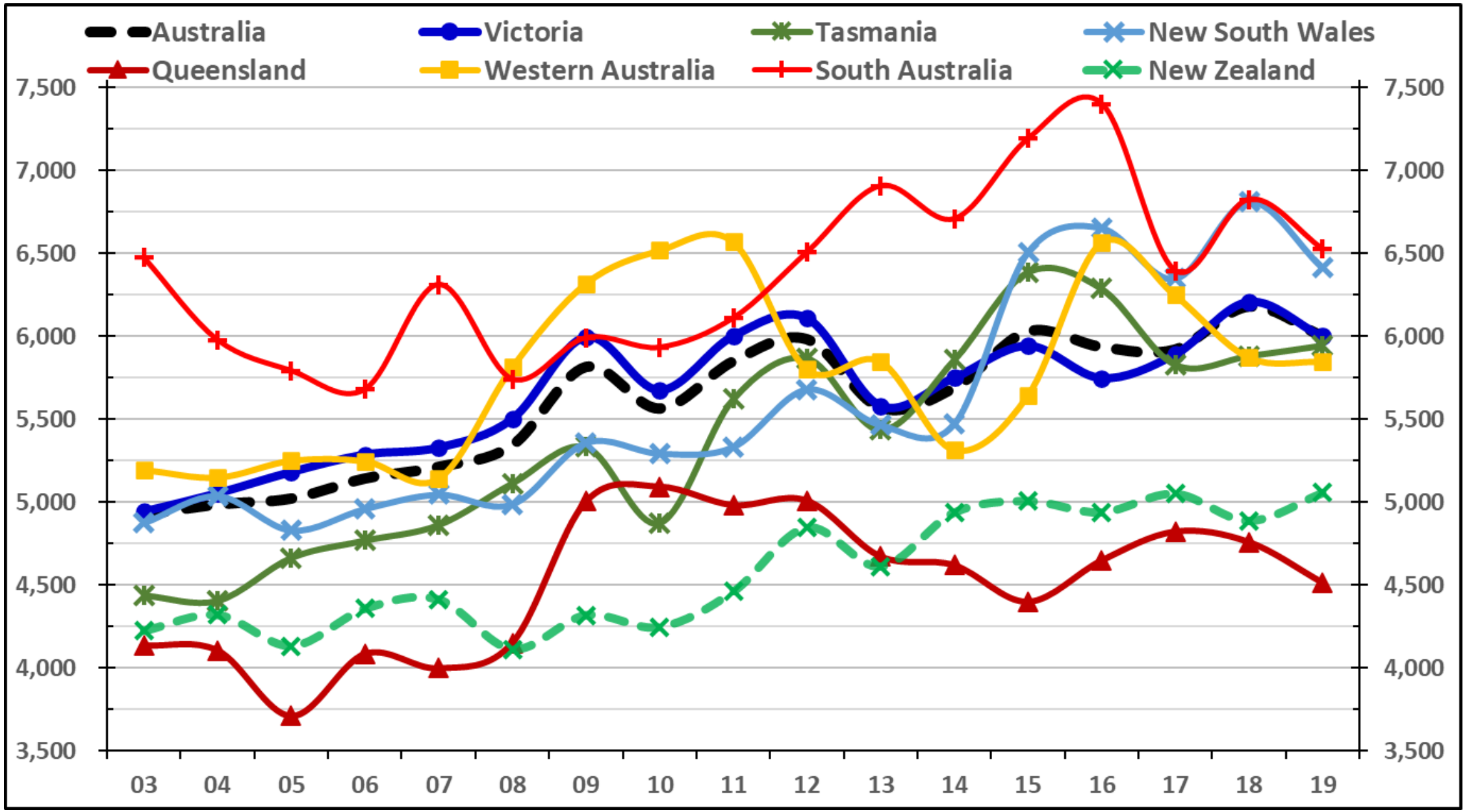
Milk production per cow (litres ECM)



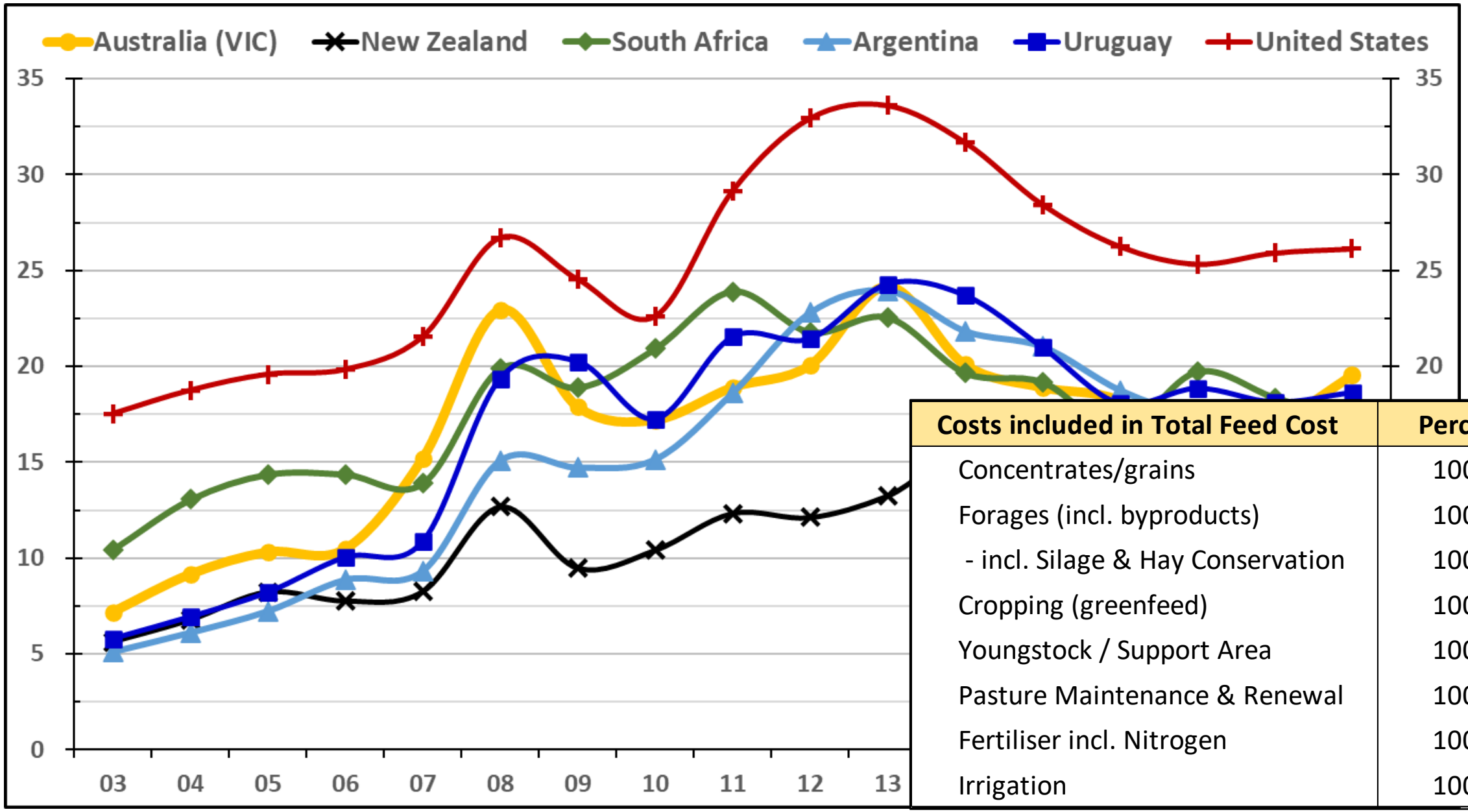
Impact of increasing milk production (ECM litres per cow) on profit (expressed as return on total capital)



Milk production per cow for AUS, AUS states & NZ (litres ECM)

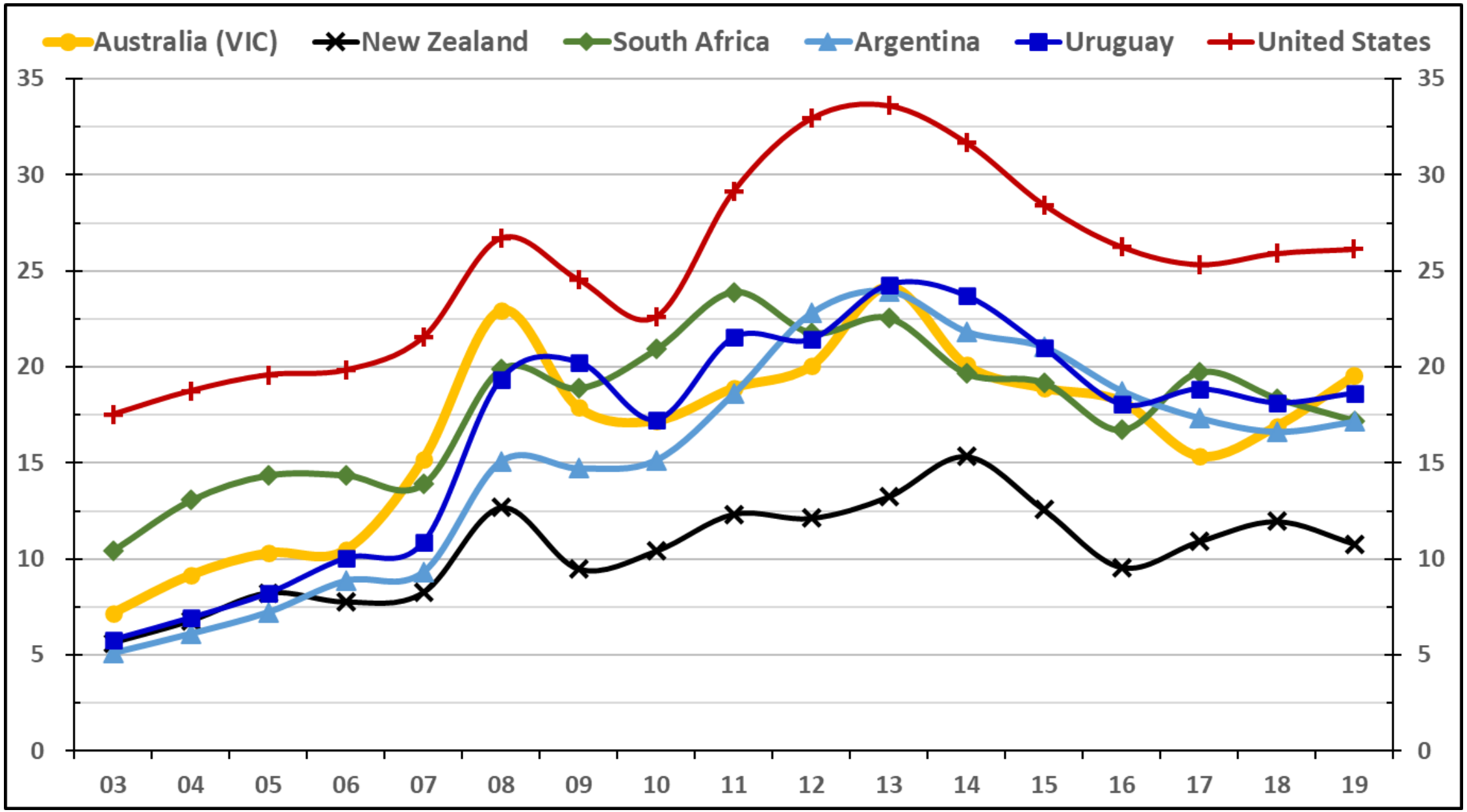


Cost of total feed (supplement & pasture) (USD c/litre ECM)



Costs included in Total Feed Cost	Percent
Concentrates/grains	100%
Forages (incl. byproducts)	100%
- incl. Silage & Hay Conservation	100%
Cropping (greenfeed)	100%
Youngstock / Support Area	100%
Pasture Maintenance & Renewal	100%
Fertiliser incl. Nitrogen	100%
Irrigation	100%

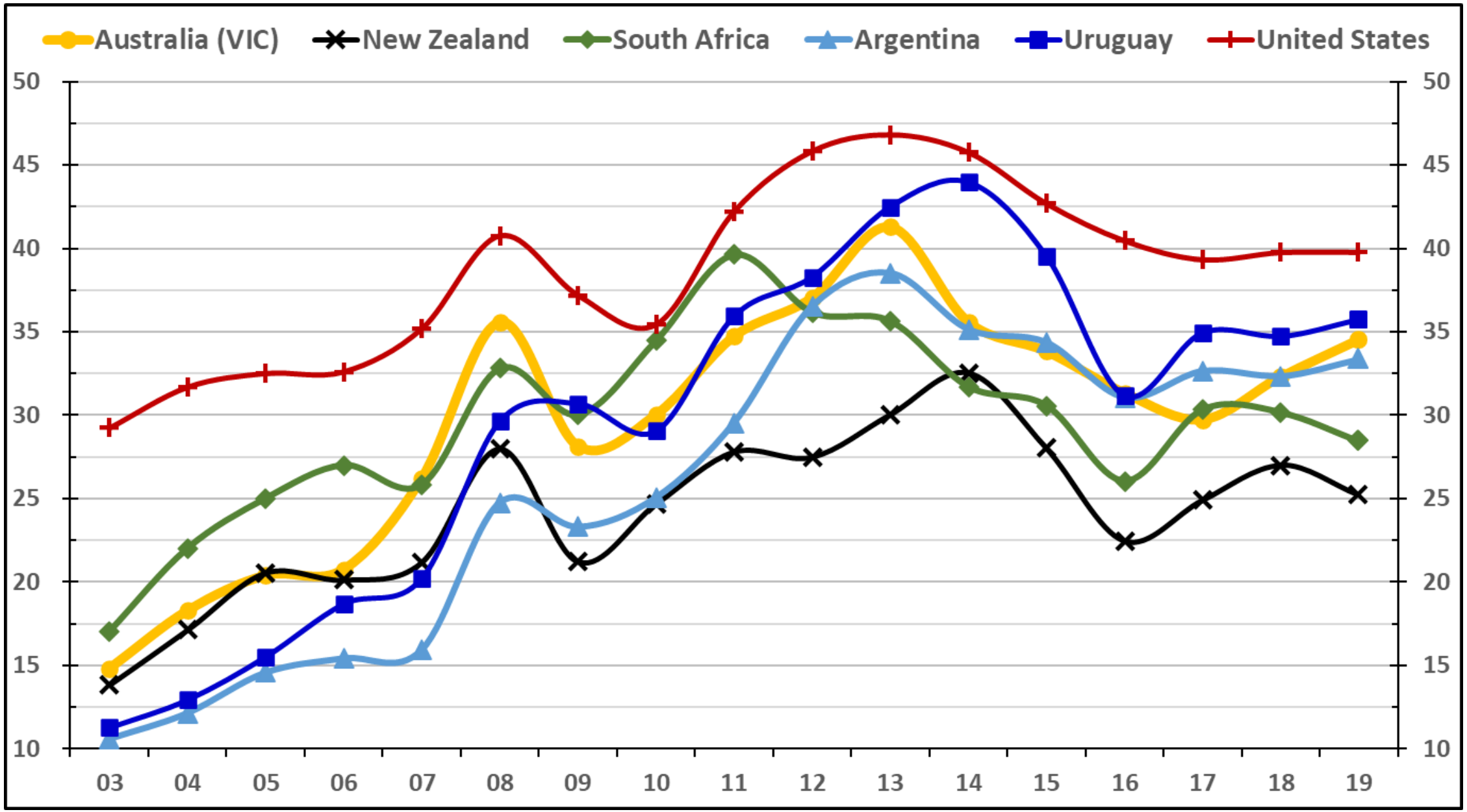
Cost of total feed (supplement & pasture) (USD c/litre ECM)



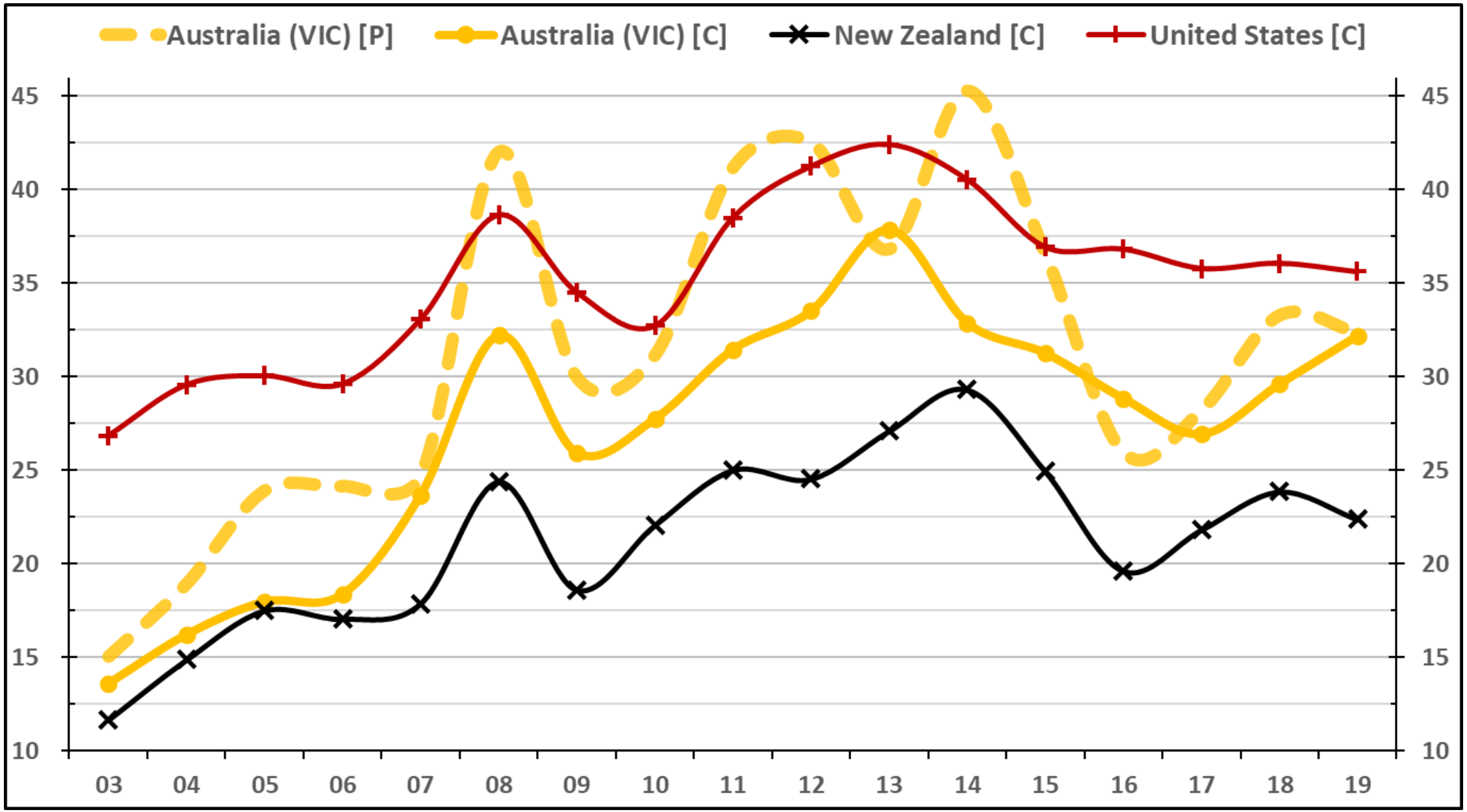
Primary cost areas in USD cents/litre and as percentage of total expenses

2010-2019	Total Expenses per Litre	Total Feed Cost/litre	Total Labour Cost/litre	"All Other" Costs/litre	Feed Cost as % Total Exp.	Labour Cost as % Total Exp.	"Other" Costs as % Total Exp.
Victoria (AUS)	34.0	18.9	6.6	8.5	55.6%	19.4%	24.9%
Tasmania (AUS)	31.7	15.8	7.1	8.8	49.8%	22.4%	27.8%
New Zealand	27.0	11.9	6.0	9.1	44.1%	22.2%	33.7%
United States	41.9	28.3	4.6	9.0	67.5%	10.9%	21.6%
Argentina	32.9	19.3	6.1	7.4	58.8%	18.5%	22.6%
Uruguay	36.6	20.3	6.3	10.0	55.4%	17.3%	27.3%
South Africa	32.3	20.0	3.8	8.5	61.9%	11.9%	26.2%

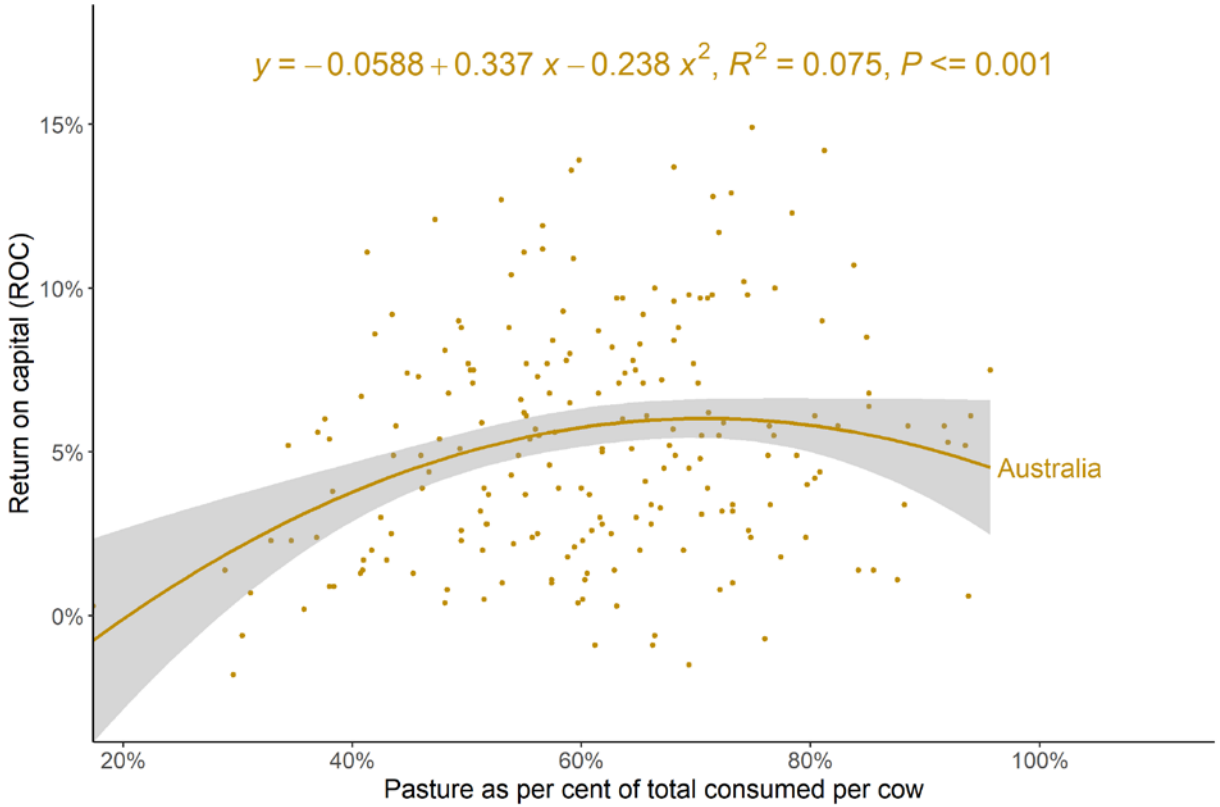
Total operating expenses per litre (USD c/litre ECM)

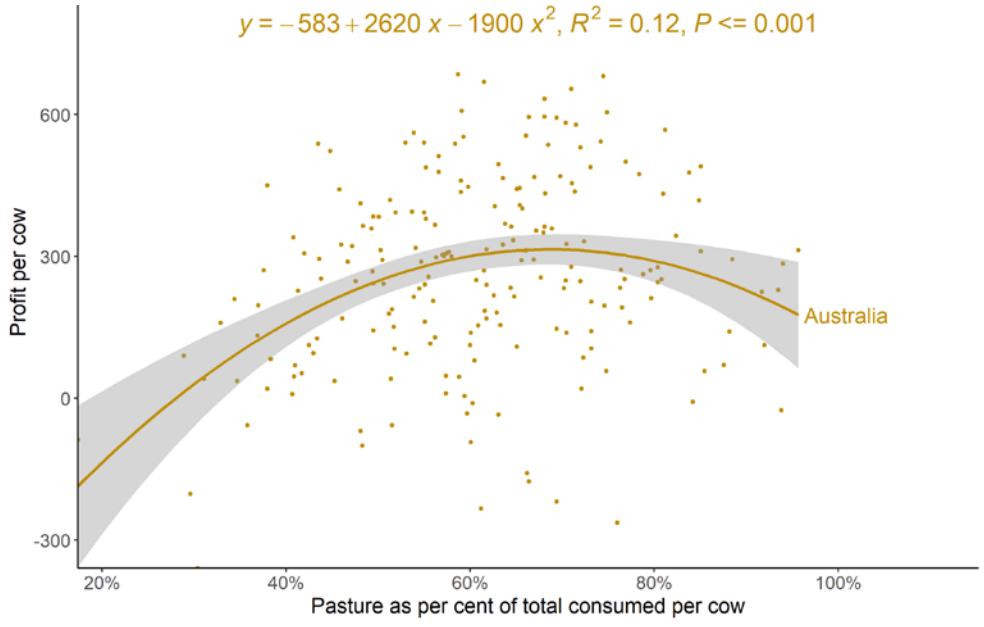


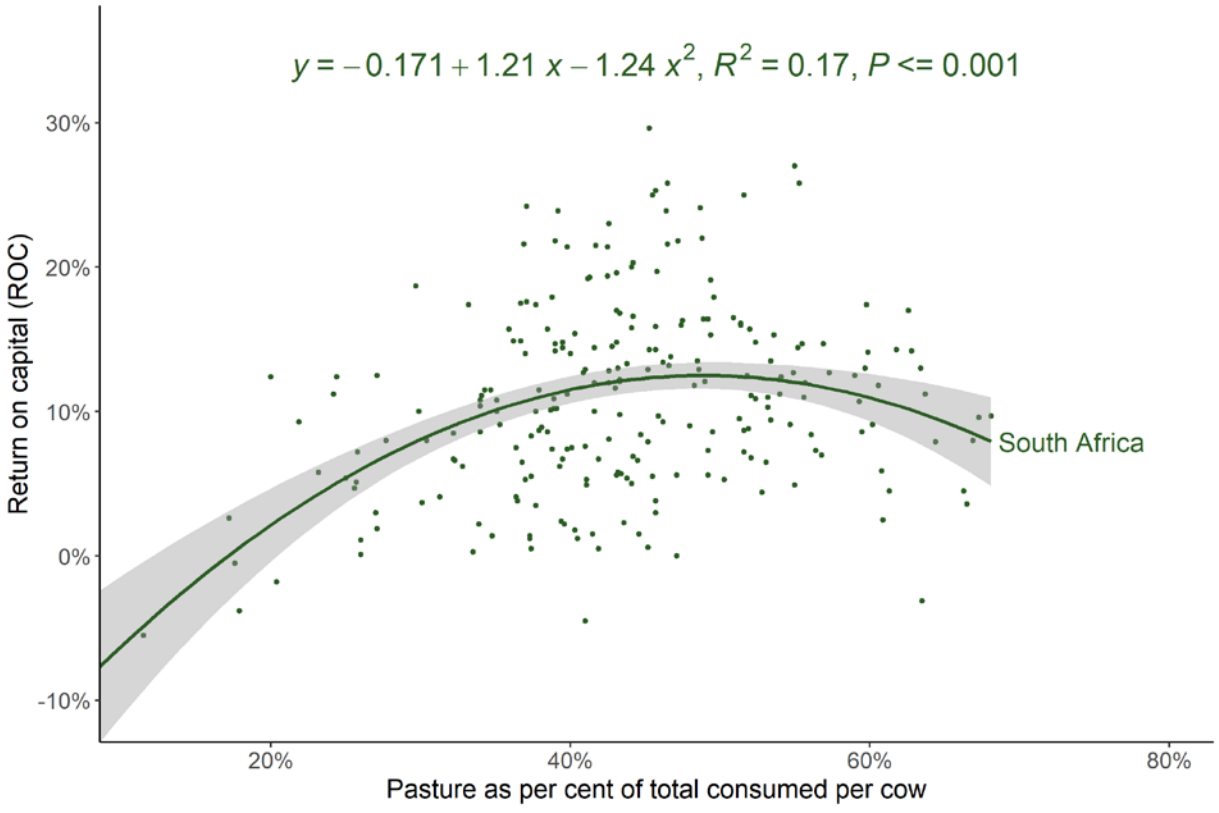
VIC milk price [P] vs VIC, NZ and US CoP (USD c/litre ECM)



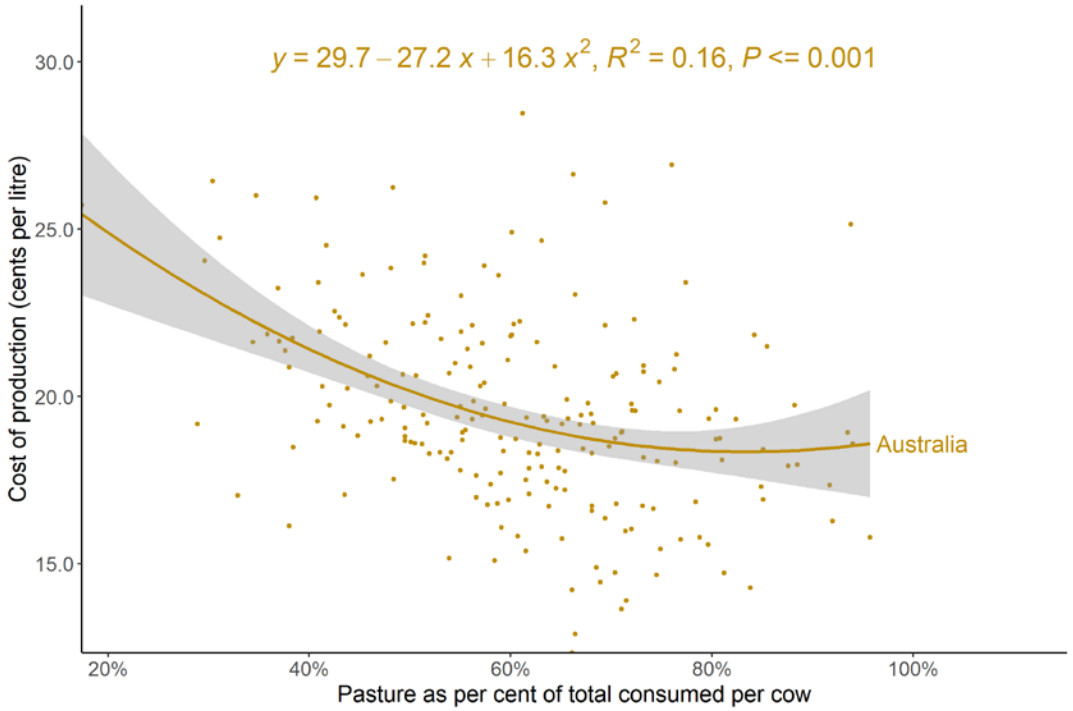
Pasture as % of diet *impact on* profit

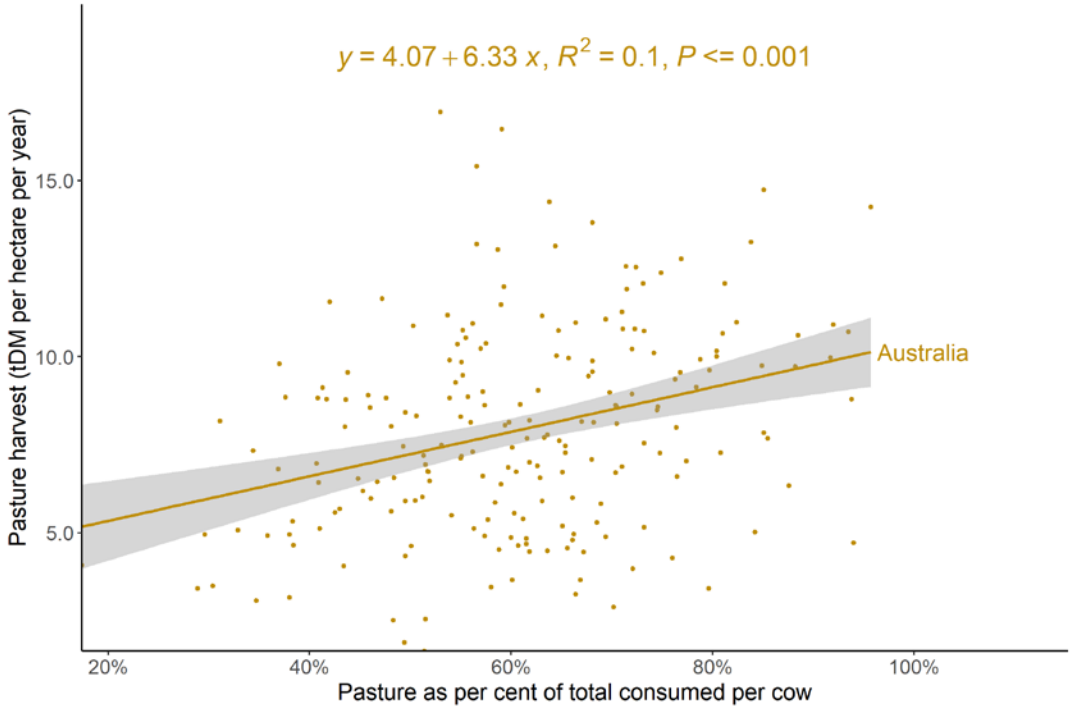


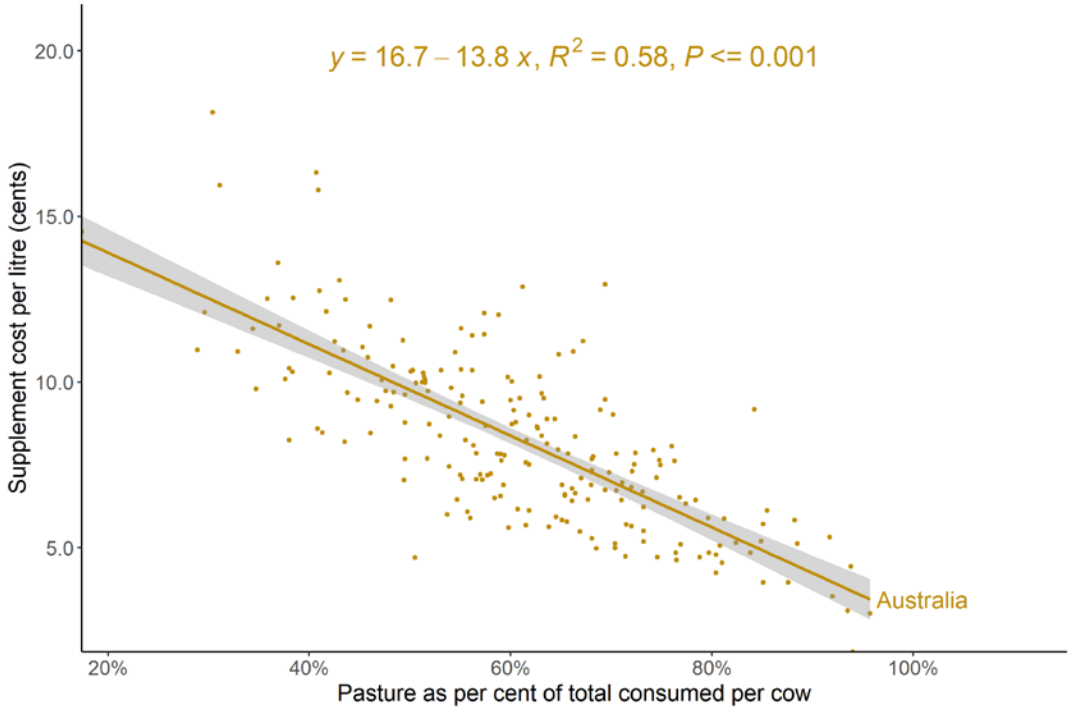


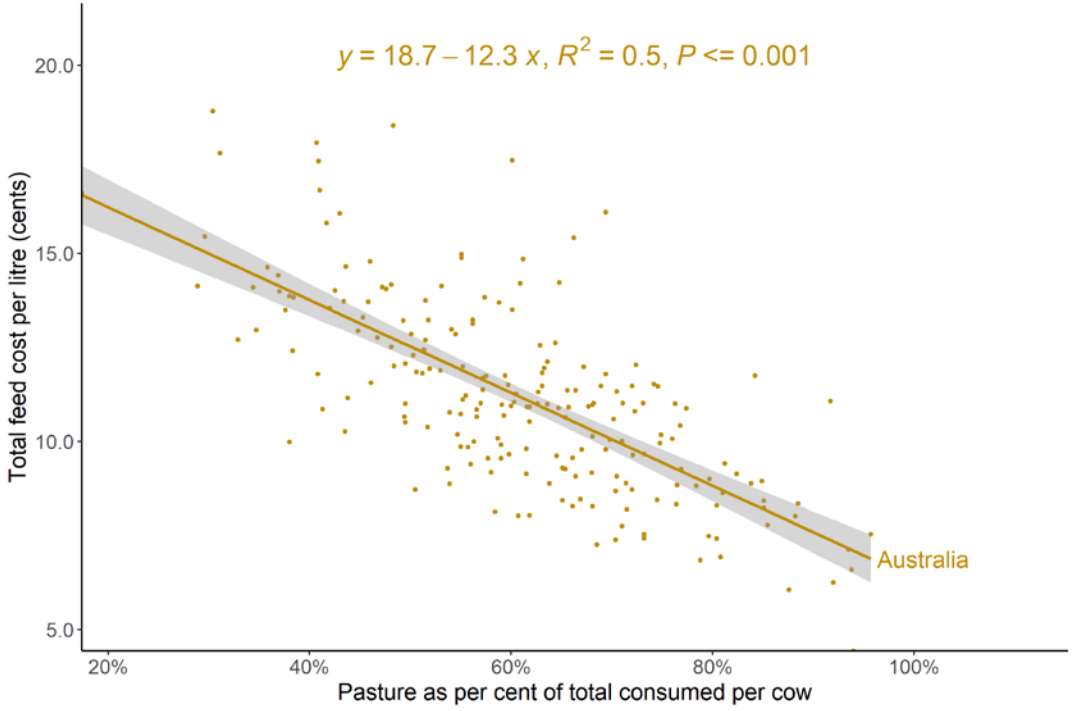


Impact of pasture as % of diet

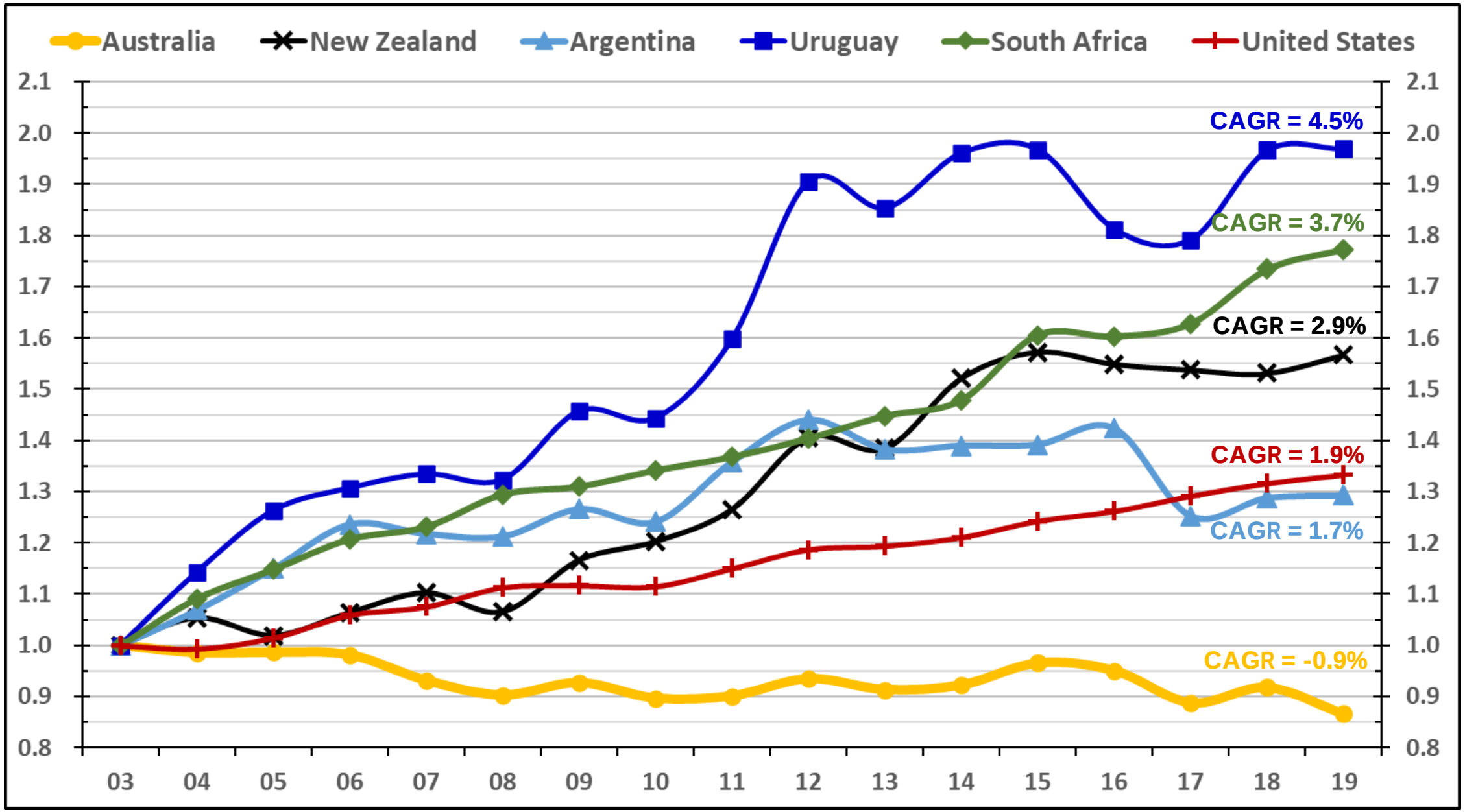




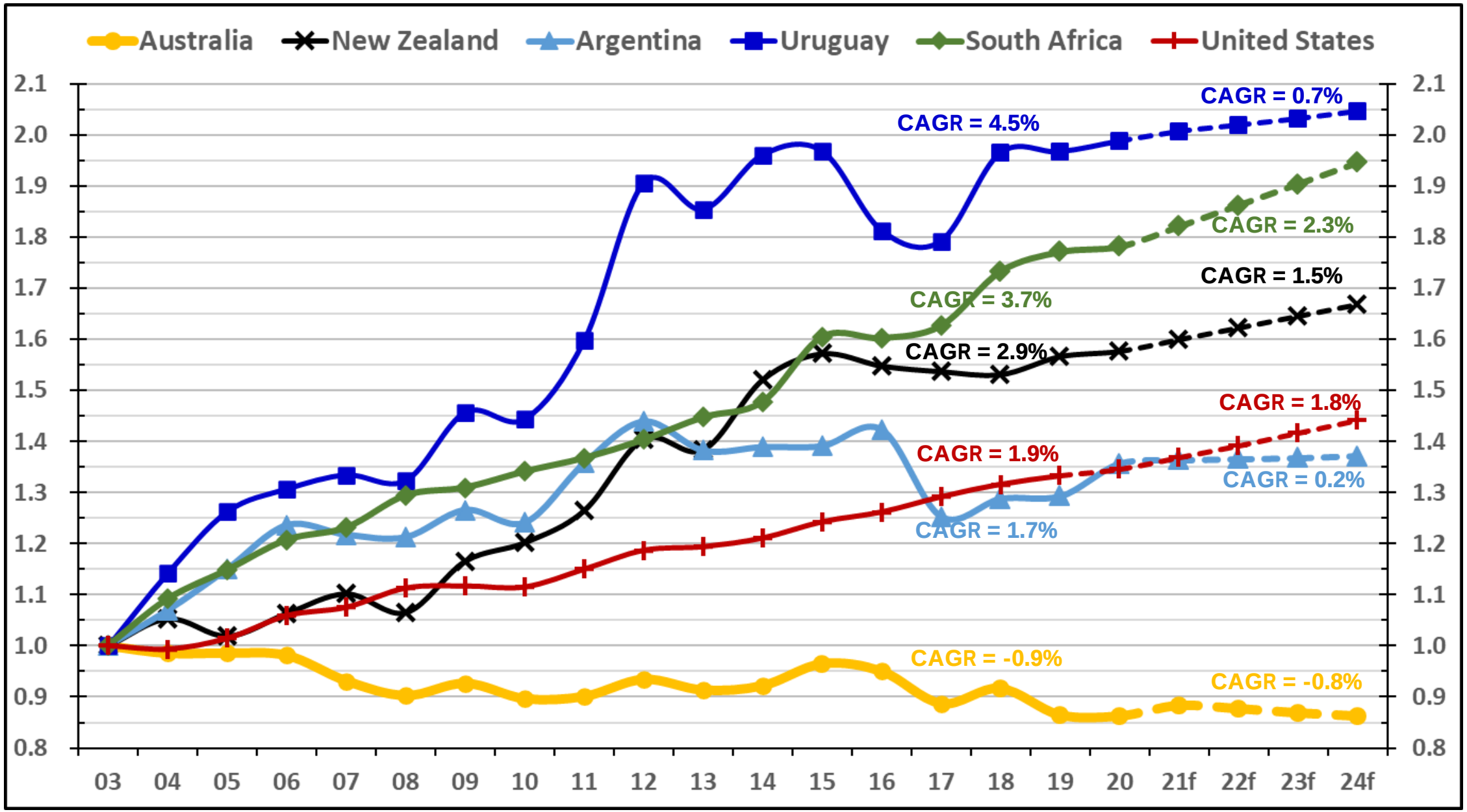




Annual solids corrected milk production (2002/03 Base = 1.00)

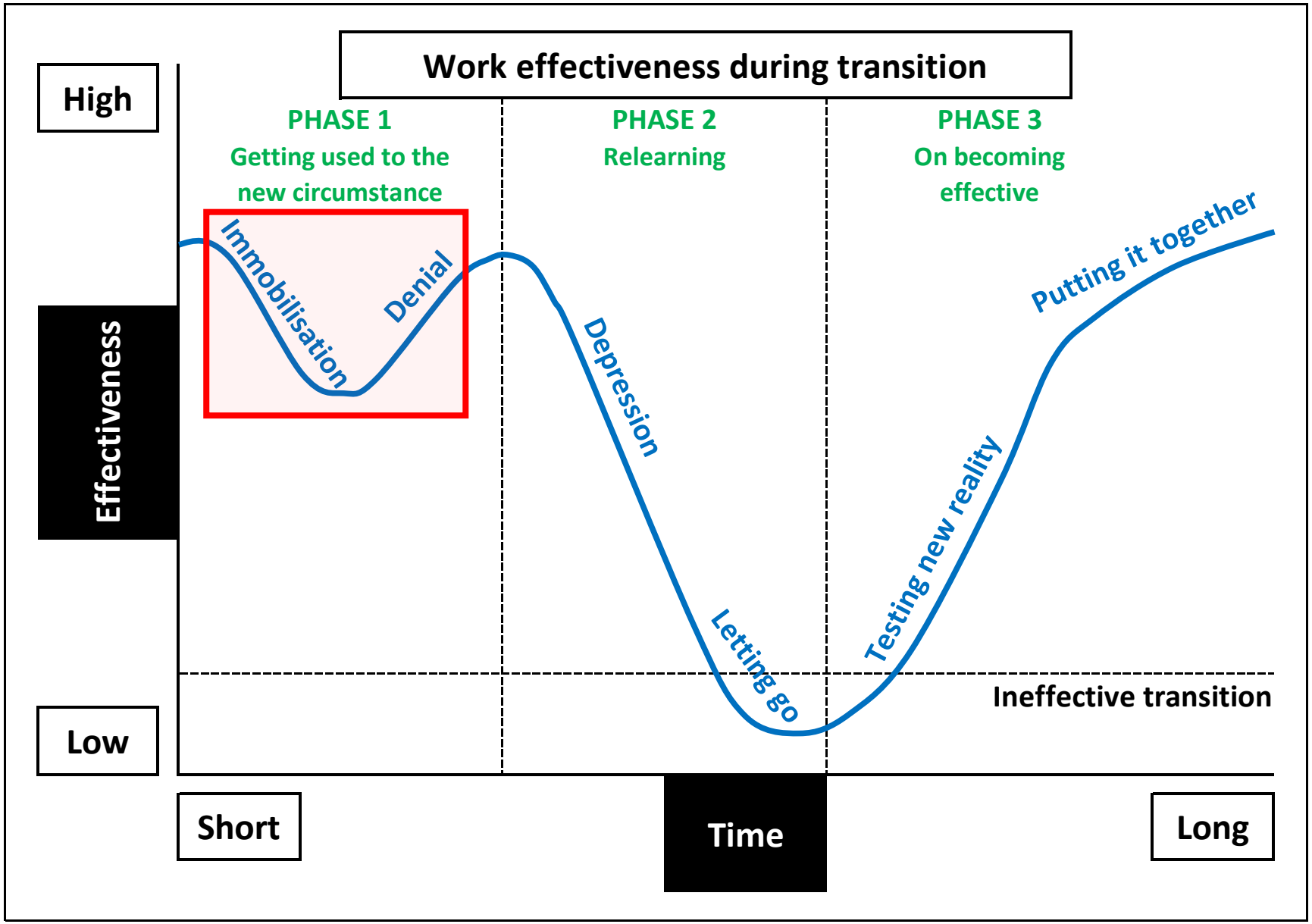


Annual milksolids production (2002/03 Base = 1.00)

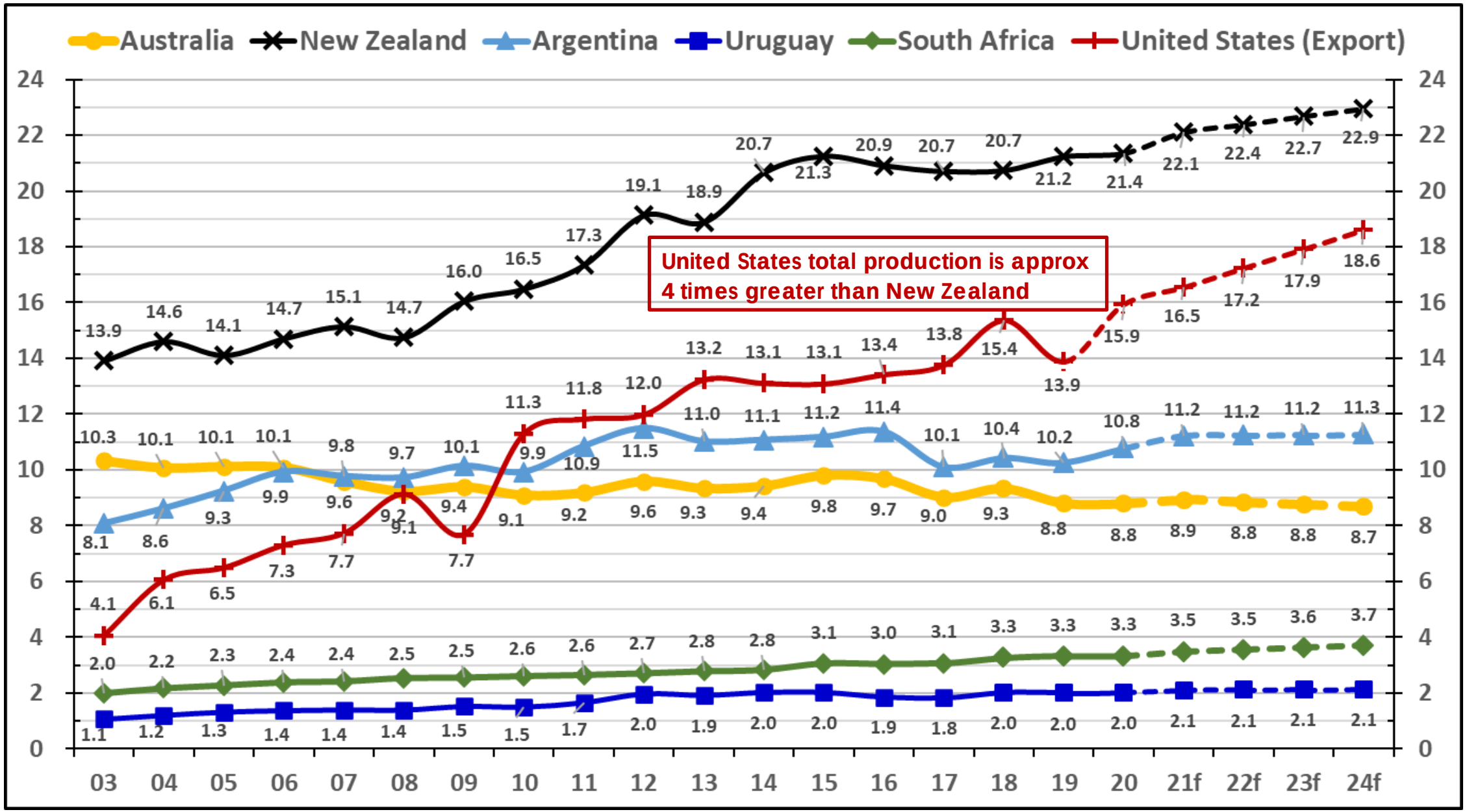


The “change” process – can the industry move forward?

Source: ‘Things the most successful farmers (and their advisors) get right’ by Bill Malcolm & Alex Sinnett

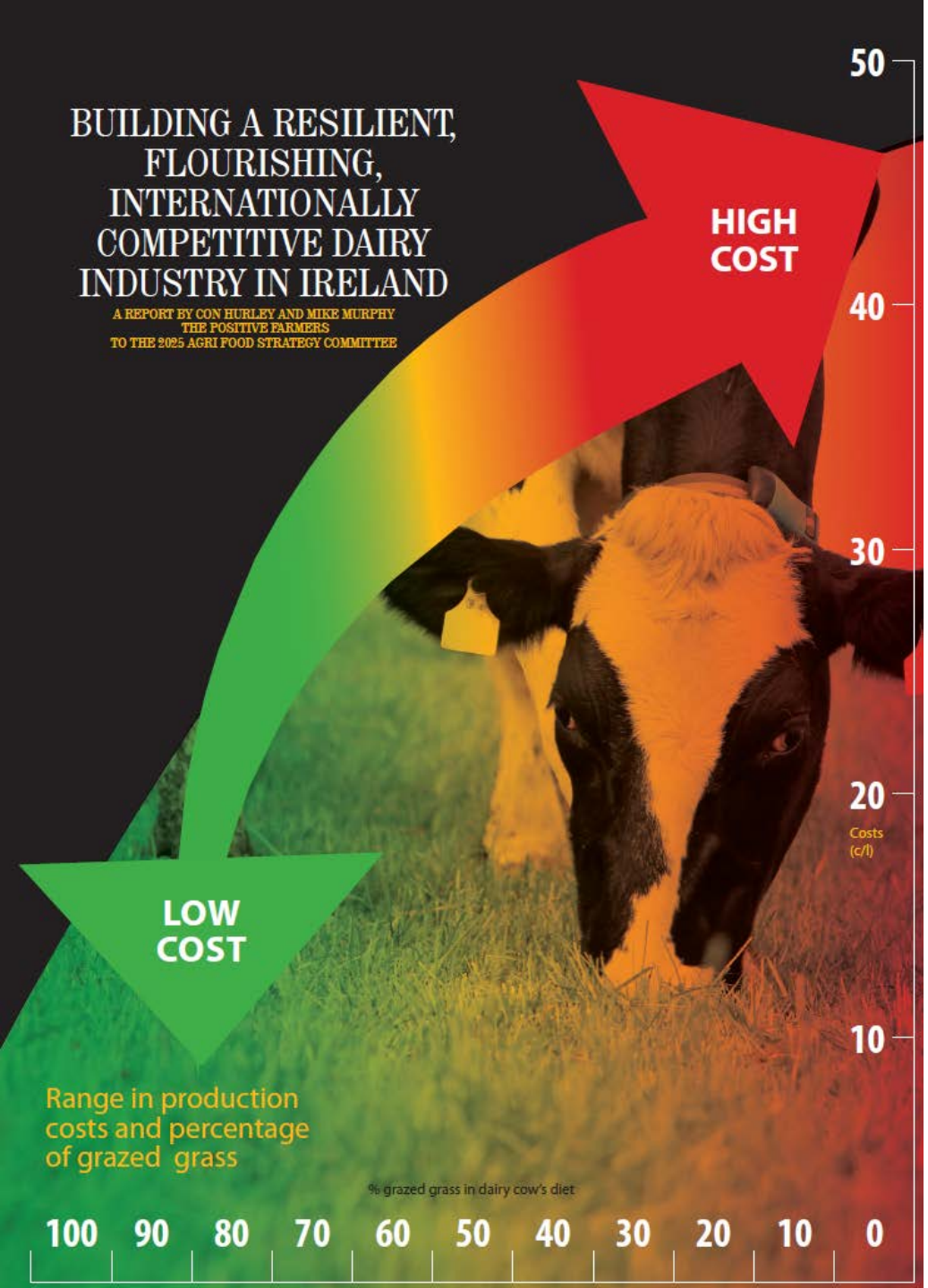


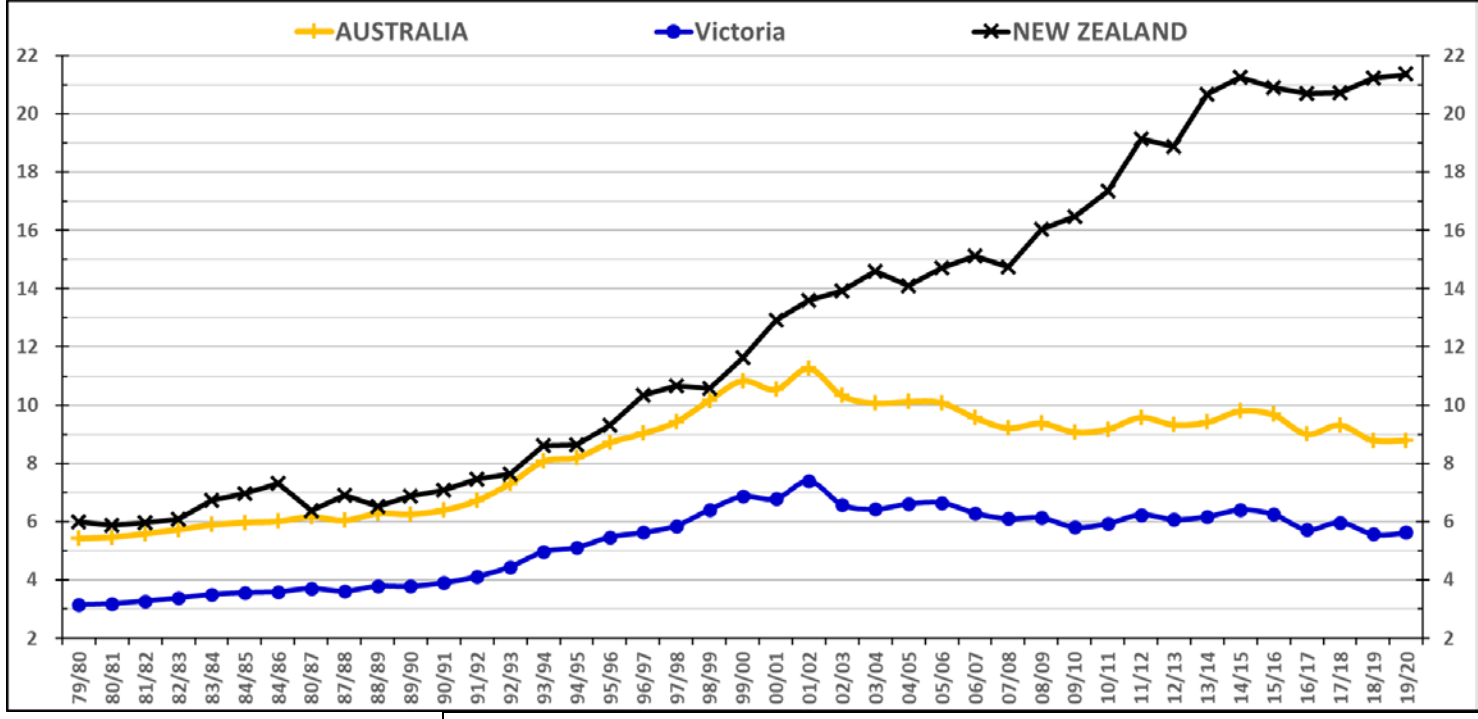
Annual milk production (billion litres)



Summary

1. Evolution in international farm production systems are causing major changes to the competitiveness of different countries
2. Individual countries choices in production system will determine the internal comparative advantage and growth rate of their dairy industry
3. Australian farmers have been adopting production systems that have reduced internal comparative advantage and reduced international competitiveness
4. To regain comparative advantage, large numbers of farmers need to significantly increase the percentage of pasture in the cow's diet (plus 10%-15%)…though this may require a change in cow type
5. One positive aspect; this would be a "back to the future" moment…adopting production systems that were common 20-30 years ago and utilising existing skills





Can a better future be built ...?