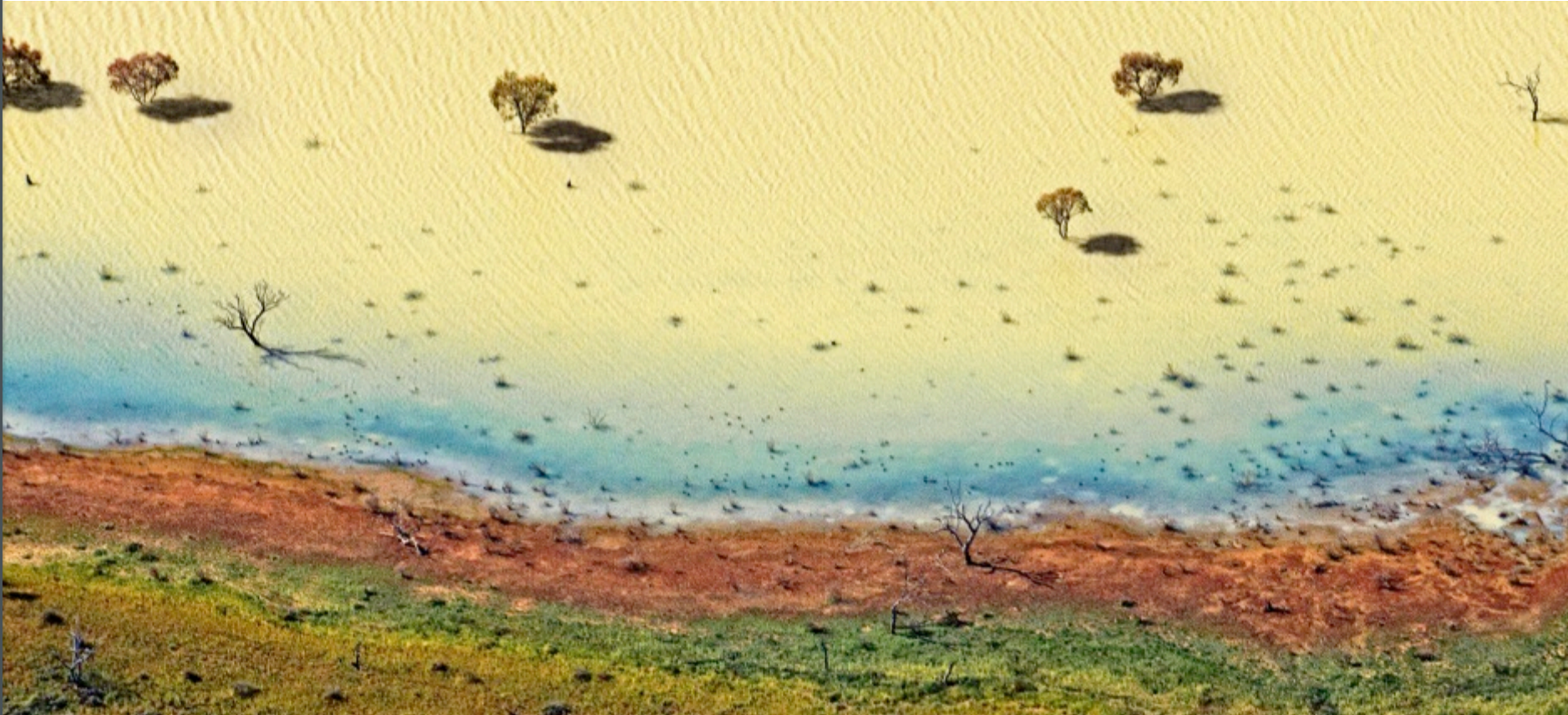


Southern MDB water market

Market insights and 2017-18 outlook



ICE WaRM – Managing your water asset workshop - Loxton

Daniel Baker | Monday 3 July 2017

A I T H E R

About Aither

Aither provides independent analysis, insight, modelling, and advice on water markets and water sector investments

- Aither team members have extensive experience working with the private sector and government in the design, implementation and analysis of Australia's water markets.
- We work with irrigators, banks, government, agribusiness, domestic and international investors, and water infrastructure operators.
- We are independent, with no stake in the market.
- Aither publishes a free annual southern Murray-Darling Basin [water markets report](#).
- We provide [monthly water market updates](#) commissioned by H2OX.
- Aither operates from Melbourne, Canberra and Brisbane.



www.aither.com.au

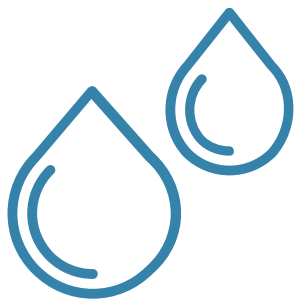
What we are seeing in the southern MDB

Wet conditions have caused record low water allocation prices

The wine grape, rice and dairy sectors remain fragile and exposed to water allocation price risks

Committed nut investment (primarily almonds) and cotton will drive the allocation and entitlement market over the next 5 years

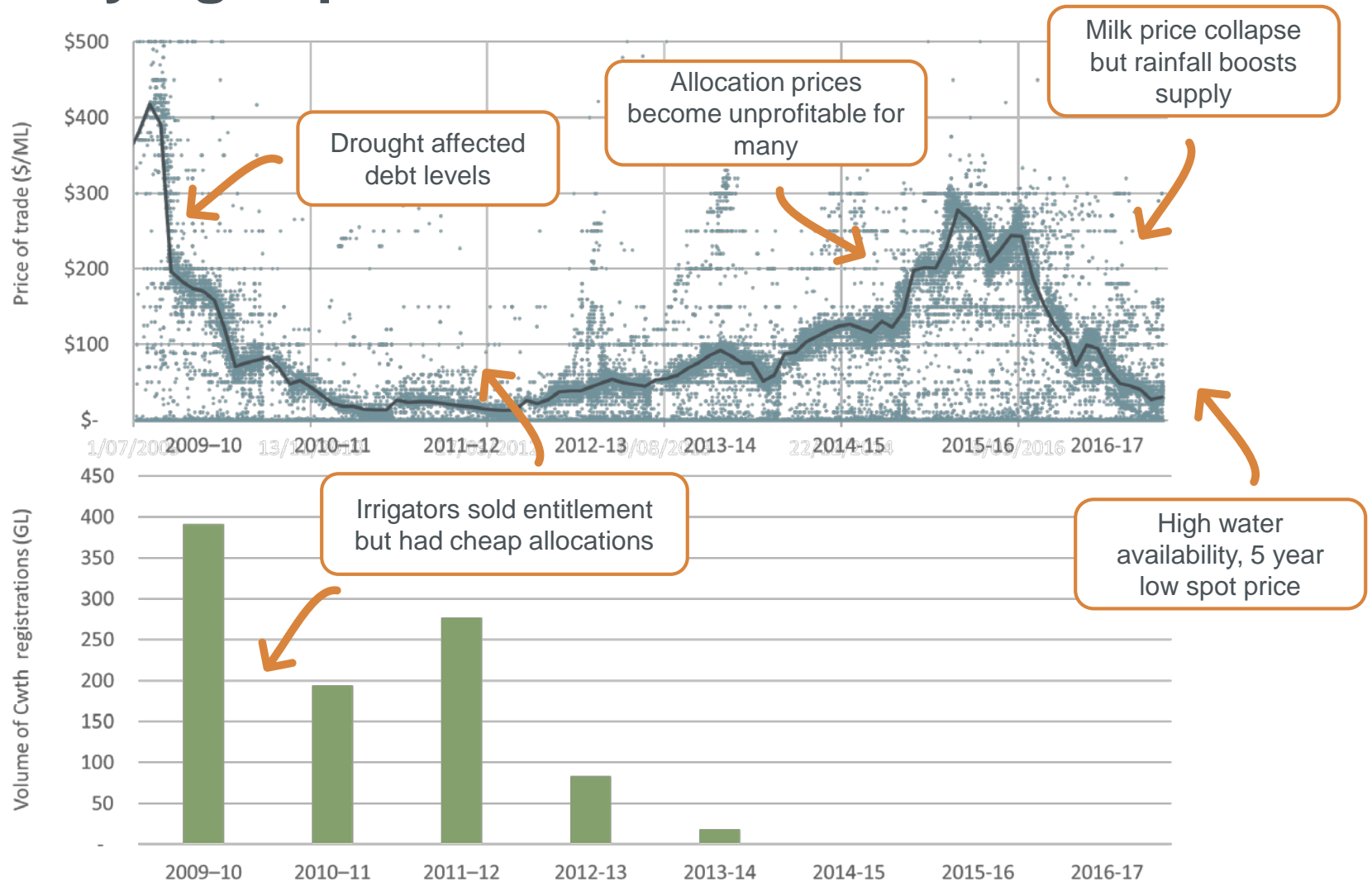
Water entitlement prices remain at record highs



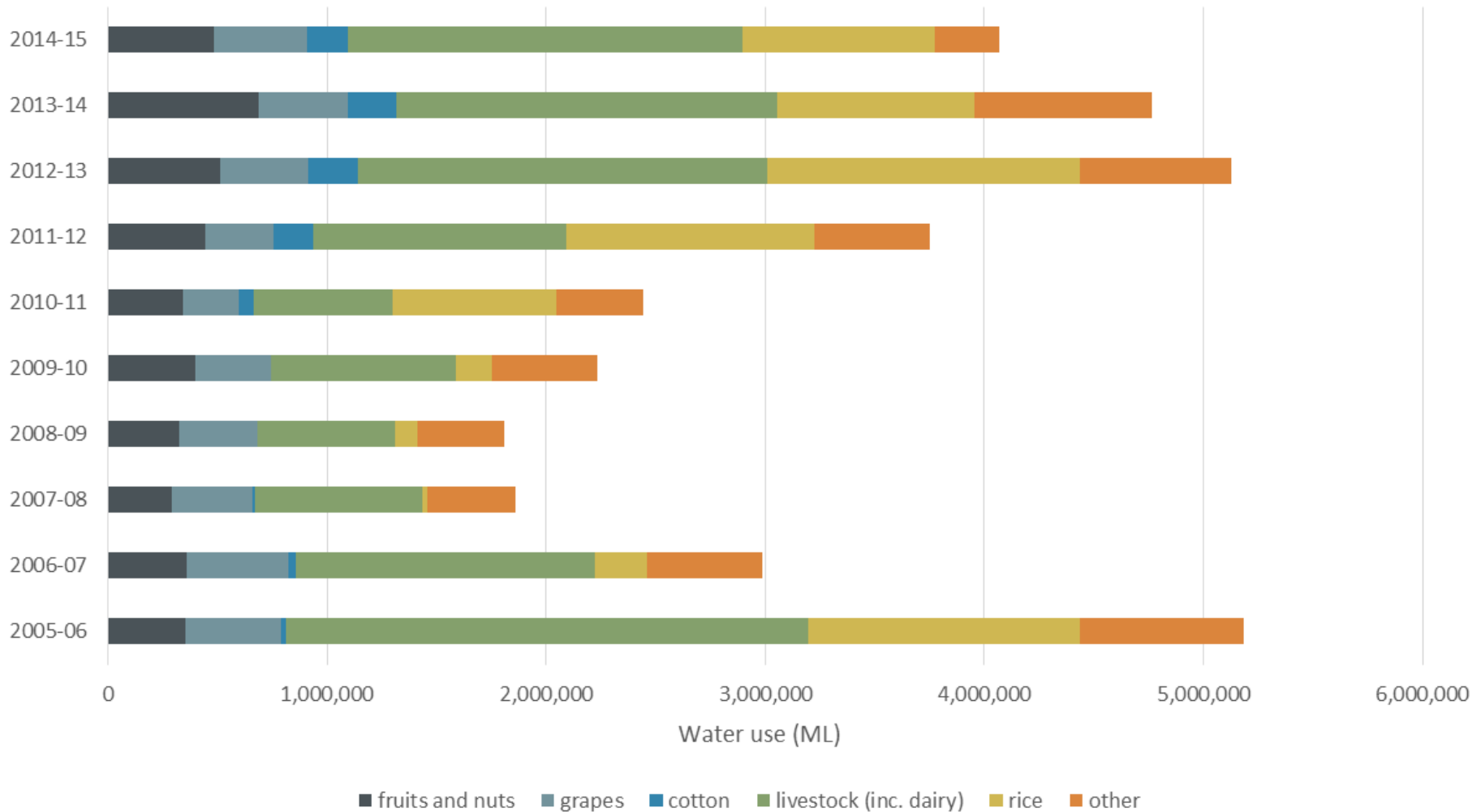
The ability for producers to manage water input risk (price and availability) is improving as water markets mature

Expect multi-year water allocation forward products to shape the management of water risk over the next few years

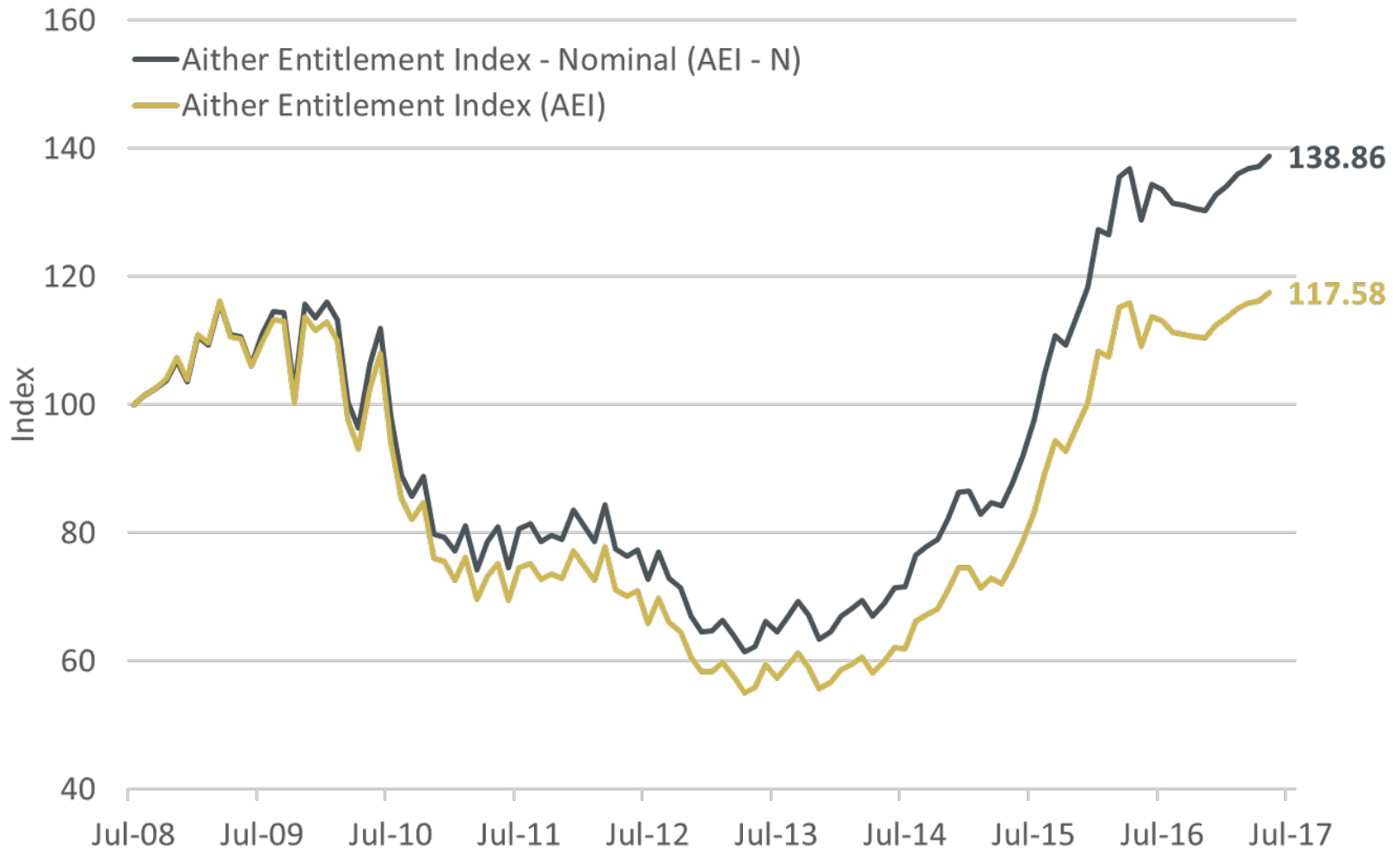
Record low water allocation prices, but underlying exposure



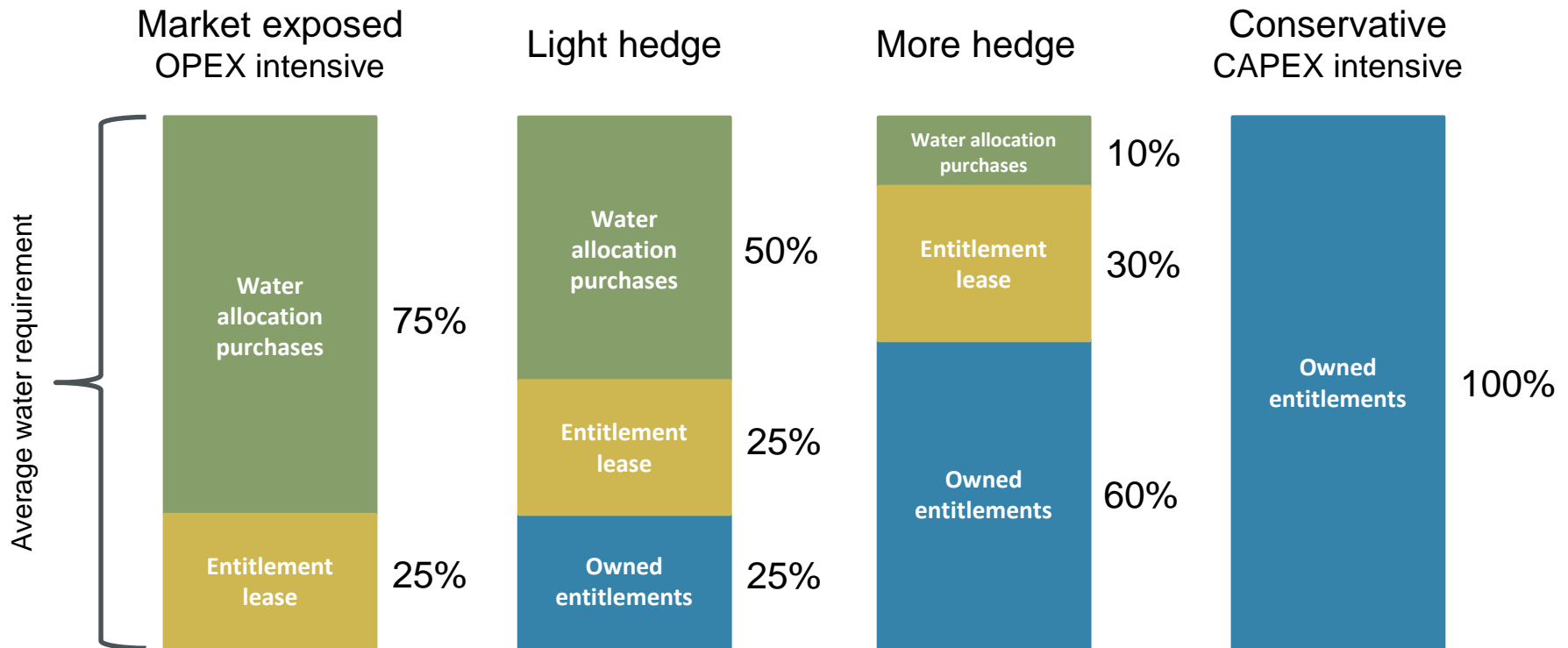
Changes in sMDB irrigated agriculture production, growth in nuts and cotton



Record high water entitlement prices, equals high capital barrier to entry

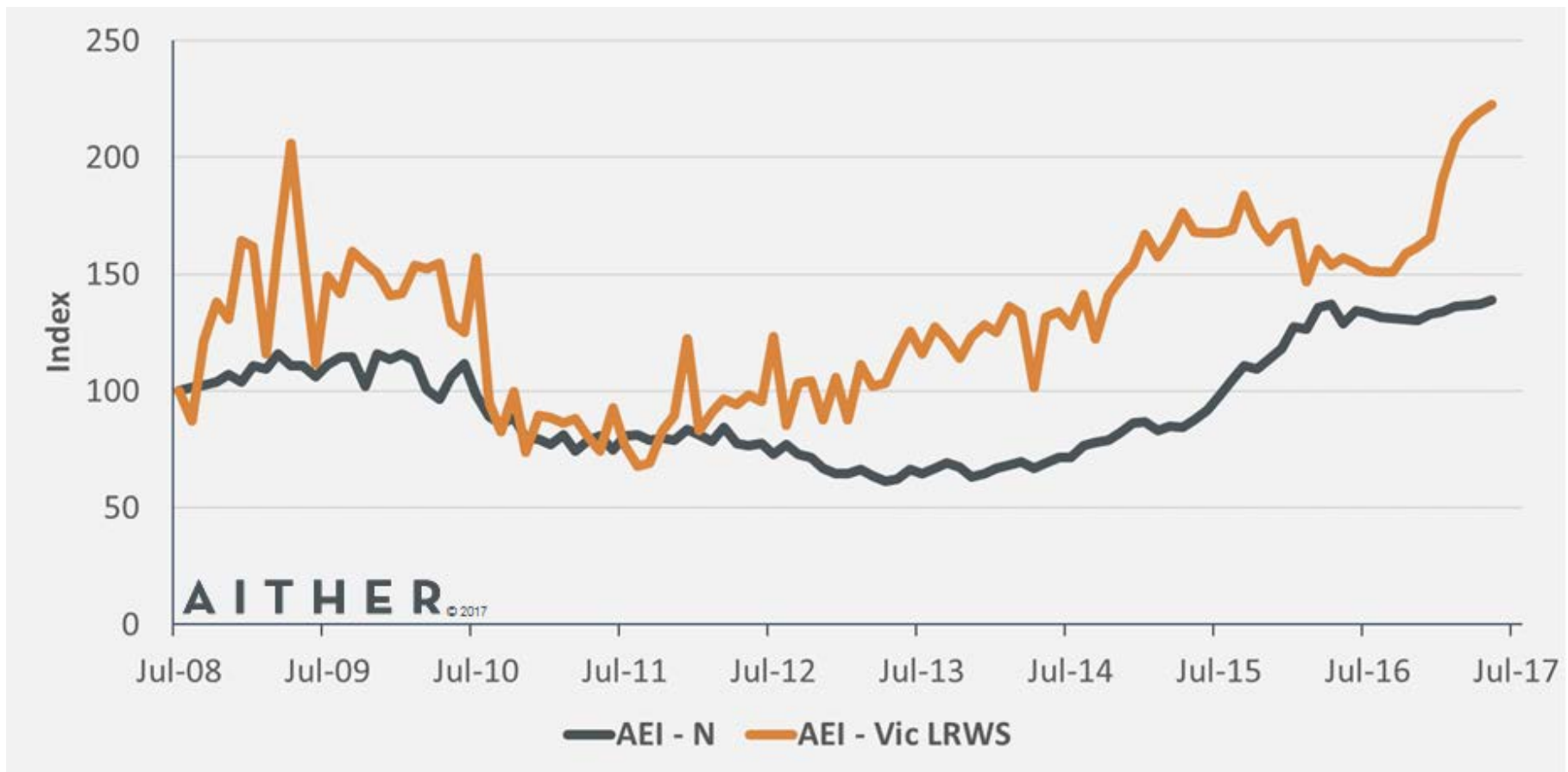


Traditional portfolio options, generally capital intensive or market exposed



Note: 100 per cent entitlement \neq 100 per cent reliability in all years

Buying or leasing Vic LRWS for carryover, a very contested and crowded market



Using the forward market to manage water risk

A forward is a contract entered into today to have physical water transferred at an agreed price and time in the future

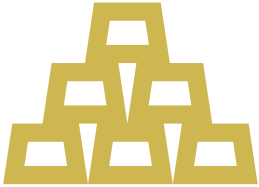
- Buyer can lock in known cost of water as an input to production
- There is no “allocation risk” for the buyer as there is with entitlement leases
- 1 year forwards have become relatively common, but starting to see more 2 and 3 year forward products emerging
- Pricing of forwards is still not particularly efficient on both the buy and sell side

How to price a water allocation forward

The value of a water allocation forward contract should be based on:

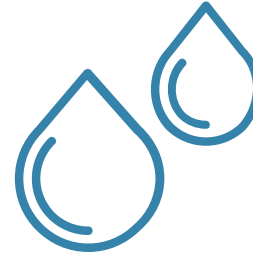
- The current spot price of allocation water
- The cost of carrying the physical water from today until the forward delivery date
- Transaction and other measurable costs over this period

Why pricing water forwards is different to other physical commodities



Gold

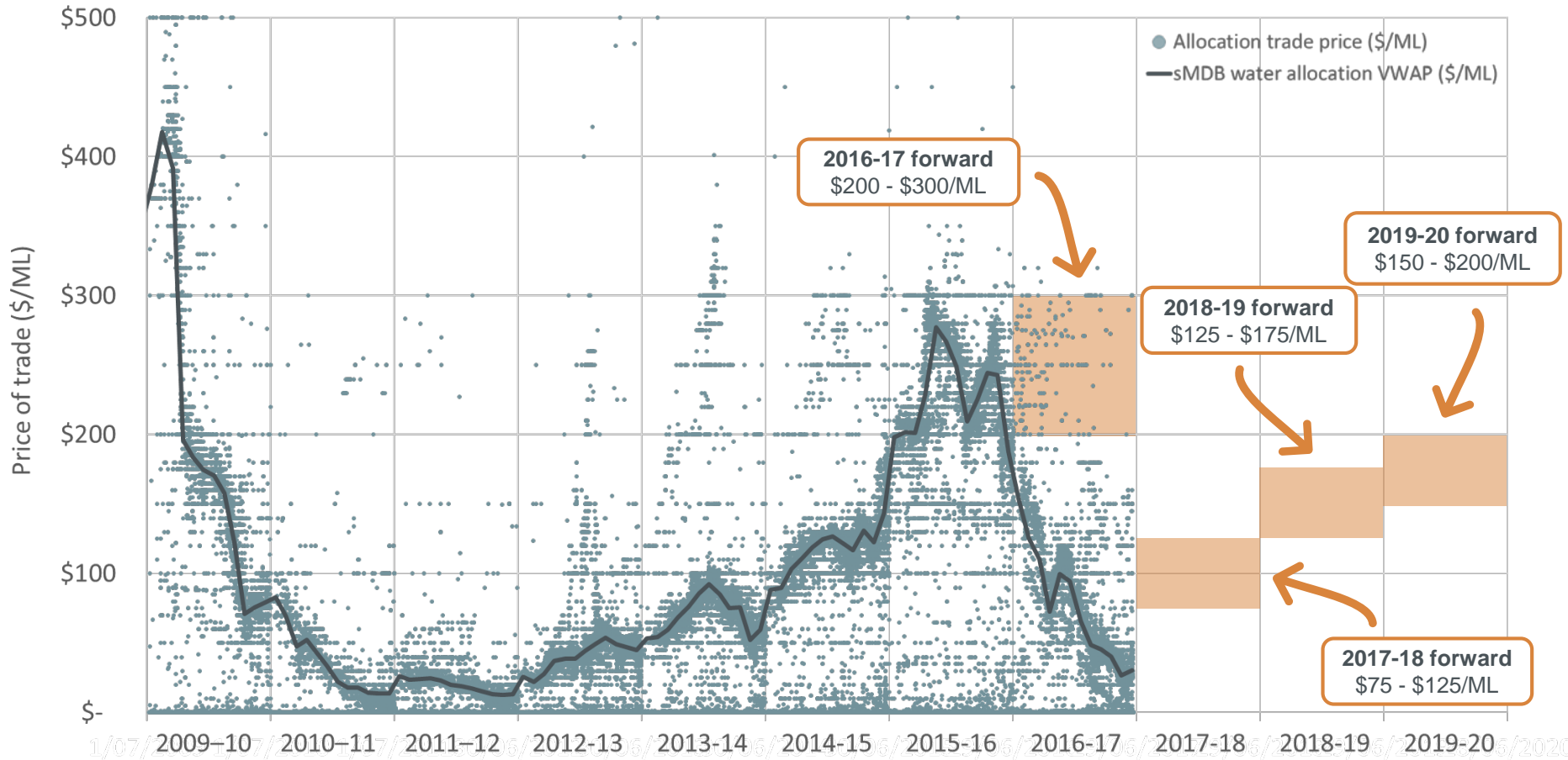
- Today we buy 1 ounce of gold
- We store this in a warehouse
- There is a known annual cost of this storage
- In one year we pay storage costs and withdraw our 1 ounce of gold
- We still have 1 ounce of gold
- So we can be relatively certain we can deliver 1 ounce of gold forward by buying and storing 1 ounce today



Water

- Today we buy 1 ML of water allocation
- We store this against our 1 ML of water entitlement in a dam for one year (across 30 June)
- There is a known annual cost of this storage
- However, over the year we may both forfeit or gain stored water based on carryover rules, dam spills or allocations to our entitlement
- So we can't necessarily be certain that we will have more or less than 1 ML of water to deliver by buying and storing 1 ML of water today

Southern MDB forward market price outlook



2017-18 water year outlook

- Opening season water allocations – slightly higher than expected in NSW
- Opening season allocation prices
- Aither's 2017-18 average annual southern Murray-Darling Basin water allocation price estimate
 - below \$50/ML under a wet inflow and rainfall scenario
 - \$40 to \$70/ML under an average inflow and rainfall scenario
 - approximately \$100/ML under a dry inflow and rainfall scenario

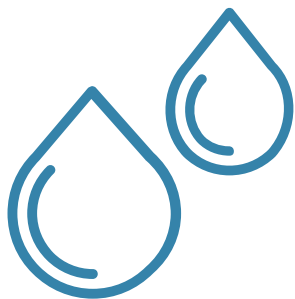
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