Australia's role in world grain markets: Now (and the next century)

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Simon Bentley

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Our purpose this morning

- First, to understand, briefly, what has been happening in global grain markets. How did we get here and what has this meant for Australian grains?

- Second, to understand where the momentum in world markets is leading us short term

- Third, to gaze into the more distant future and figure out what it might look like

- Finally, to see how Australian grains stack up as regards competitiveness in light of these developments

A brief history of world grain markets:

What determines Australian crop prices?

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Let's begin with a crop balance

yield X Area (price) ≅ Per cap demand (G, price) X population

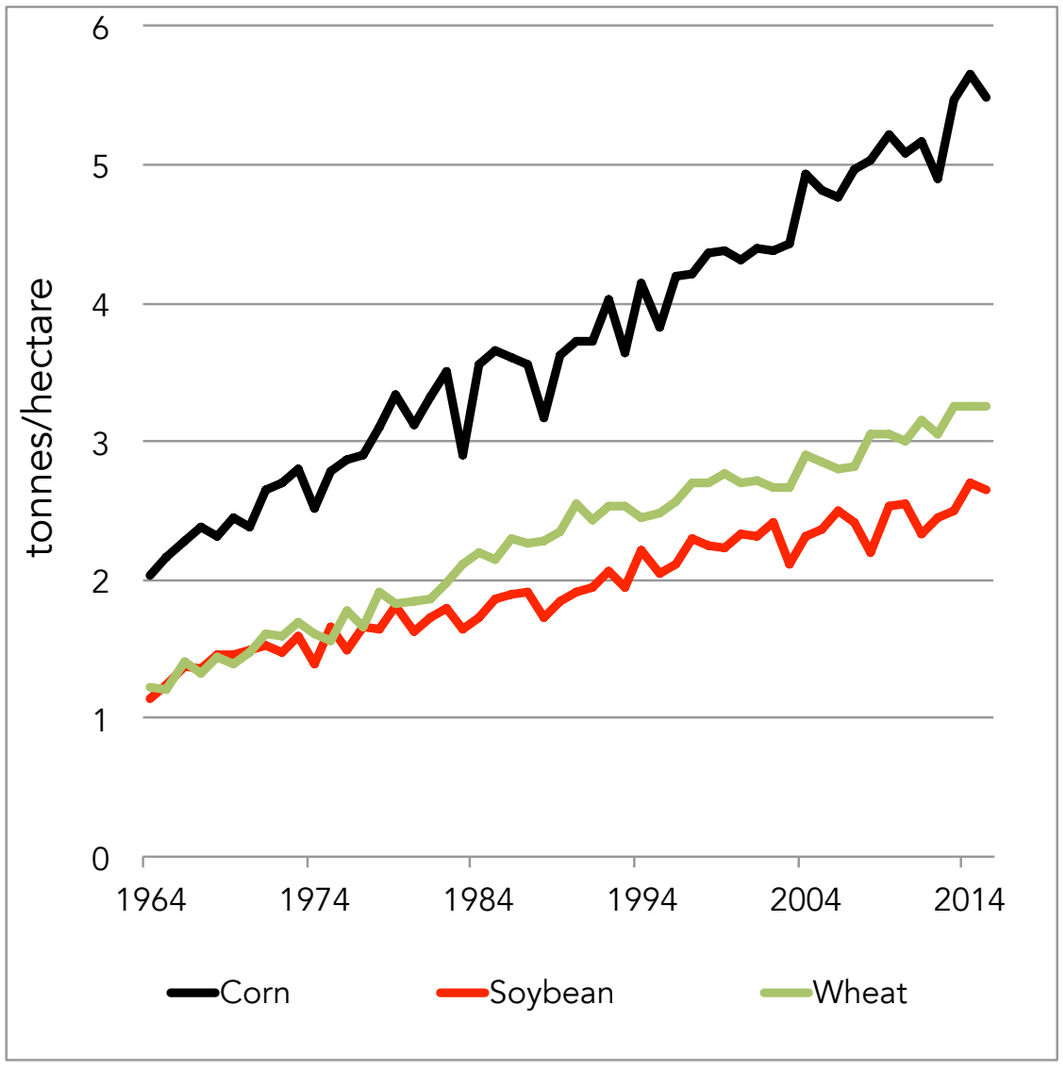
Which in growth terms, becomes…

Y + A ≅ D + P

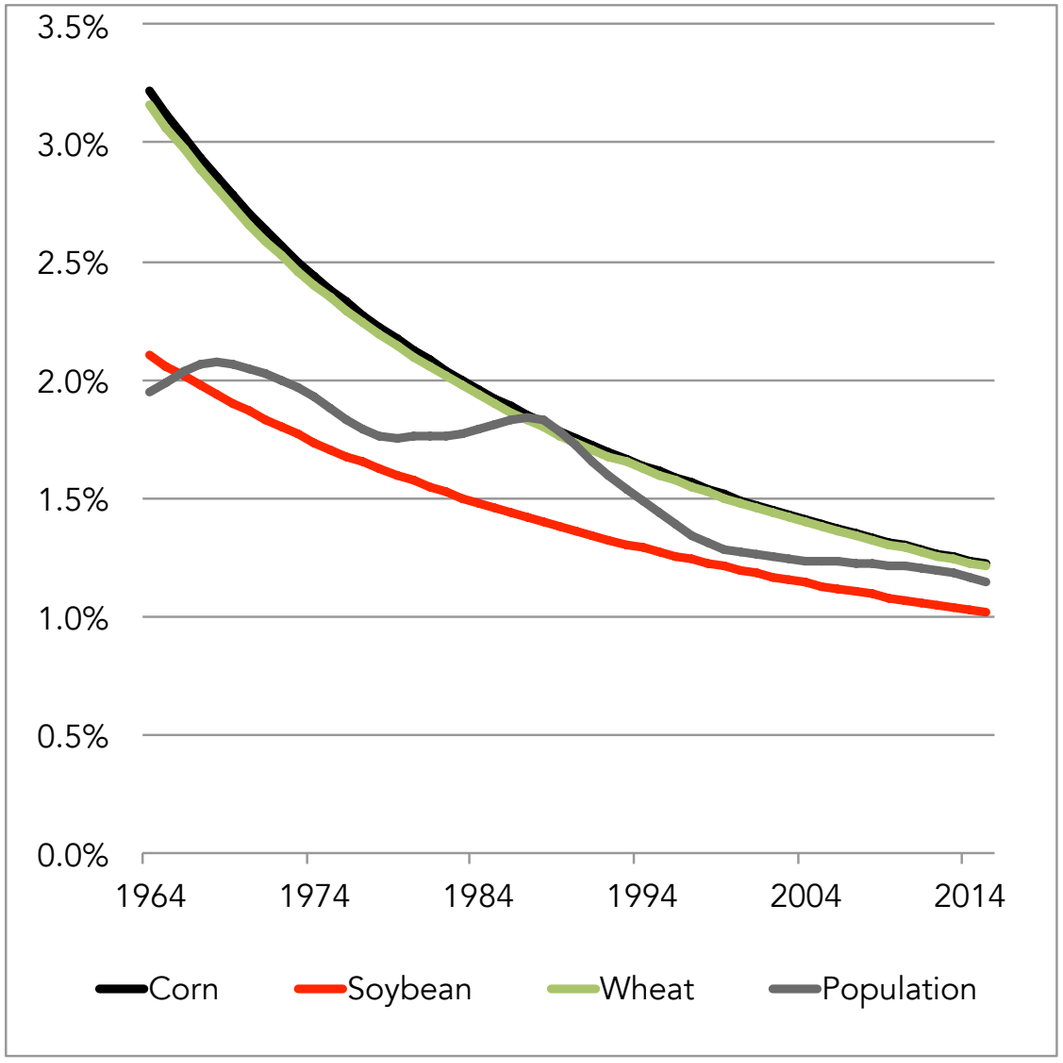
(and all the variables are percentage changes)

This helps us because crop productivity and population growth are converging…

Linear world yield growth means growth rates are declining, at about the same rate as population as it turns out



Crop yields



Growth in population and yield

…so that they cancel out in the balance

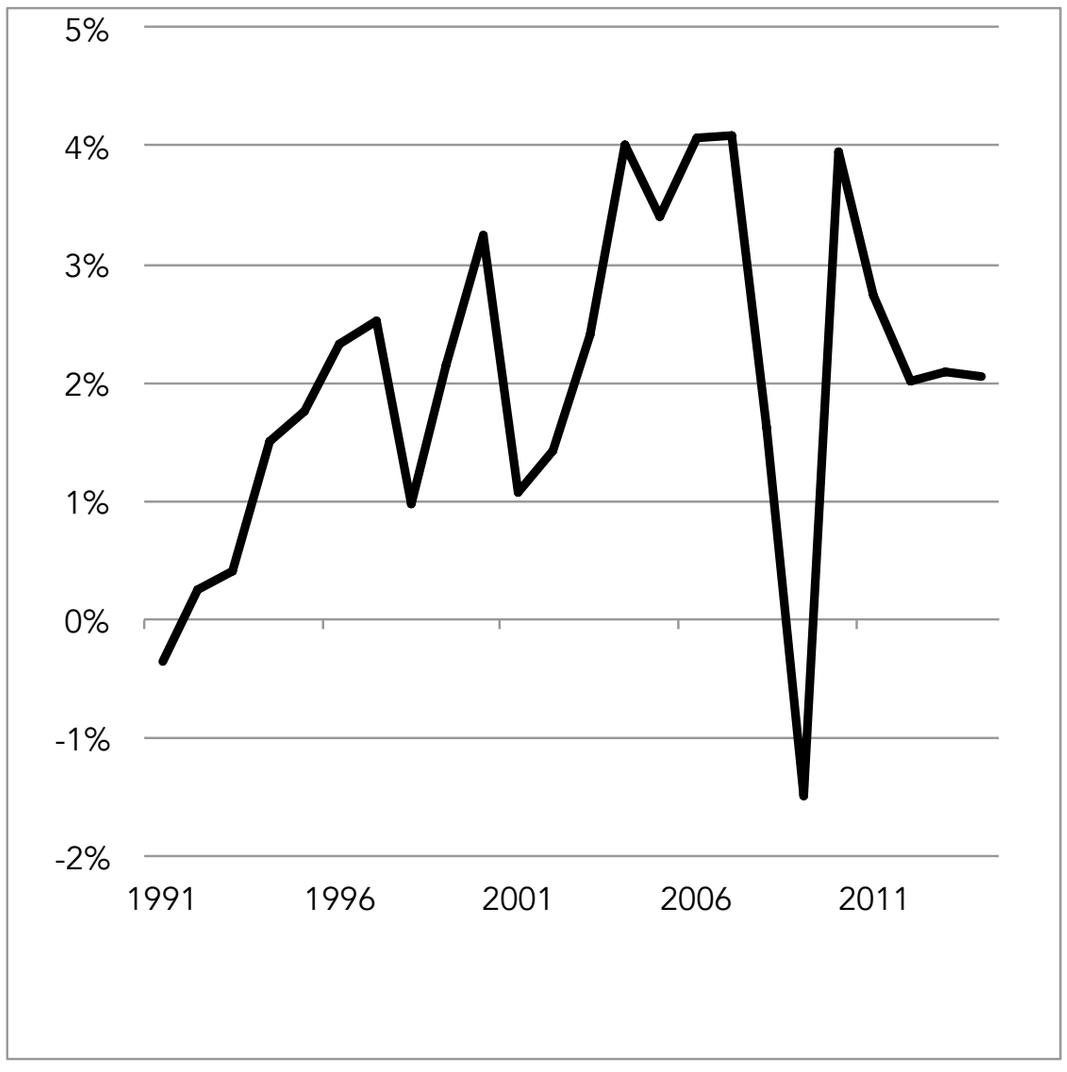
$$\cancel{Y} + A \cong D + \cancel{P}$$

Yield growth and population growth are more or less cancelling each other out, so area growth is all about changes in per capita demand

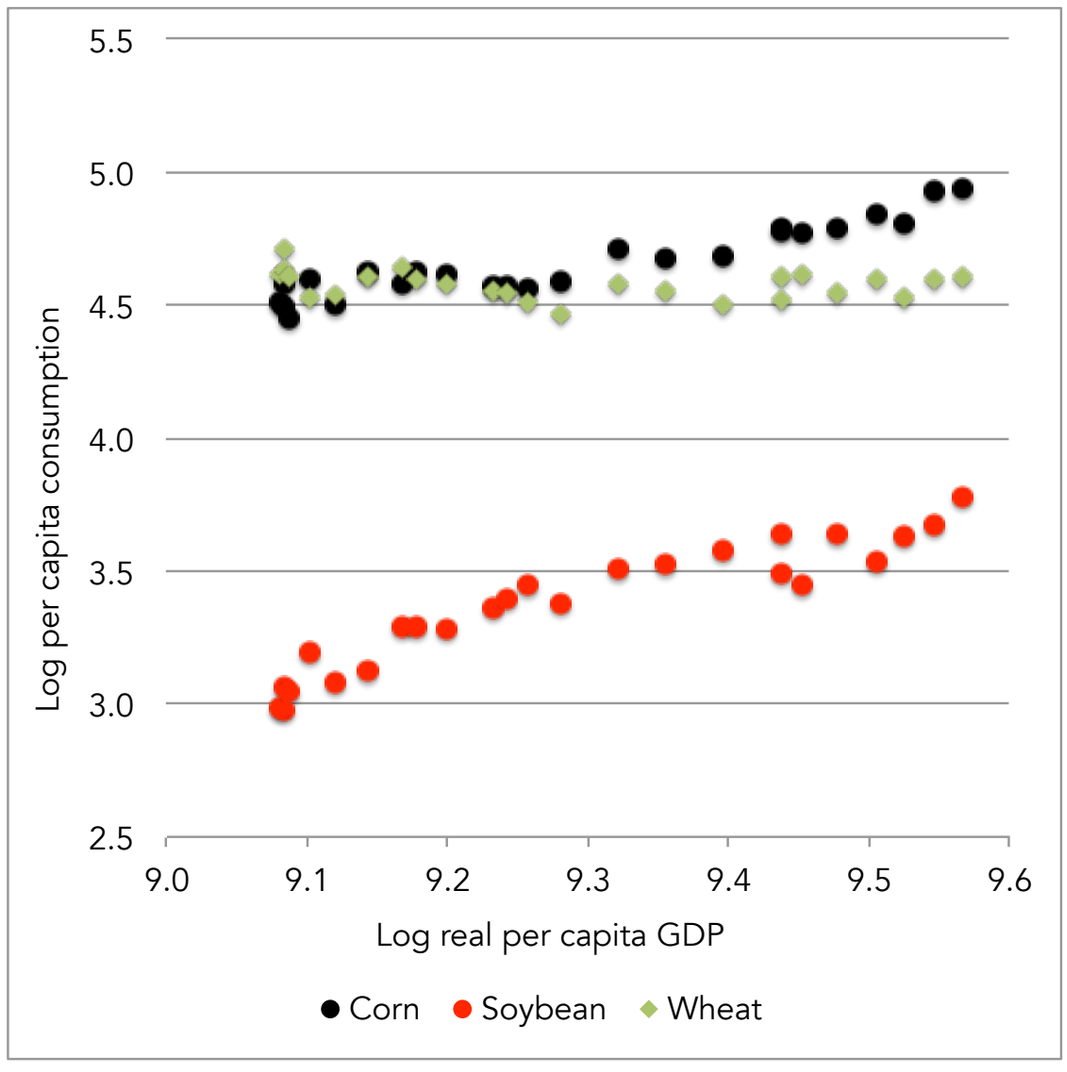
Area growth (price) ≅ Growth in Per cap demand (G, price)

The first big driver of demand: growth in world per capita incomes…

Soybean demand is sensitive to income growth, corn less so and wheat not at all



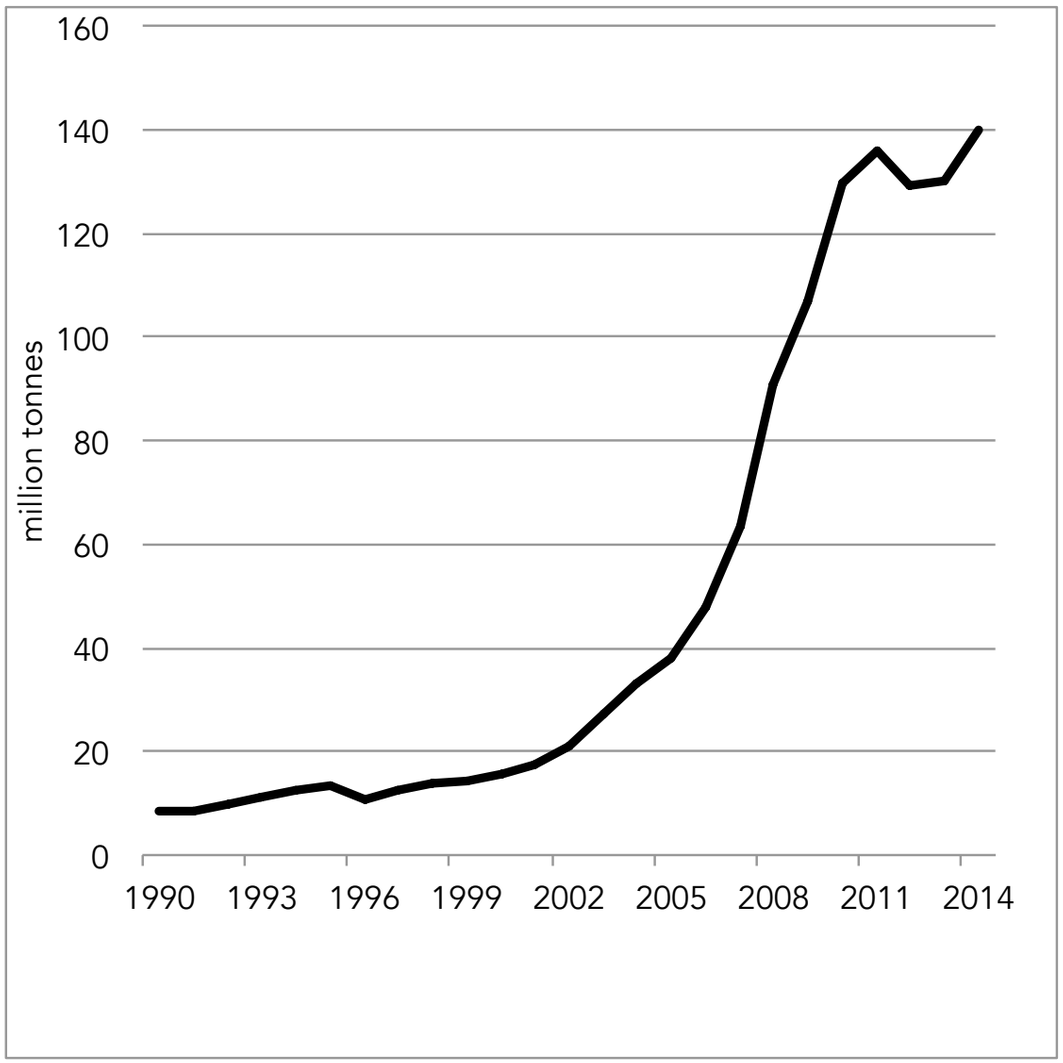
Per capita GDP growth



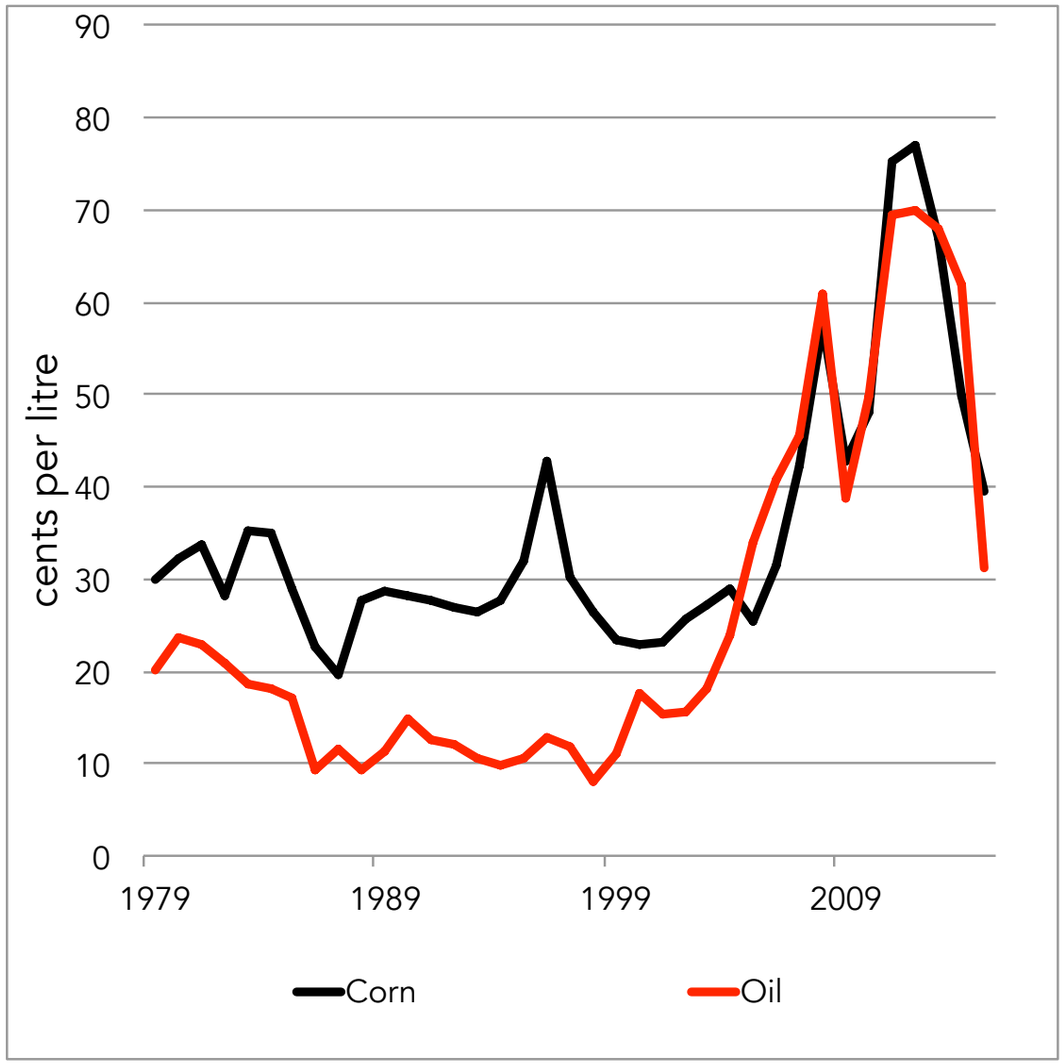
Per capita consumption v GDP

…followed by growth in use of biofuel

The US corn ethanol mandate pushed forward ethanol production while higher oil prices helped to make sense of the policy



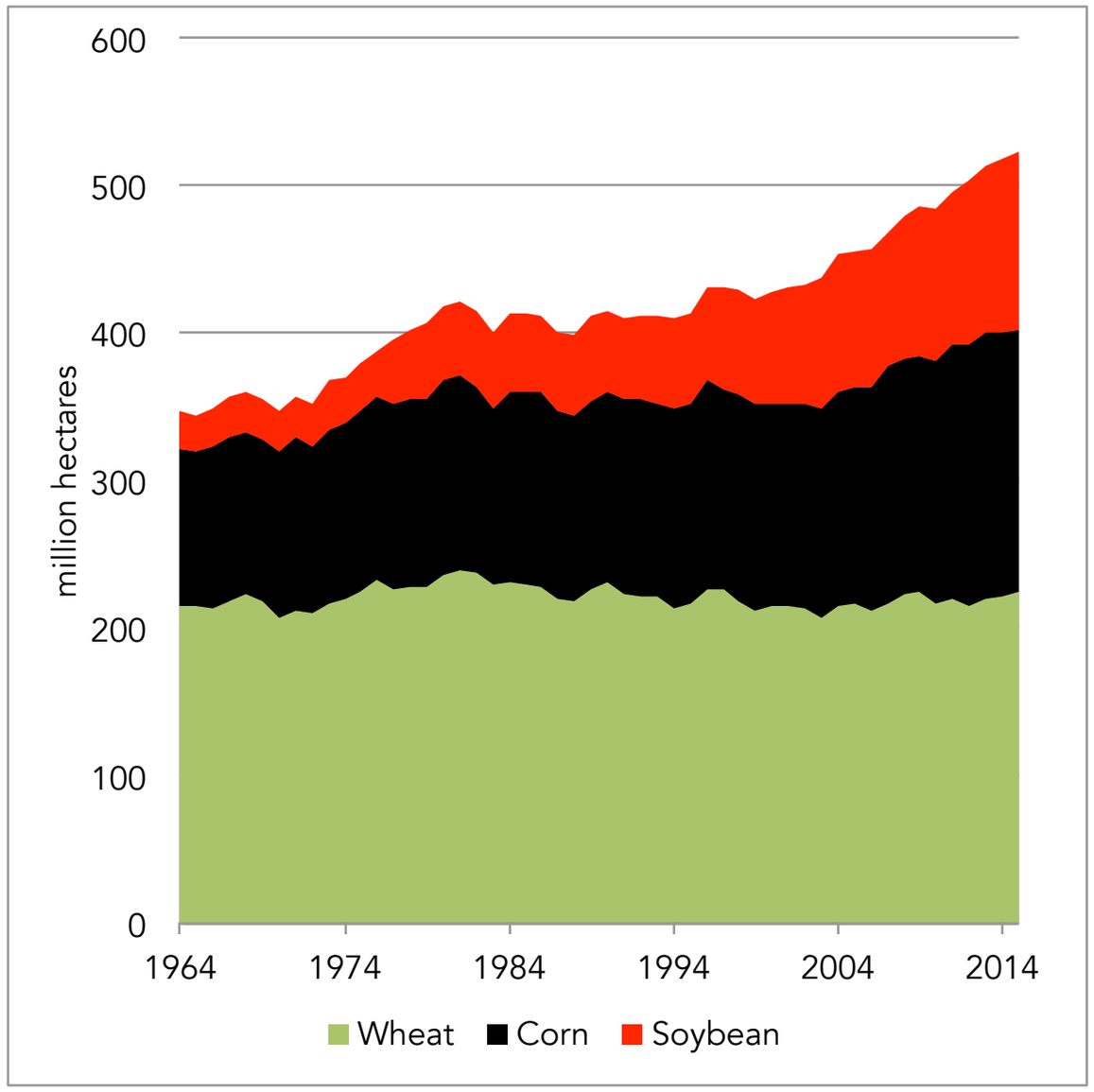
US corn ethanol production



Oil and corn prices

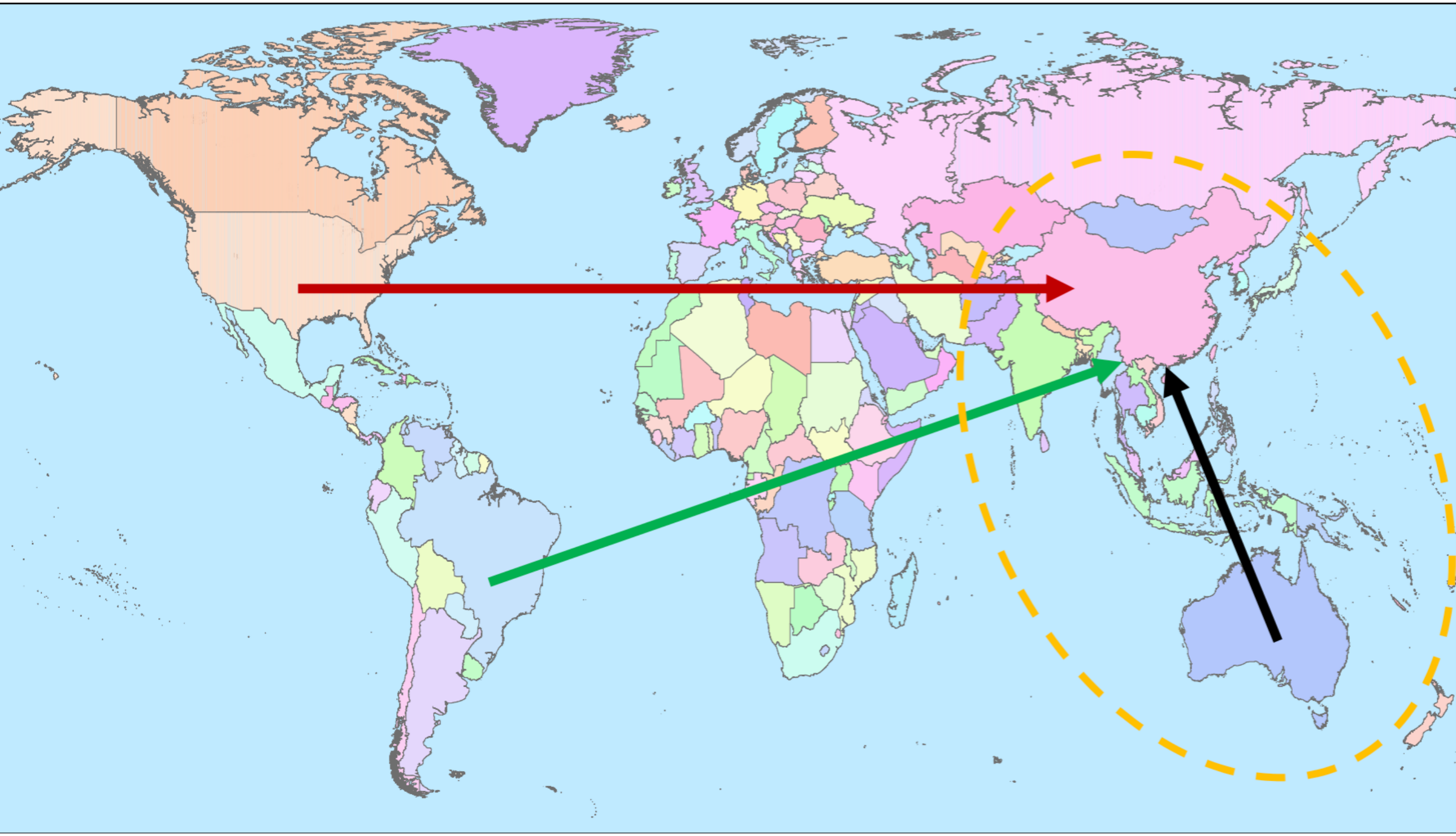
The story

- So we have:
  - A surge in population growth;
  - A surge in world incomes; helping to drive:
    - Rising oil prices AND biofuel mandates
- At the same time, oilseed yield growth is weak while the income sensitivity of demand is high
- Put simply, the world needed and paid for more corn and even more soybean area



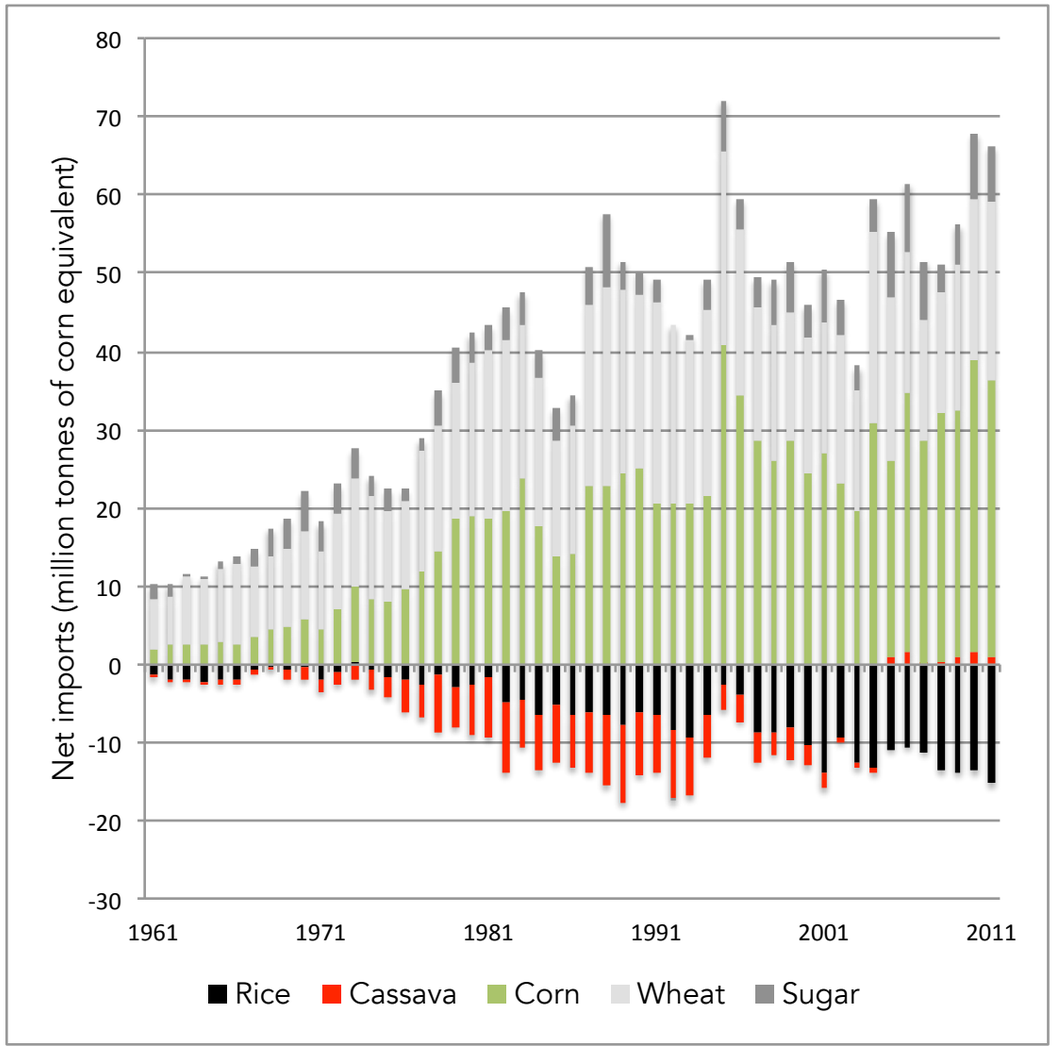
World crop area

Where does Australia fit into all this?

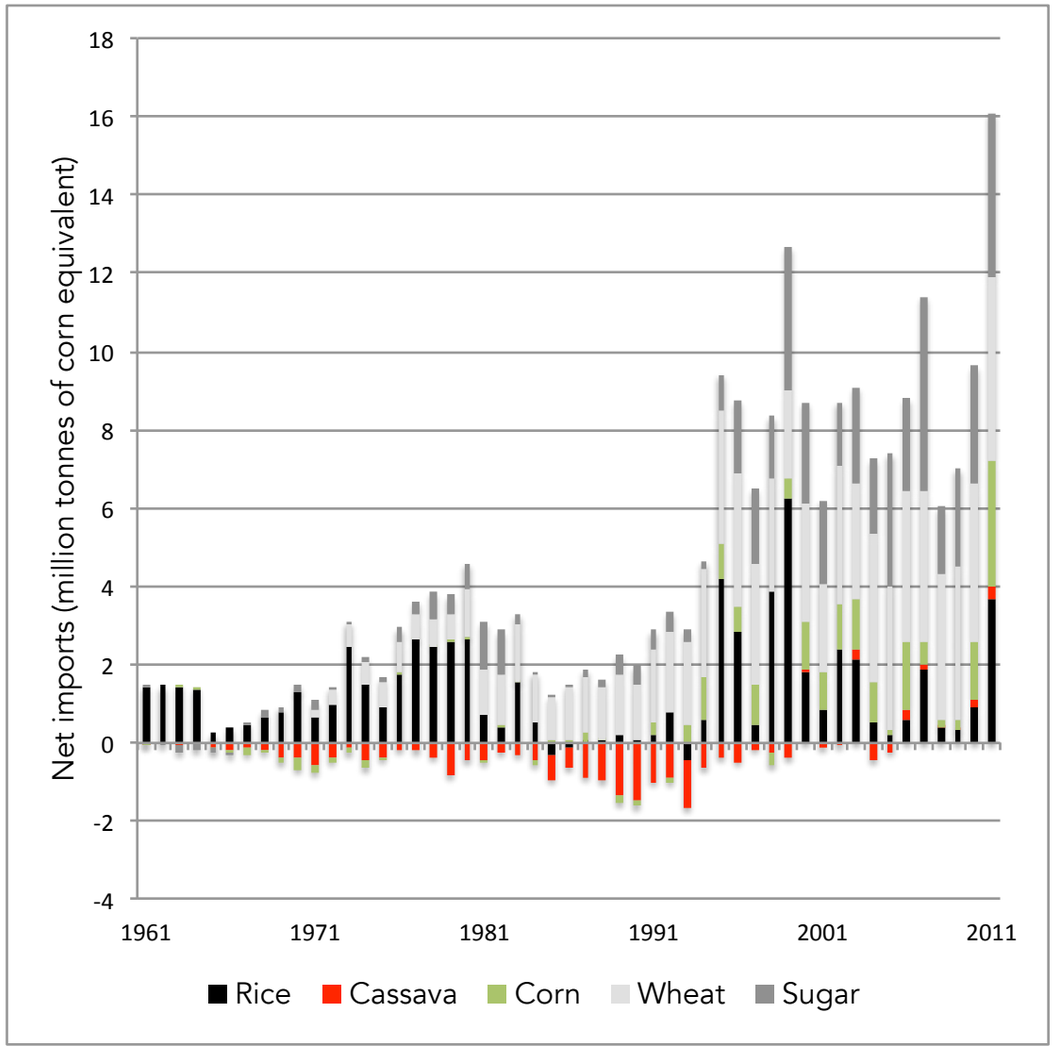


Asia has been at the centre of these developments and its carbohydrate/protein deficit is growing…

East and South East Asia have been increasingly large net importers of both carbohydrates and protein



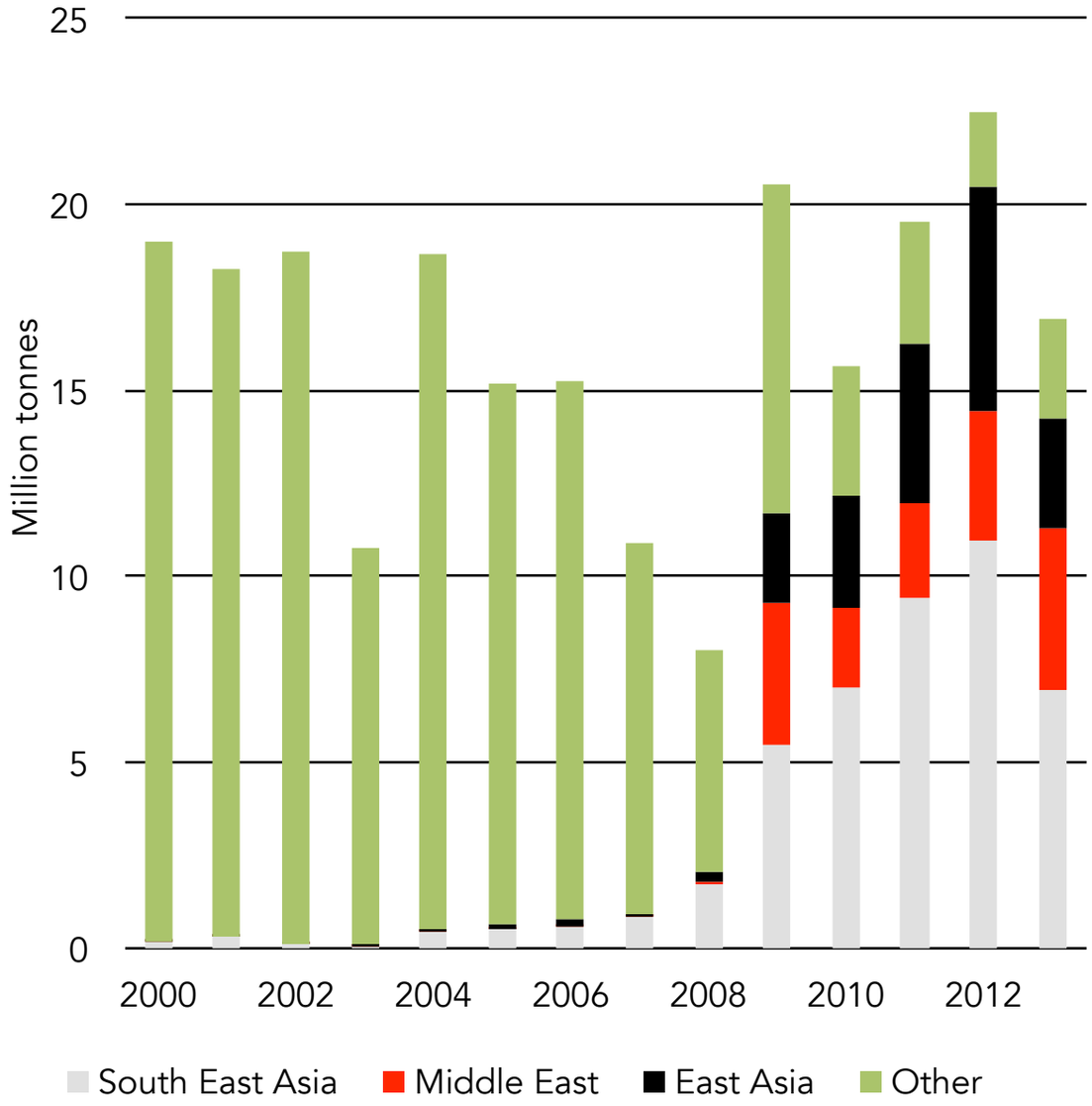
Asia



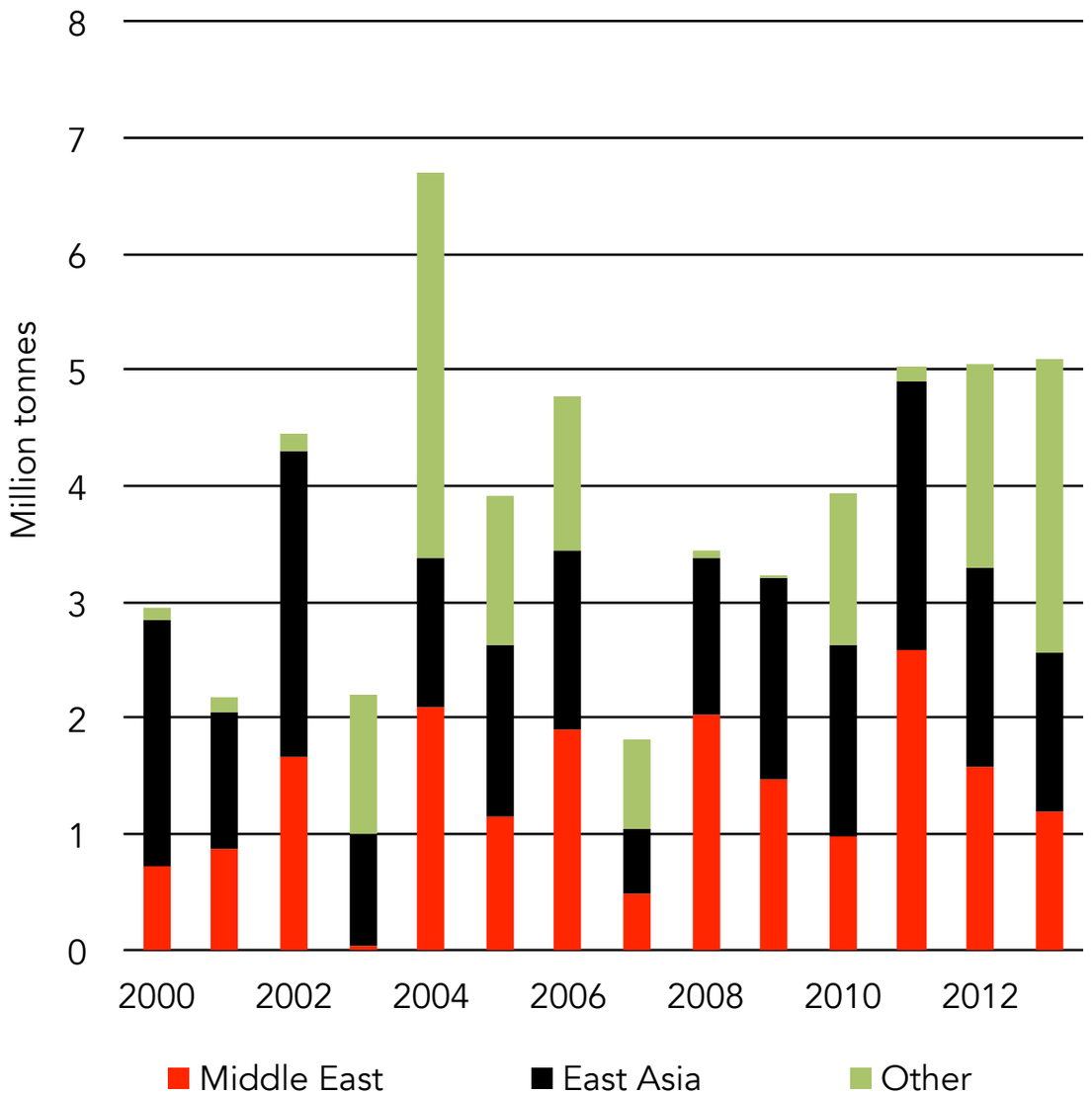
Indonesia

…and Australian exports have responded, particularly for wheat…

Aussie grain exports have been increasingly destined for East and South East Asia



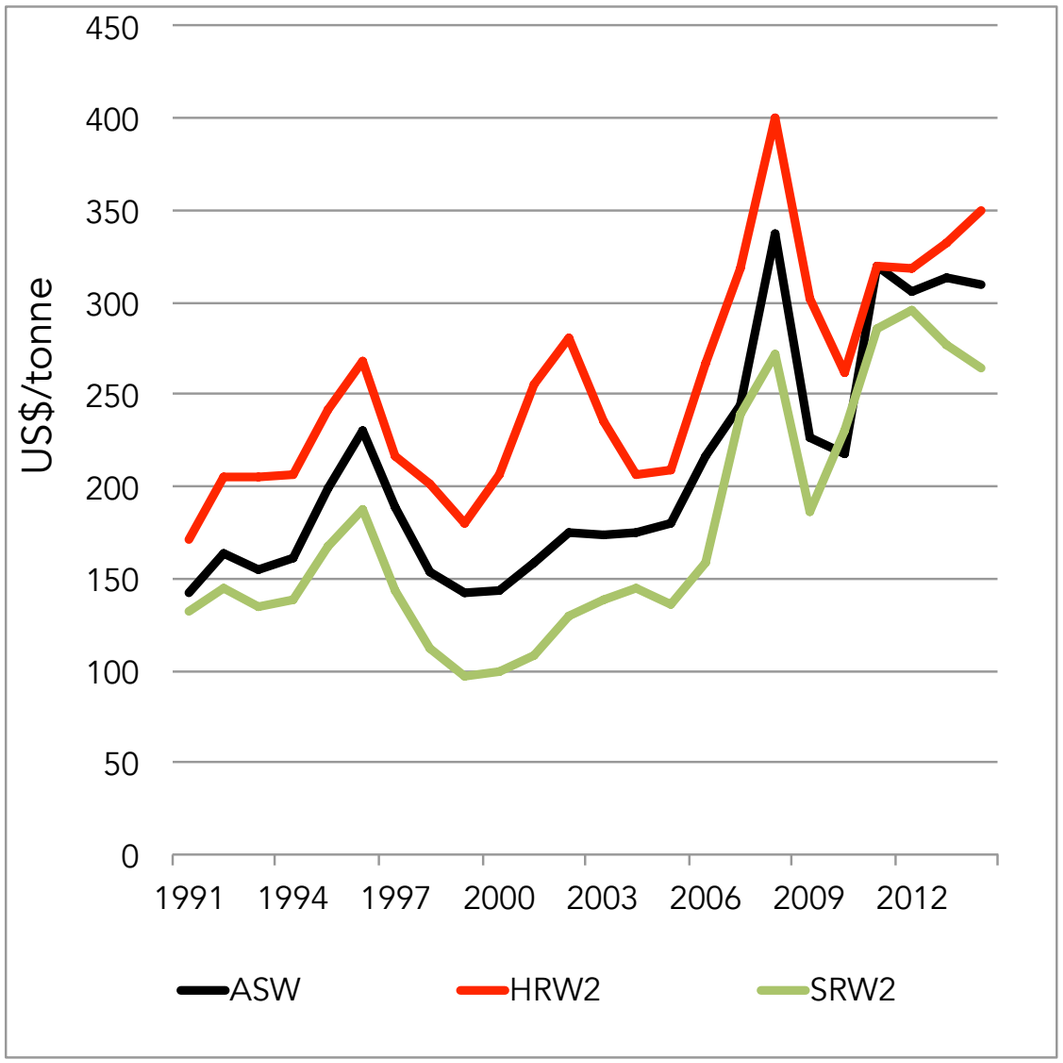
Exports of wheat



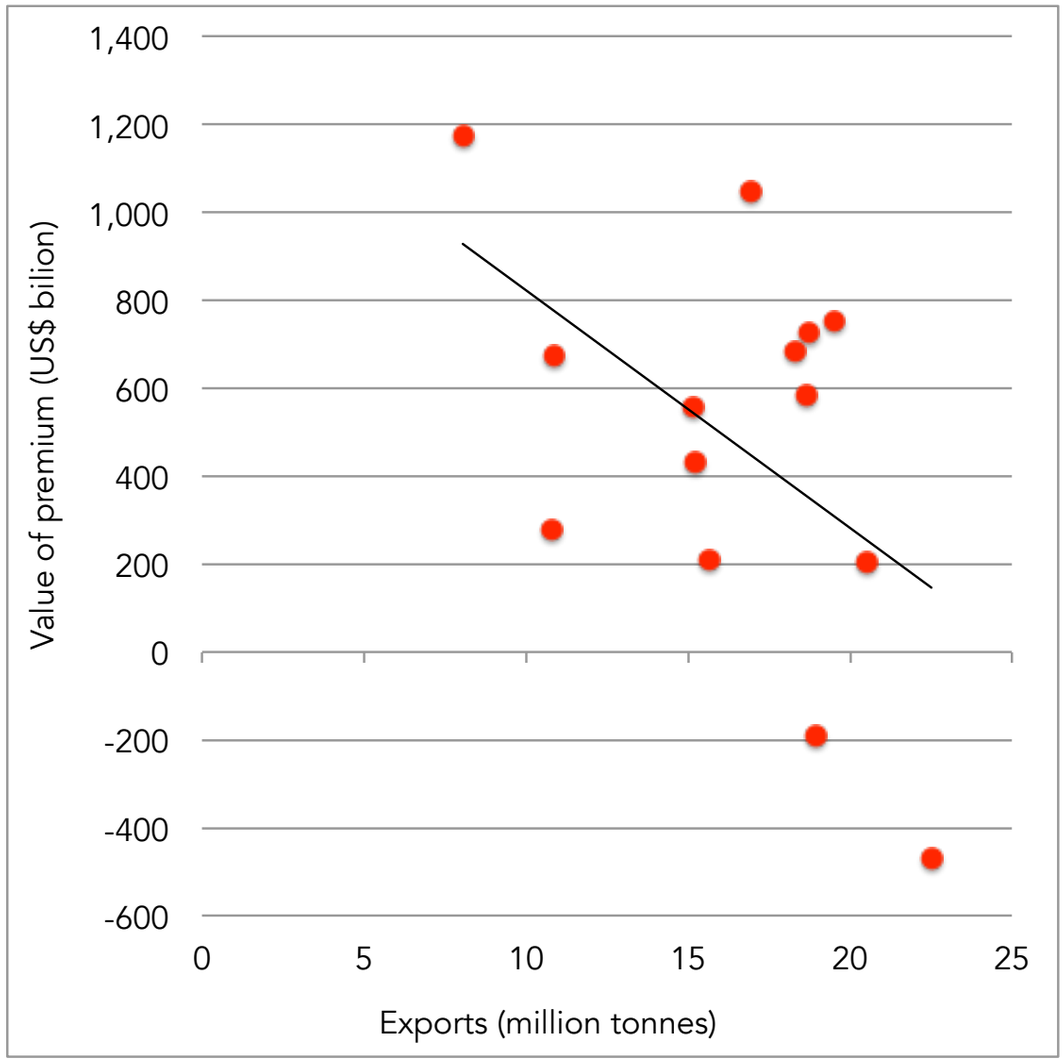
Exports of barley

…revealing that much of the Aussie wheat premium is driven by location

When Australia exports into Asia, the price it gets over US SRW depends on the level of exports



Wheat prices



The Aussie wheat premium

Again, put simply

- Australia is one of the world's main producers of carbohydrates, and to a lesser extent protein crops

- It is geographically close to what has become the world's leading deficit region for these crops

- It has benefited from the general increase in prices on the back of population/income/biofuel growth *as well as* picking up a freight advantage

How is this story evolving?

The short term outlook

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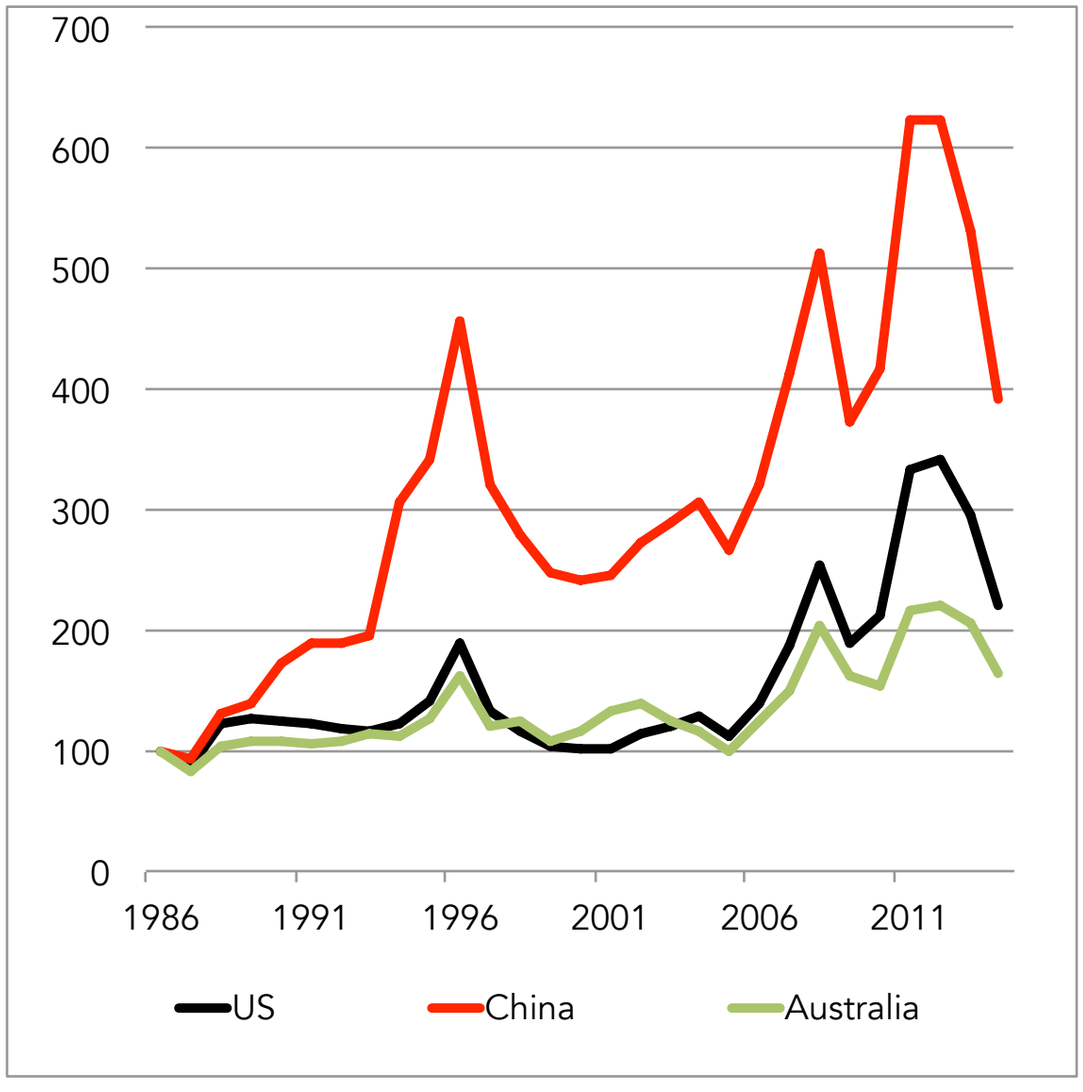
On the immediate horizon

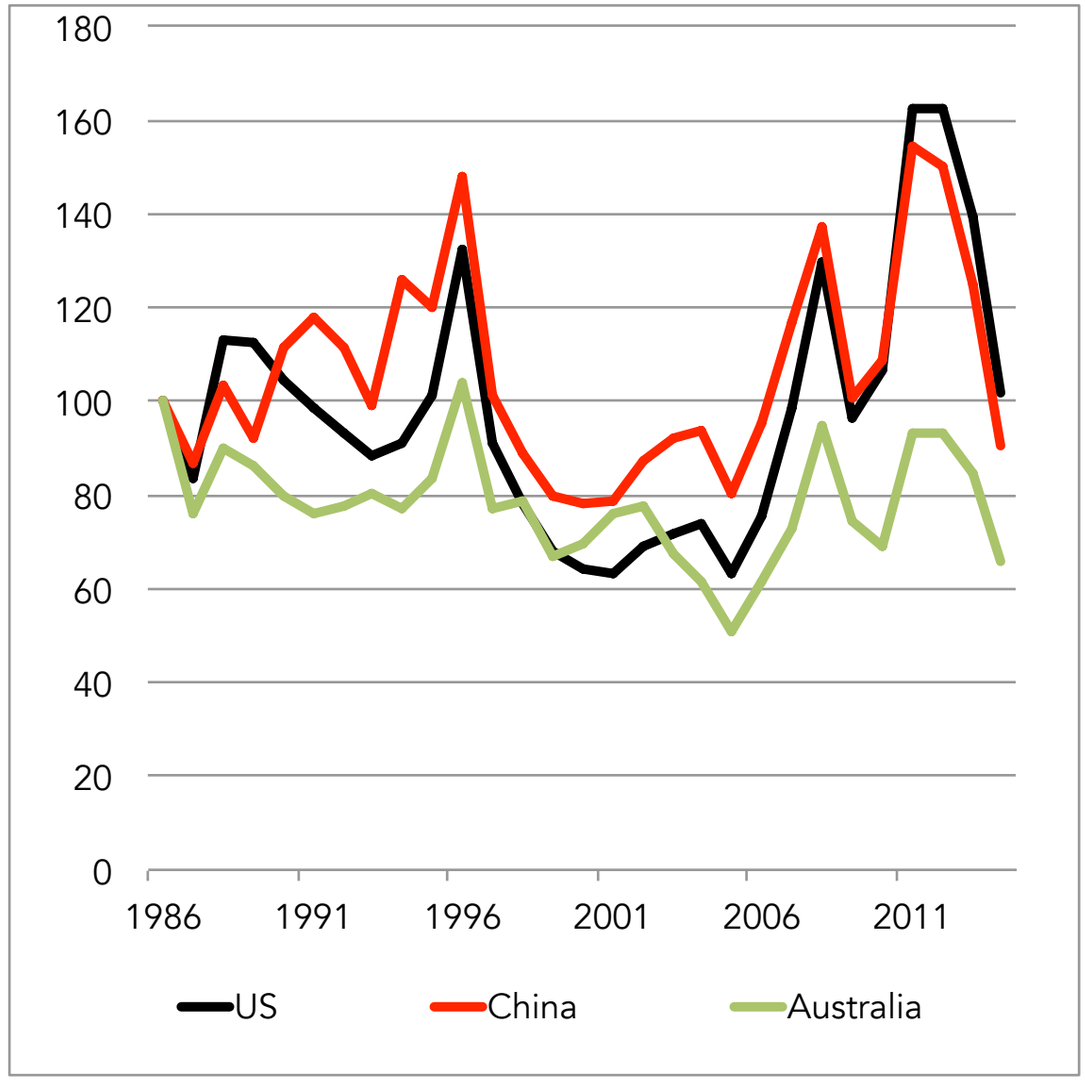
- There is a rebalancing taking place between growth in emerging markets and the US (which is affecting the dollar)
- China is also now looking inward at its grain policy
- Oil prices are down and biofuel mandates are flat
- A few years of good weather have built up grain stocks
- All this is negative for grain prices. Against these, there is the possibility of a strong weather event in the US corn belt next year
- The hard question is: how much of all this is priced in?

A hint of the rebalancing that is occurring

In real, local terms, corn prices are back at 1986 levels, but in Australia the terms of trade have moved against grain



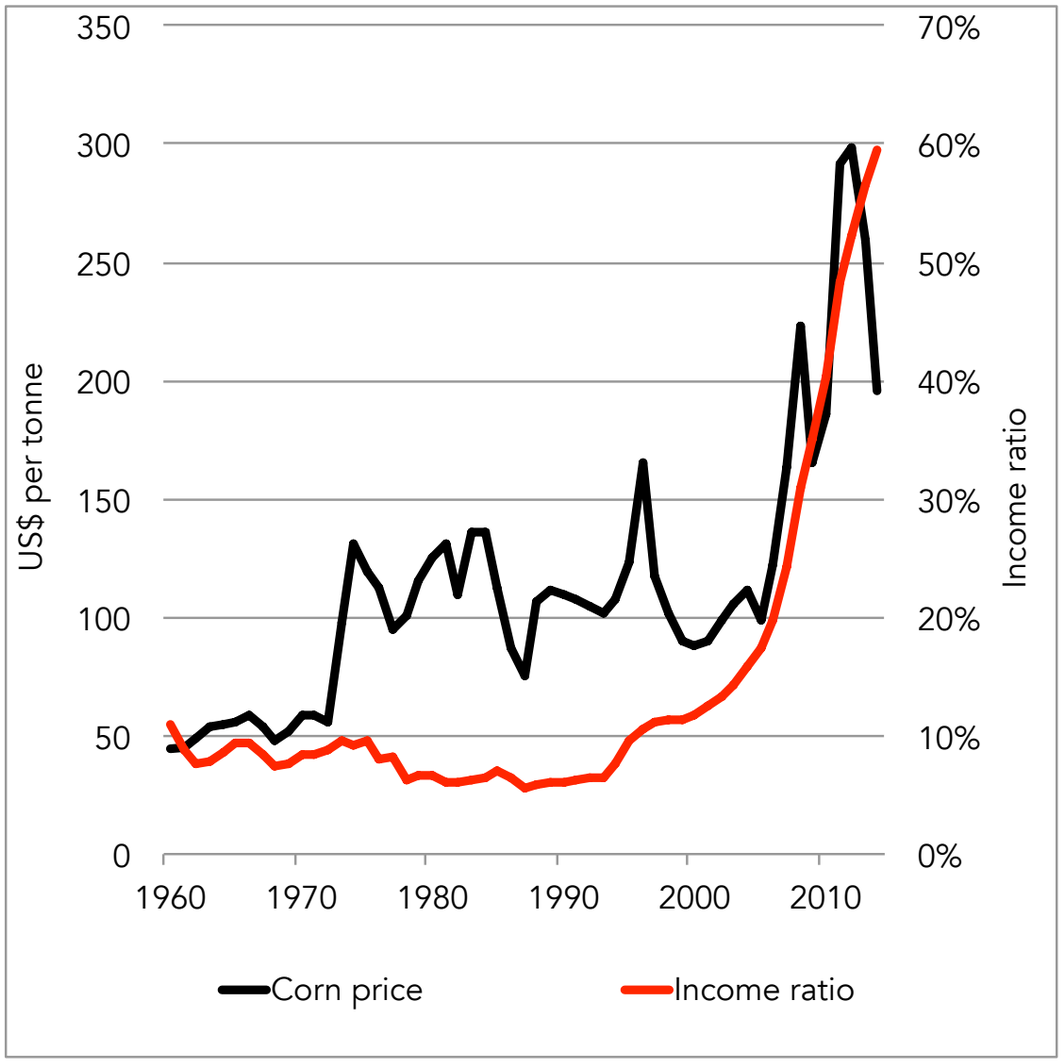
Nominal local currency



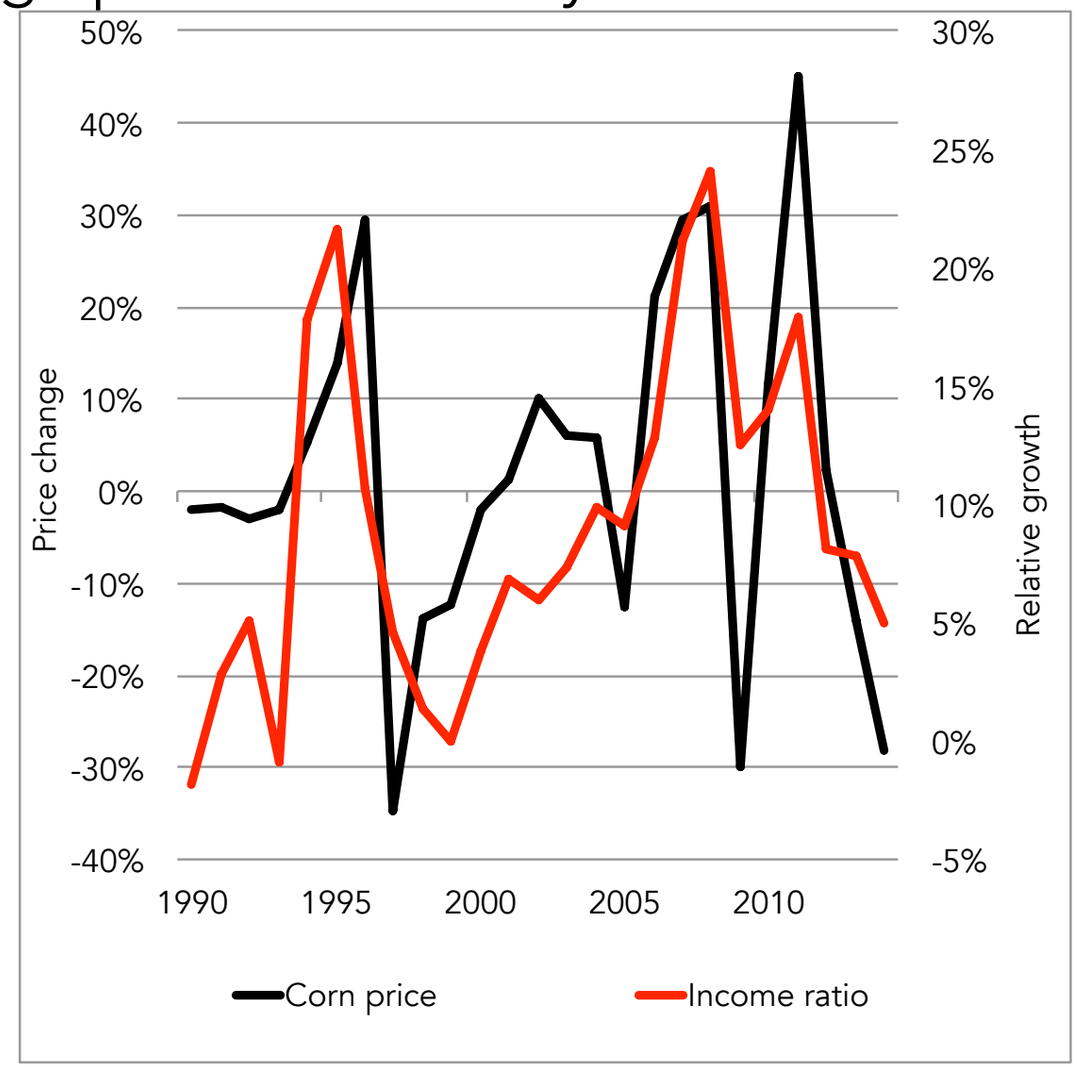
Real local currency

China's relative growth is linked to movements in grain prices

Chinese growth is now converging on US levels. Growth still supports prices but the big "push" of recent years is behind us



China GDP as share of US and corn prices



Growth in these variables

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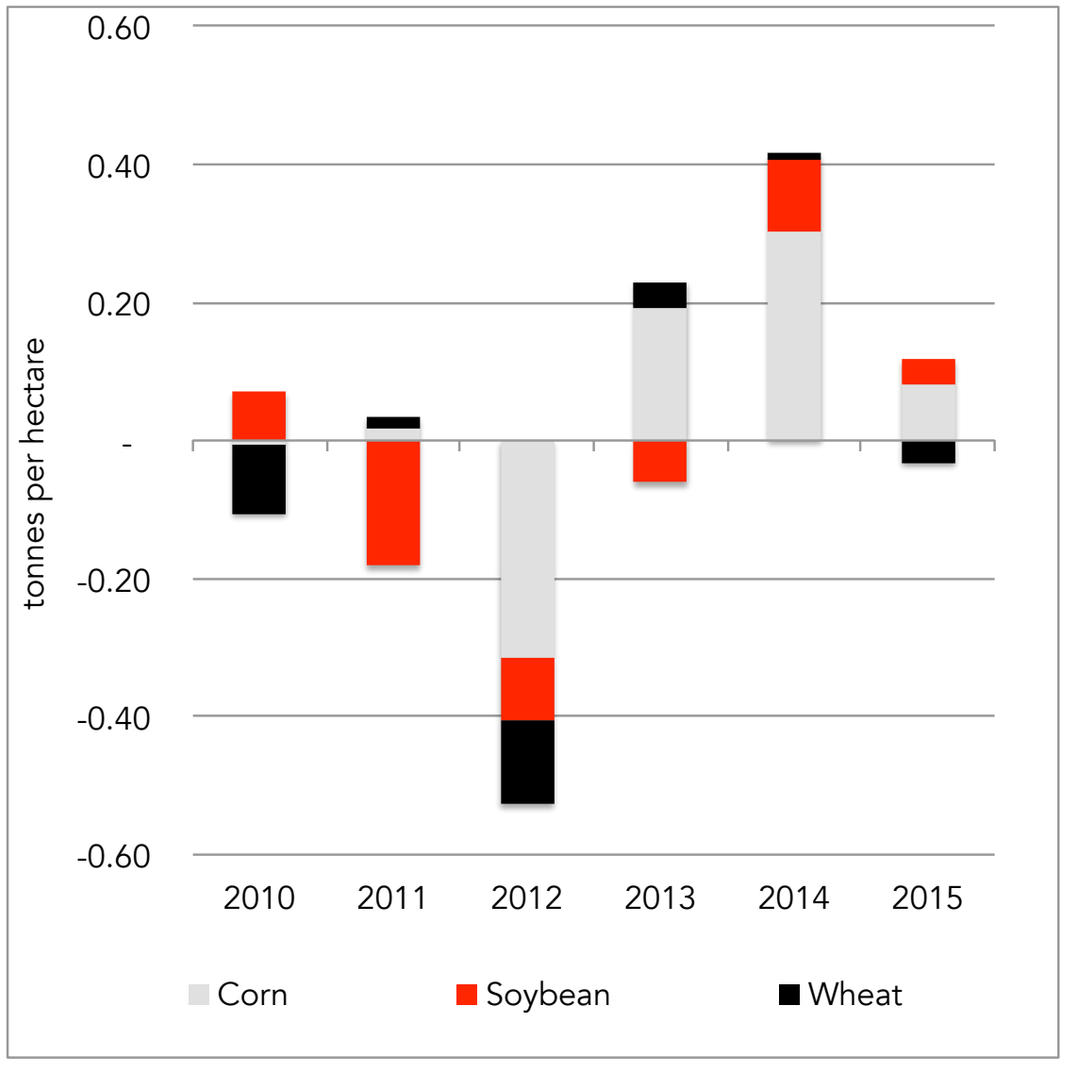
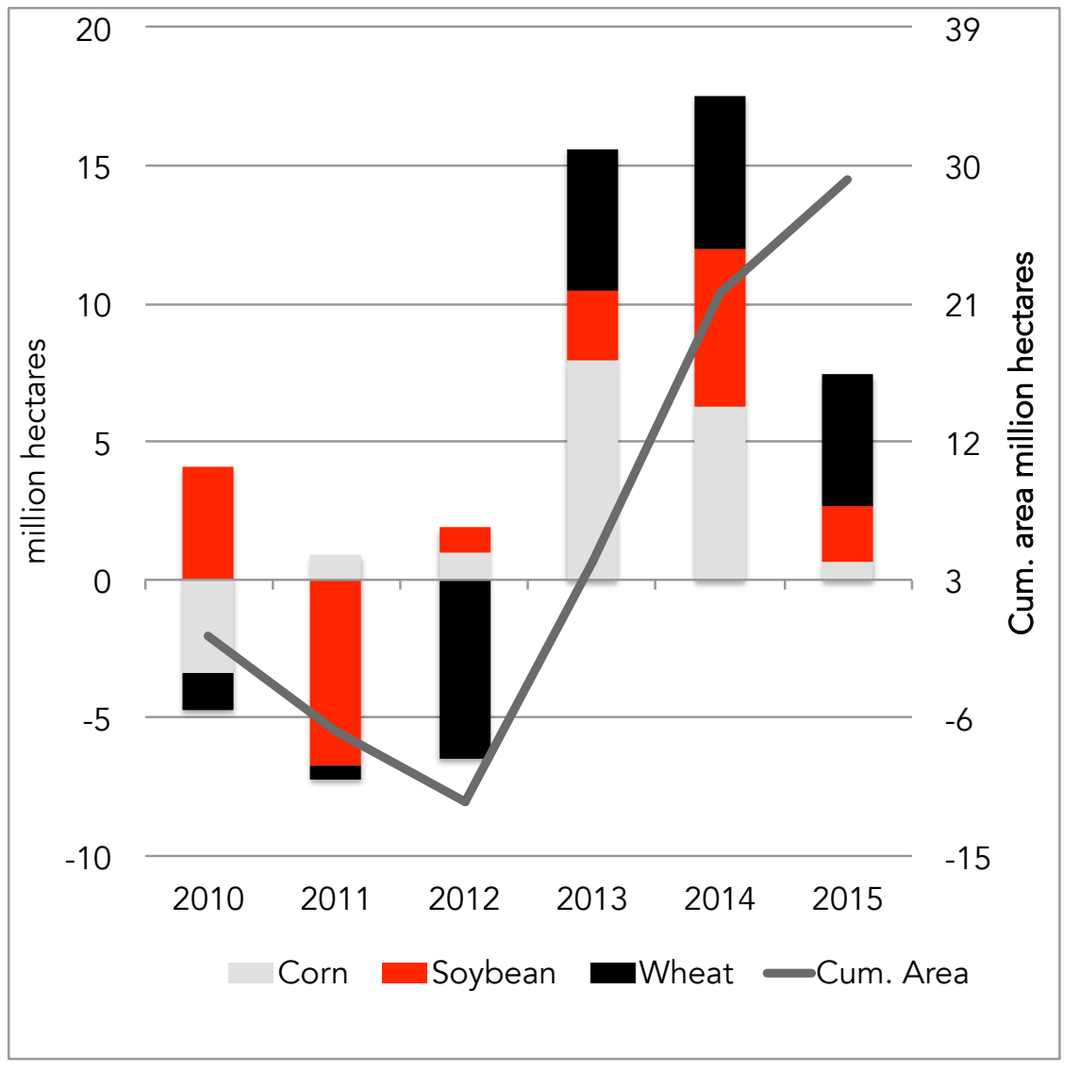
Three decent crop years have followed one very bad one, storing up reasonable grain area in stocks

The world has stored around 30 million hectares in stocks since 2010



Difference from trend yield



Area stored in stocks

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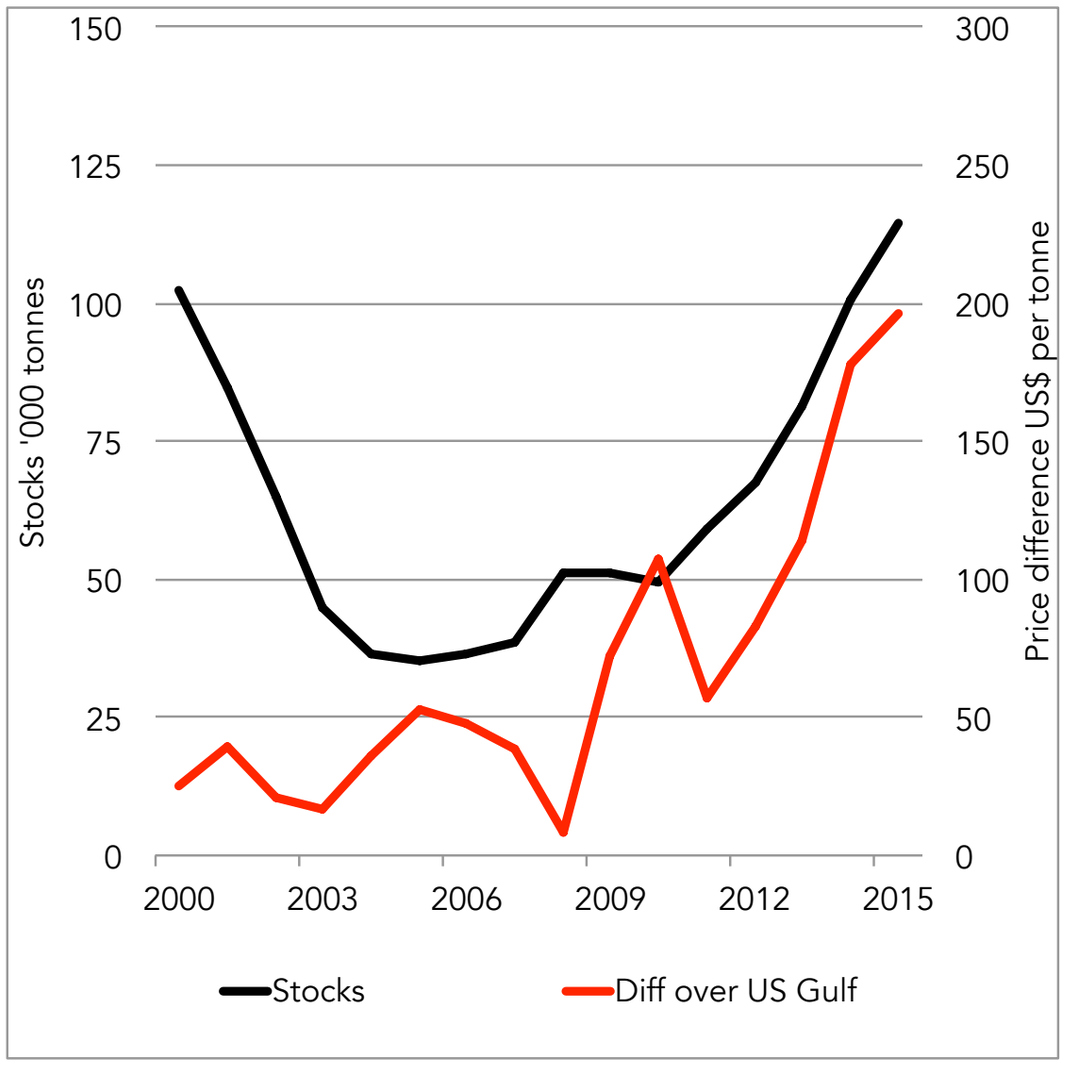
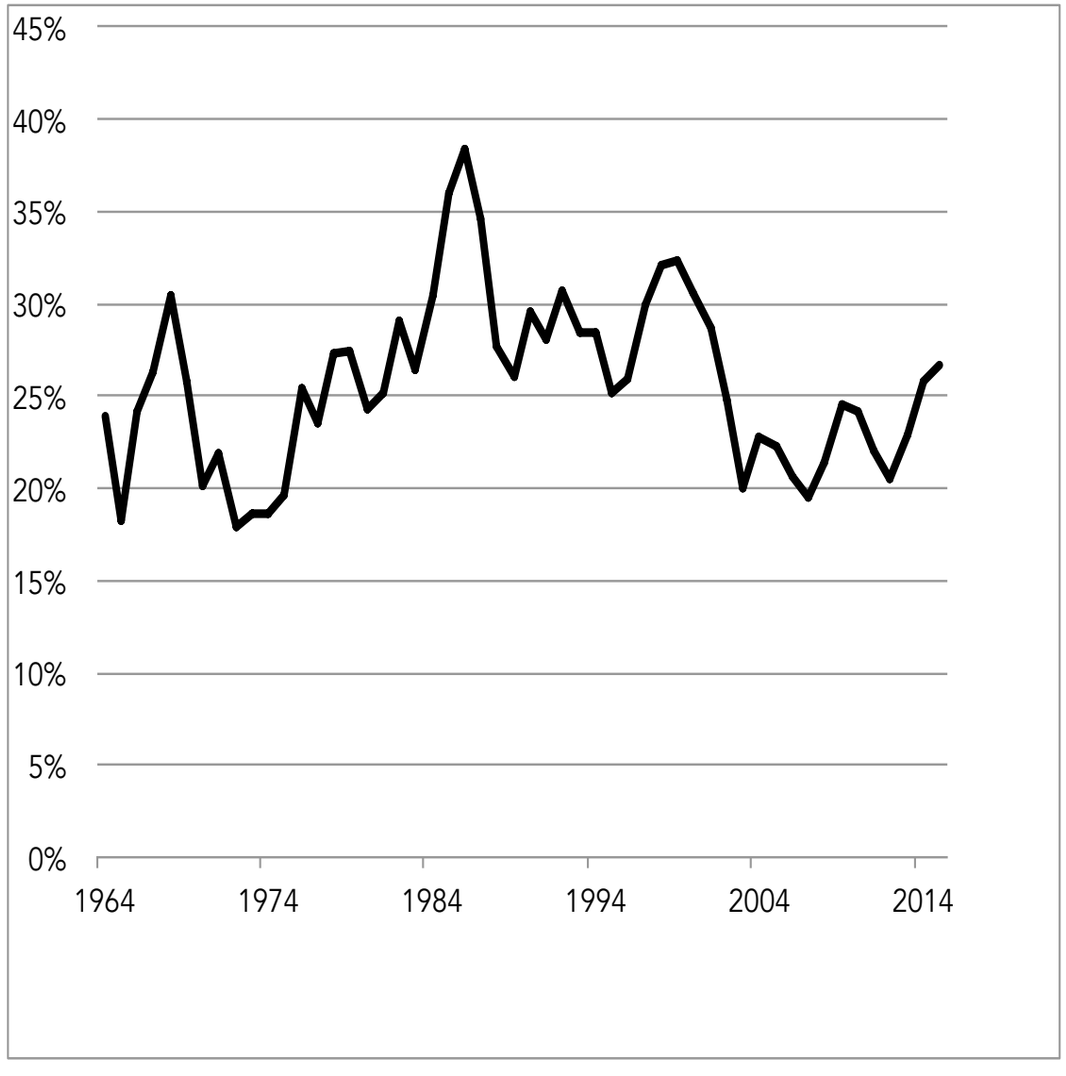
China has supported its corn price at unreasonable levels. World stocks are OK to good

The world has around 27% of global area held in grain stocks

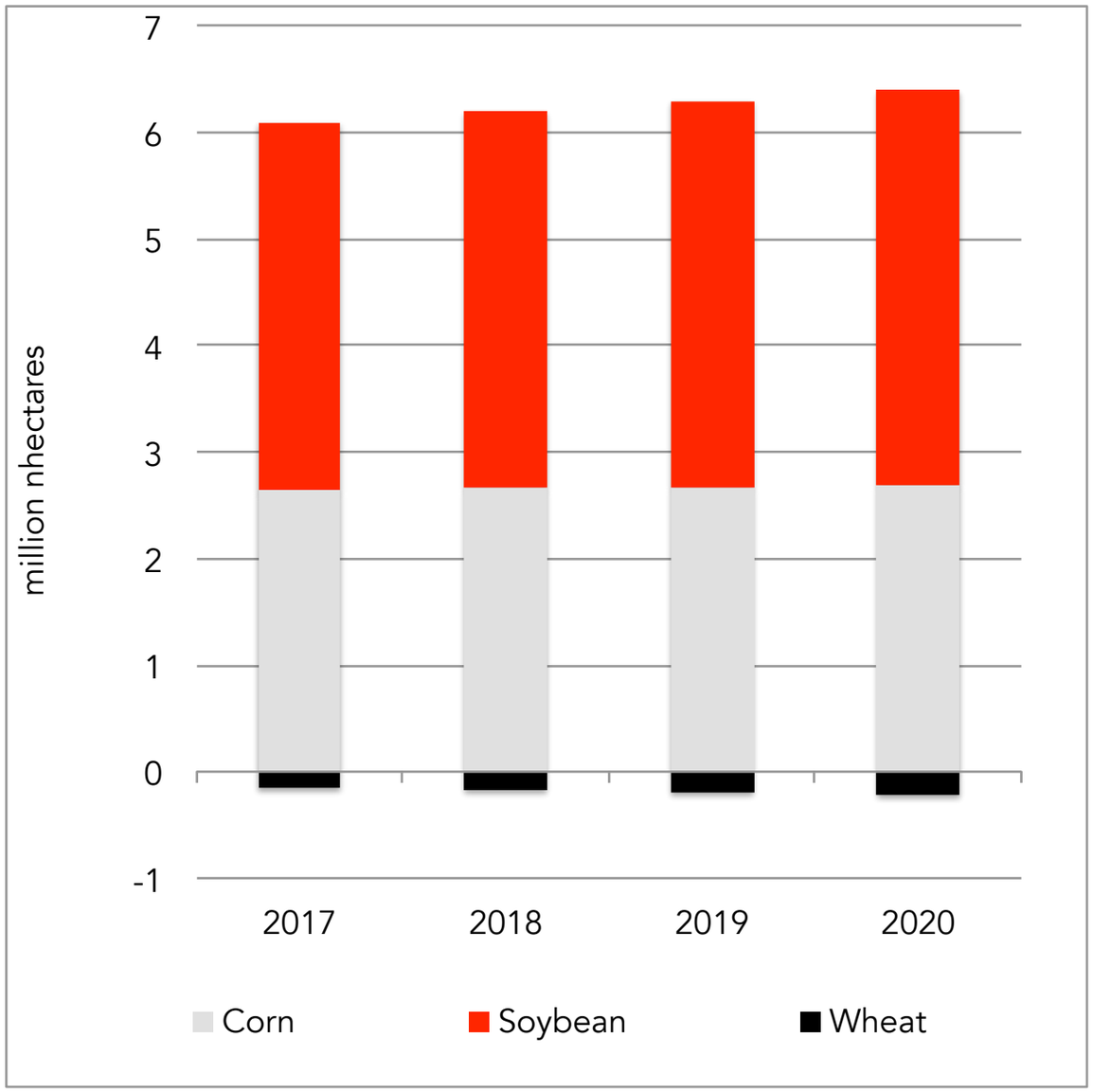


China corn stocks and price



World grain area % in stocks

Doing the arithmetic



Area required at trend yields

- At world trend yields China is sitting on around 21 million hectares of corn stocks (or perhaps more)
- A "2012" type weather event could knock maybe 24 million hectares out of world stocks (back to a stock to area ratio of 22%)
- The world needs at most an additional 6 million hectares per year going forward
- The sense is that the market is perhaps one strong weather event away from a rally
- Without that, it is harder to find a bullish story

A peak into the more distant future

The longer term outlook

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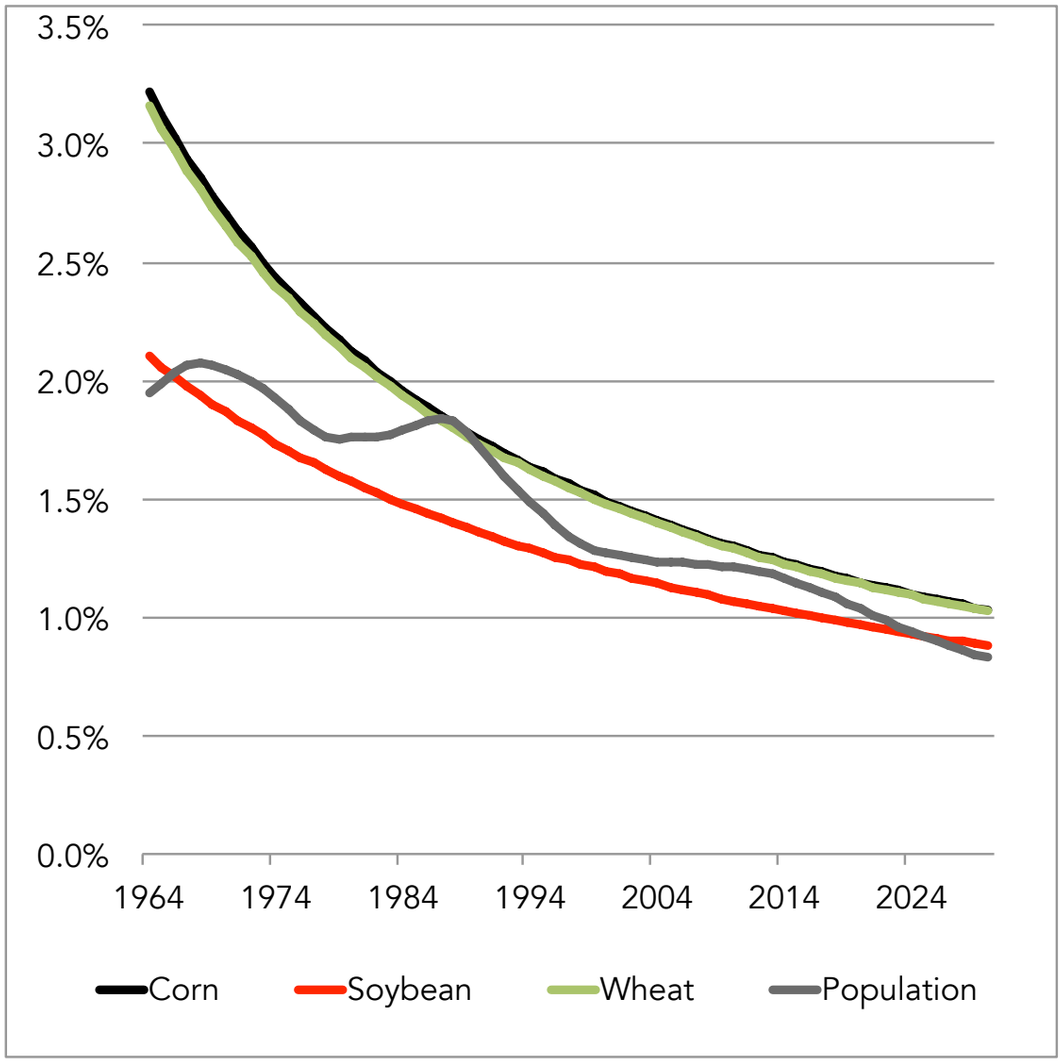
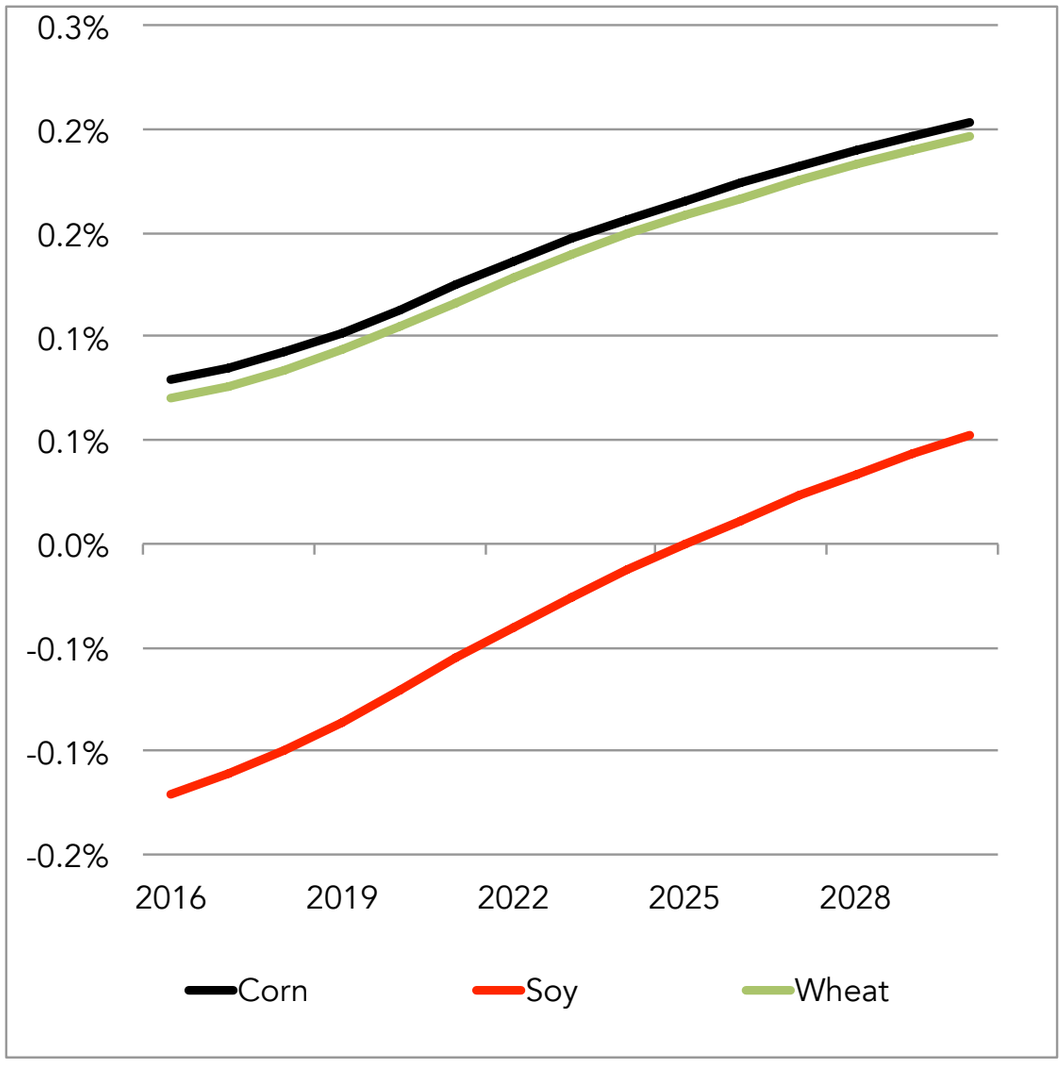
The first thing to notice is that population growth slows, taking pressure off area

After about 2025 all crops have "excess productivity"



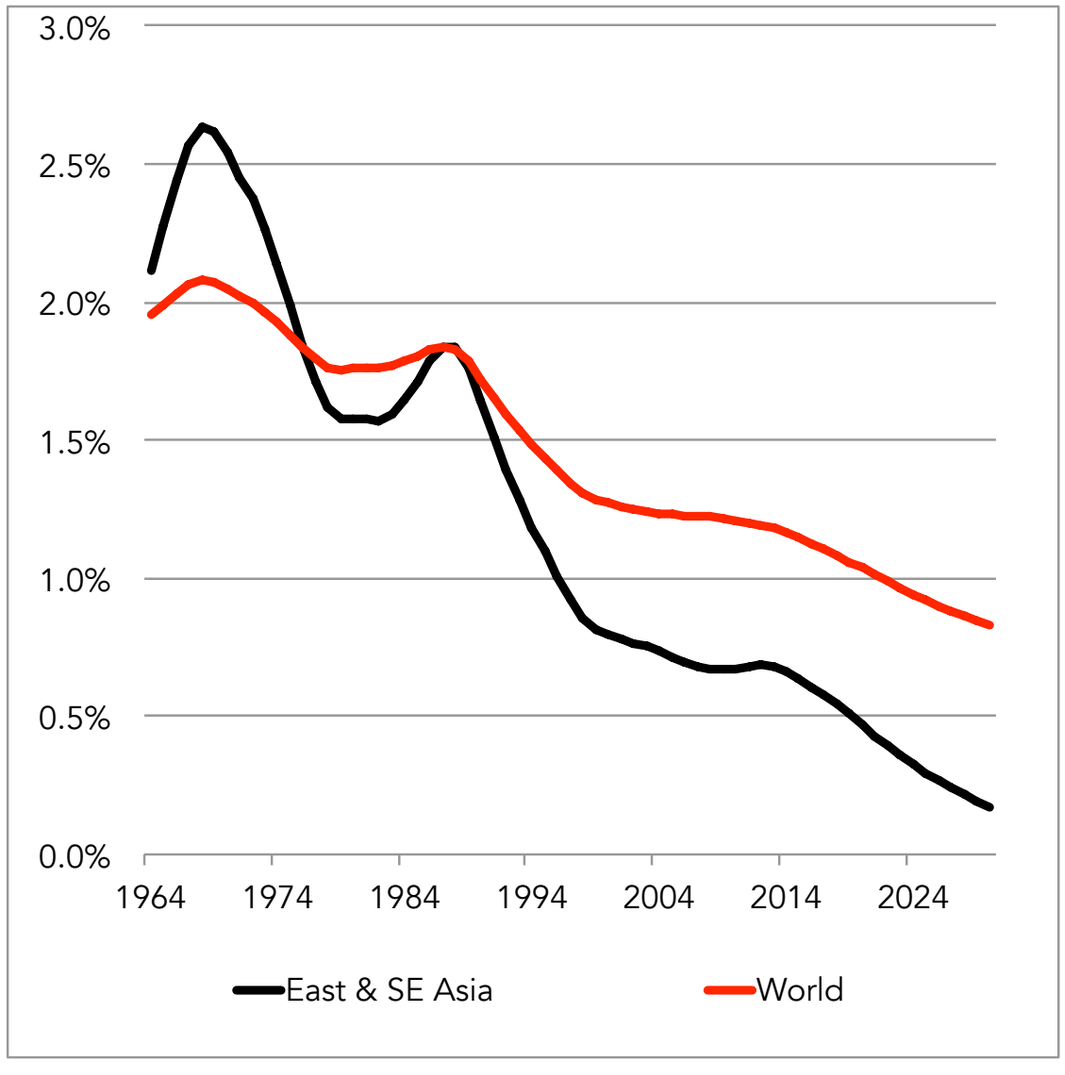
World population and yield growth



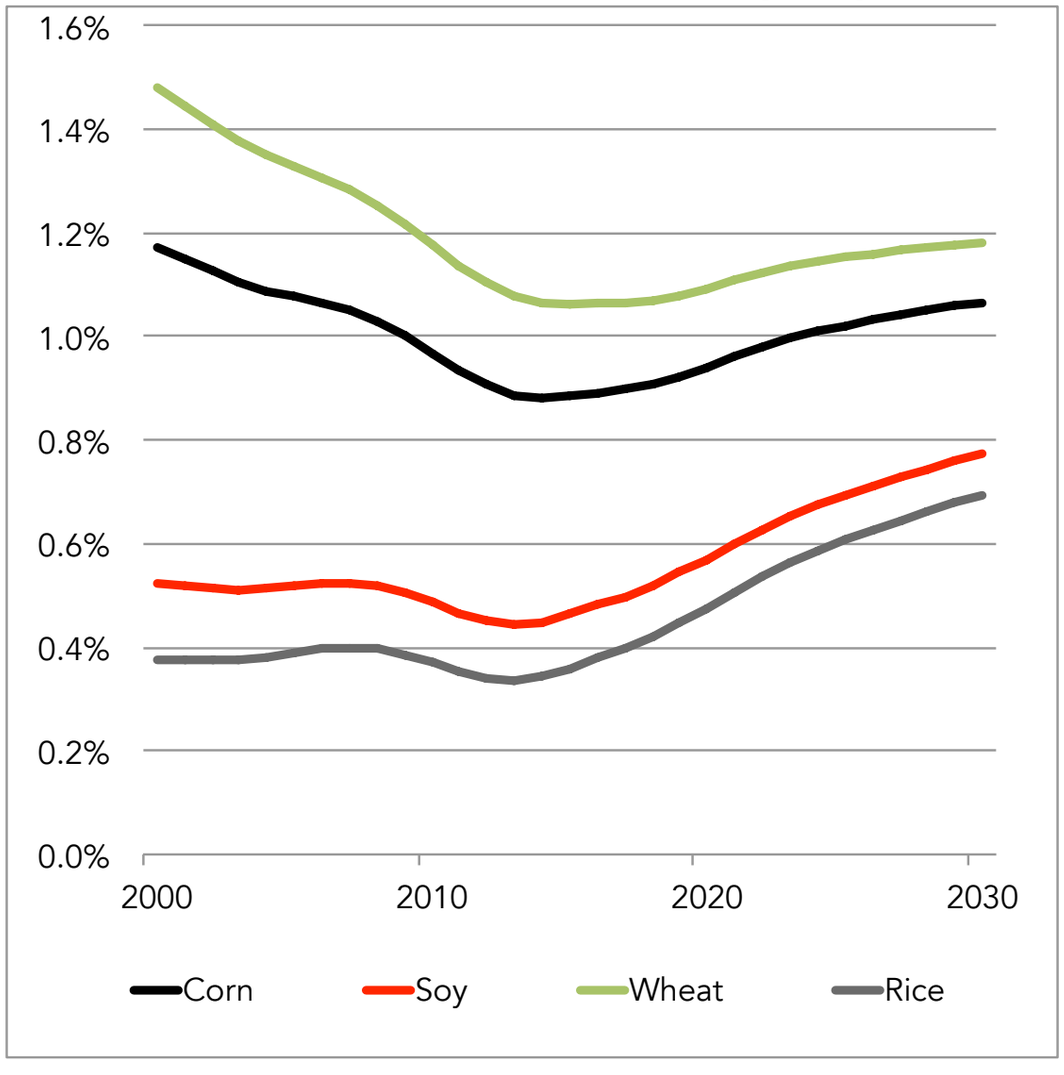
Excess productivity

In Asia it slows even more rapidly so that "excess productivity" gets a boost

The productivity gap in Asia improves going forward, but the region remains deficit on still high growth



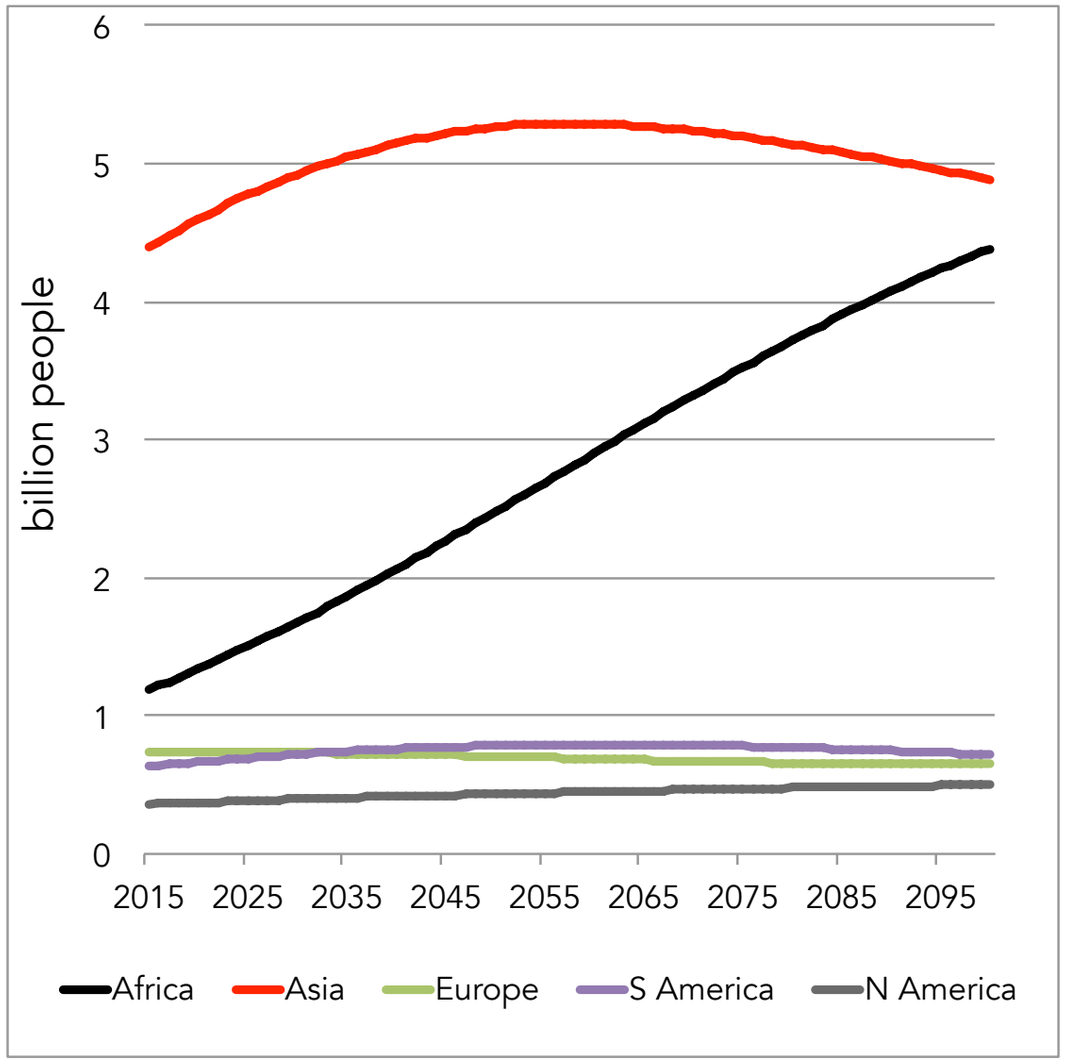
Asian and world population growth



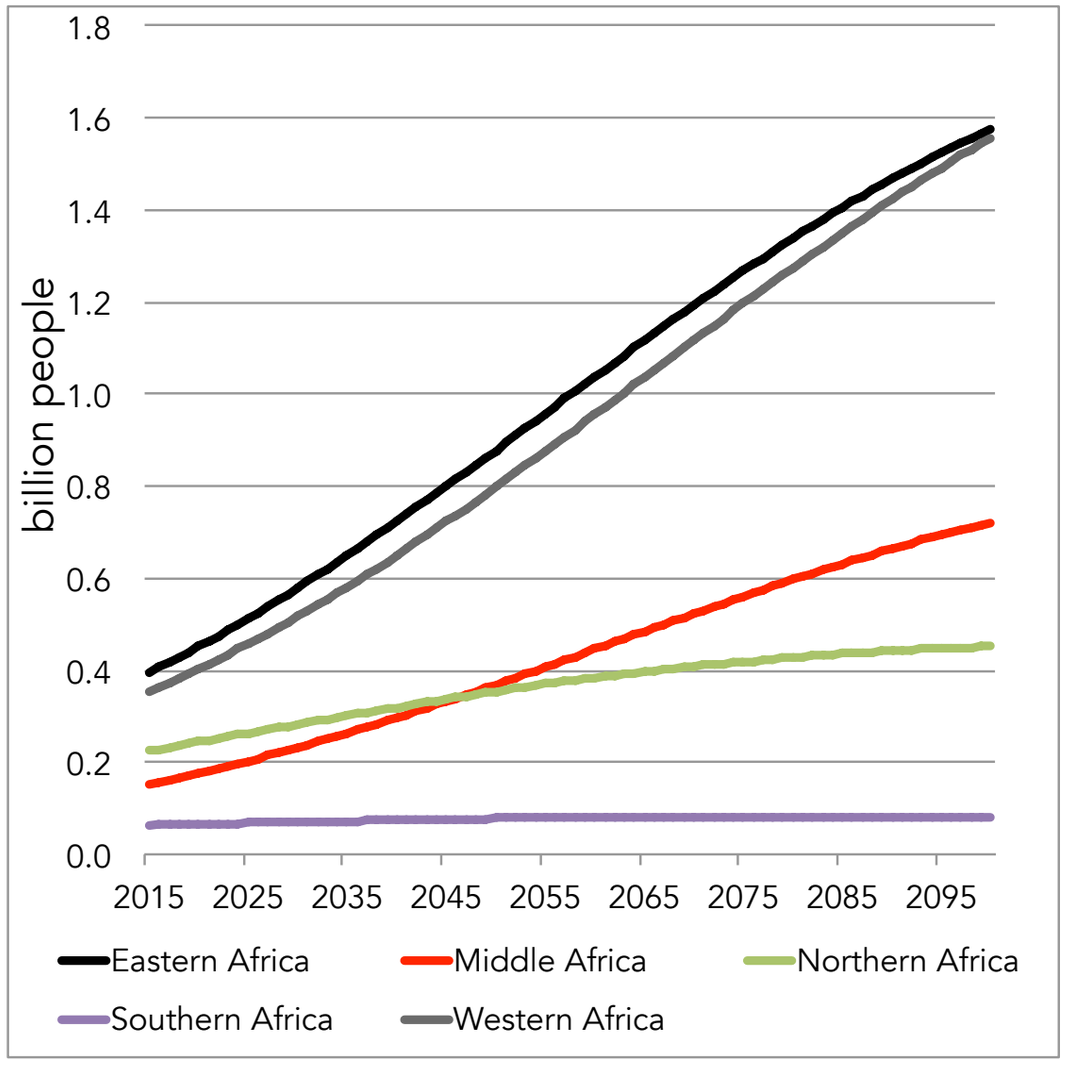
Excess productivity

So where do all the people come from?

Overwhelmingly, population begins to increase in Africa

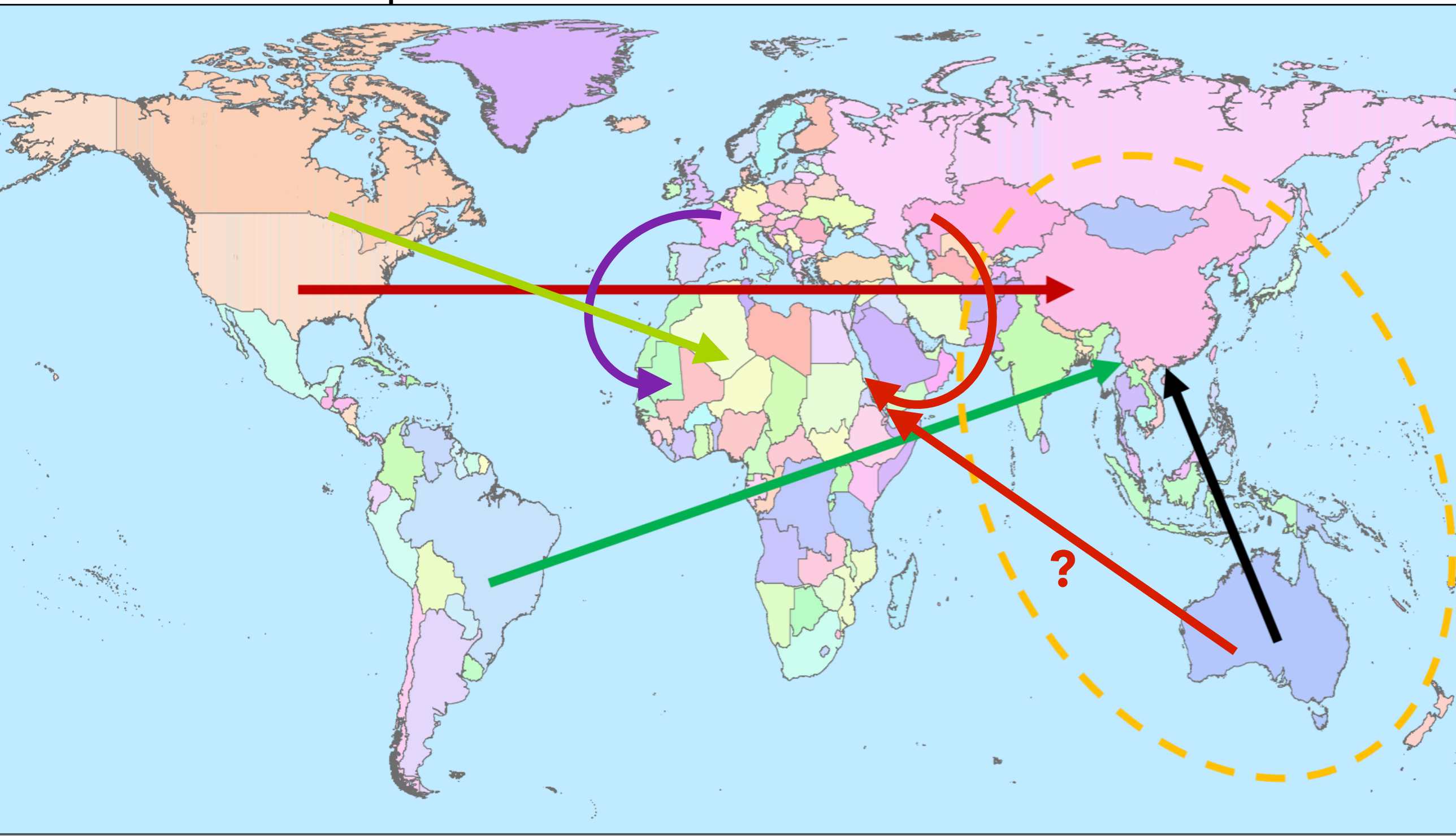


World population



African population

New developments in wheat?



How is Australia placed to compete?

A closer look at productivity gains

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Quantity verus quality

- Australia seems to be very concerned with, to put it simply, the quality versus the quantity of its crops

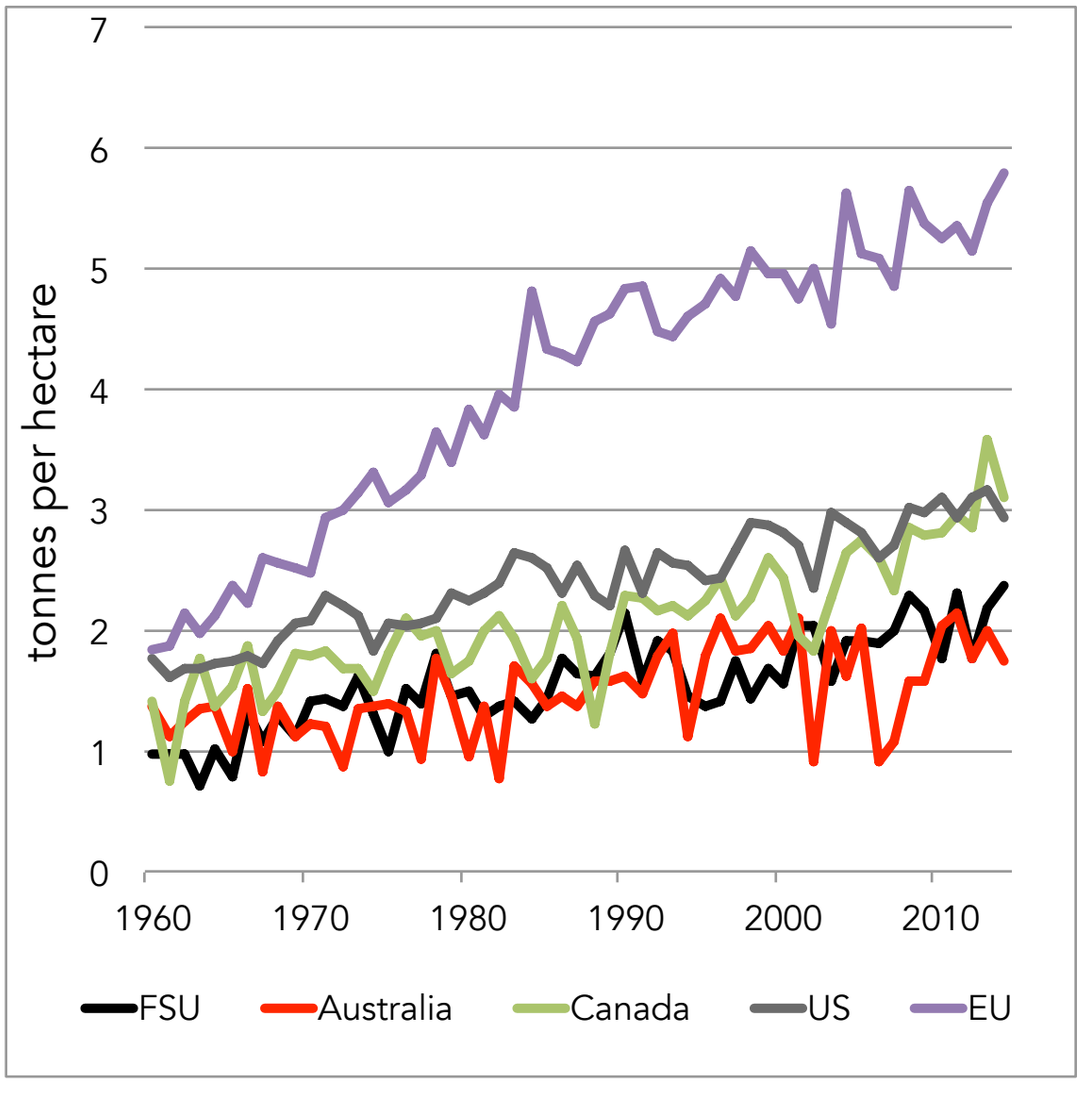
- Work done for the GRDC established that “location” was at least as valuable as “traits”

- The entire wheat crop gets a US$30 per tonne or more lift from being in Asia. A smaller portion (<40%) gets an US$80 per tonne boost from quality parameters

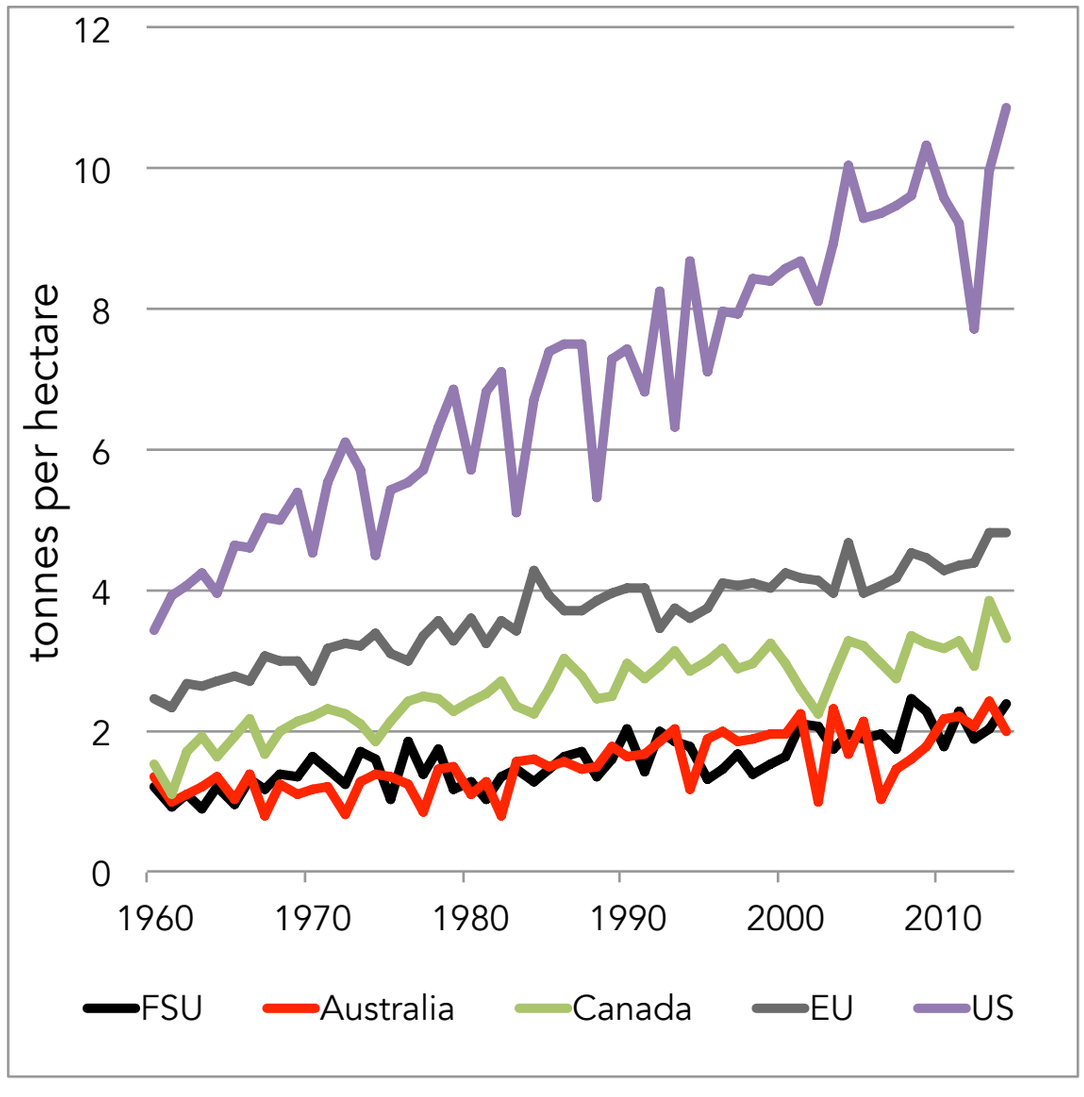
- But both premiums depend on Australia remaining competitive with other export locations

Australia has among the lowest yields of the major exporters…

As a feed ingredient, US corn is by far the highest yielding crop



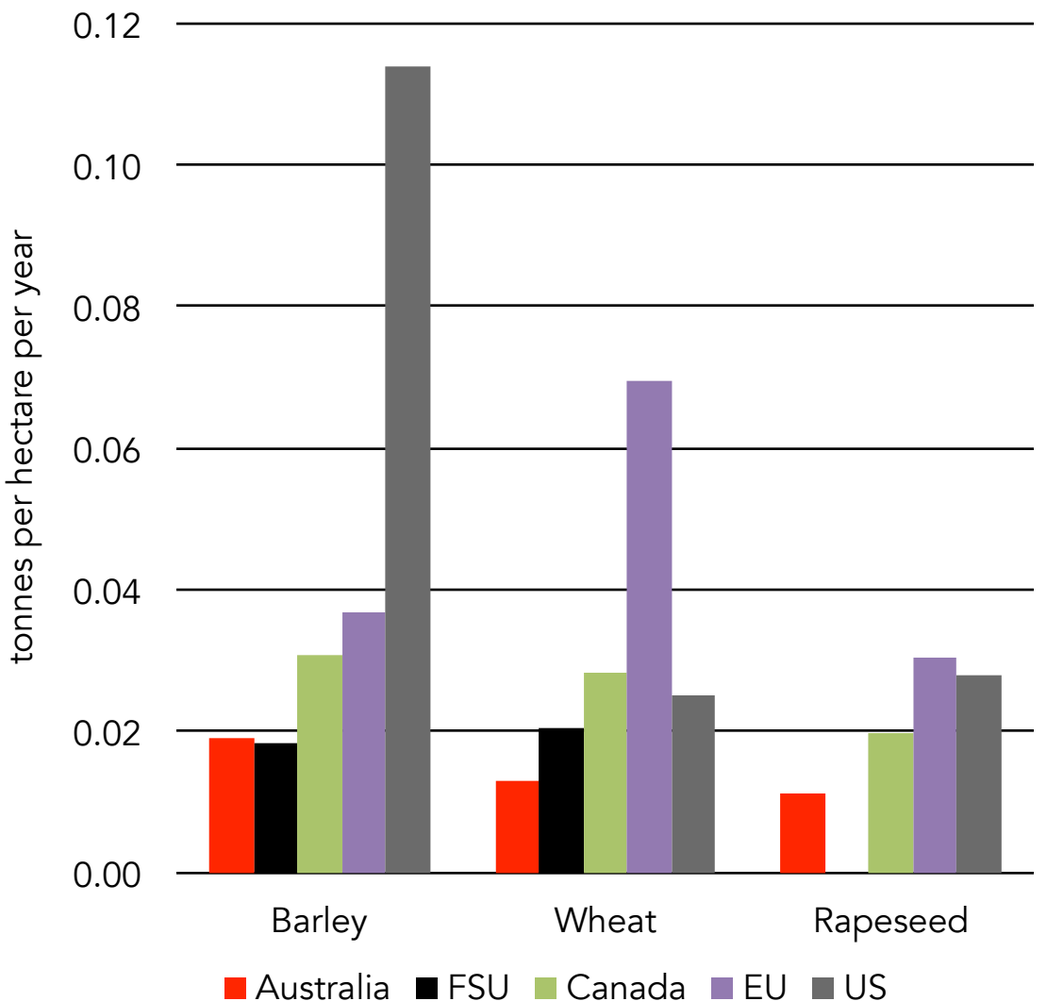
Wheat yields



Barley (and corn) yields

…which becomes clear when the slope of trend yield is compared across countries and crops

However, percentage yield determines competitiveness

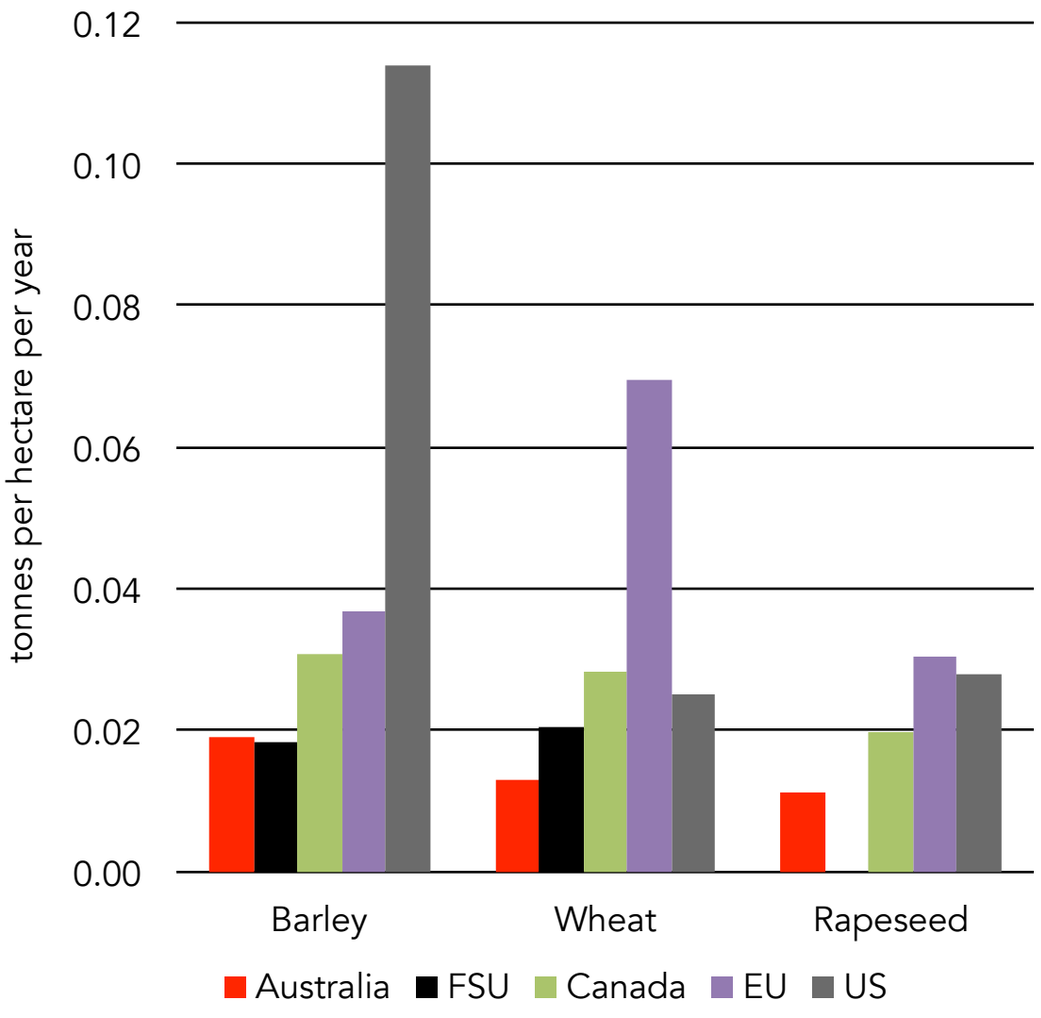


Slope of trend yield

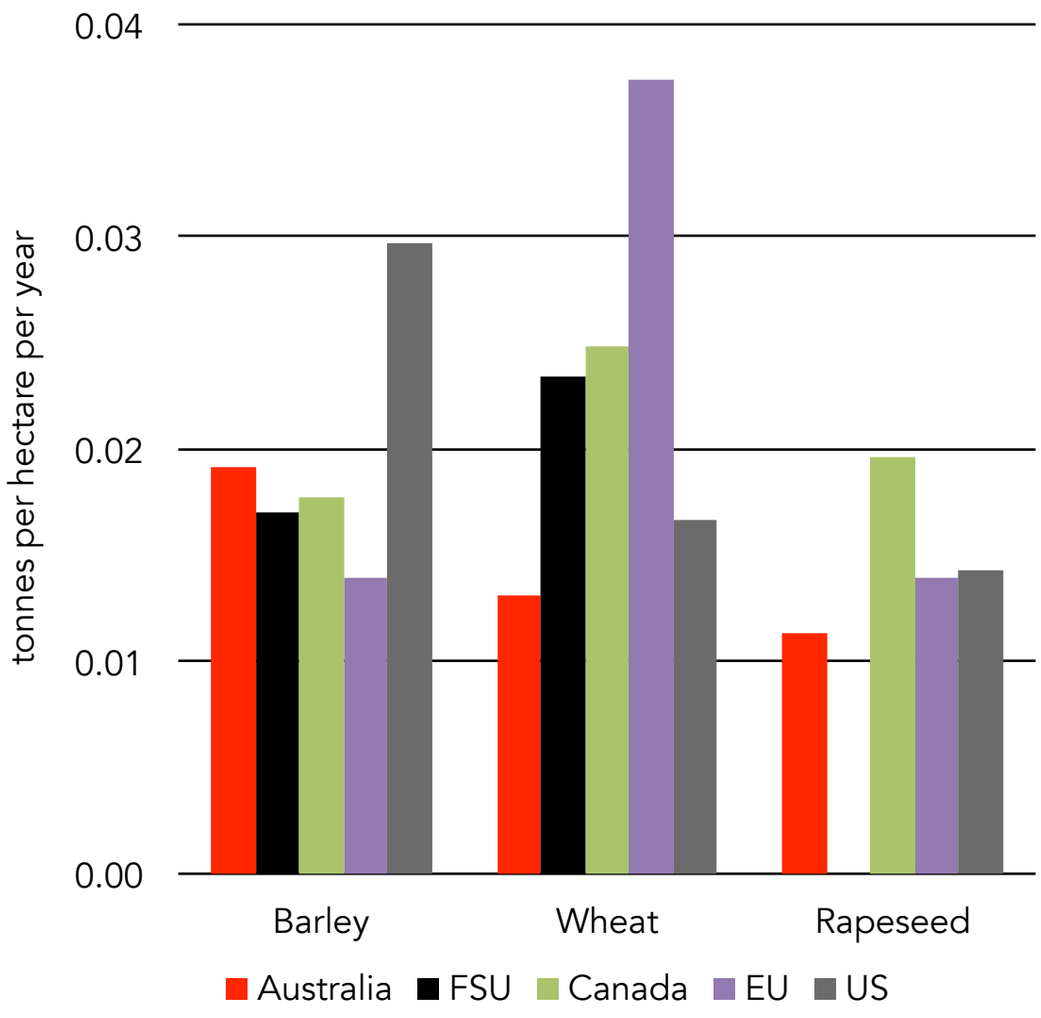
slope/intercept = slope/intercept

Things improve when yields are adjusted…

…but wheat yields still lag well behind the competition



Slope of trend yield



Slope of adjusted trend yield

Summary

- The good news: Aussie barley fairs well against the competition, losing out only to US corn, but corn has already pushed barley to marginal areas so barley is stable against the competition

- The bad news: wheat, the main crop, is well behind the competition, even FSU wheat. This means:

  - Competition with CWRS and US HRW in Asia intensifies

  - Australia is well behind both the EU and FSU for competition in emerging African markets

The simple message at the end of all this

- Spend money on wheat yields (while trying to maintain your quality parameters)

- Why?

- It extracts maximum value from your current good luck of being in the world's main deficit region for grains and oilseeds

- It sets you up for the future when population moves west

contact:

simon@commoditia.com

+65 8165 7698