

A photograph of a wind turbine on a dark hill in the foreground. The background shows a body of water and distant land under a sunset sky with a bright orange and yellow glow.

Caveat Emptor

Investing in the second half of the Age of Oil

4th Annual Conference on Biophysical Economics, October 26-27 2012

Chris Sanders

Sanders Research Associates Limited

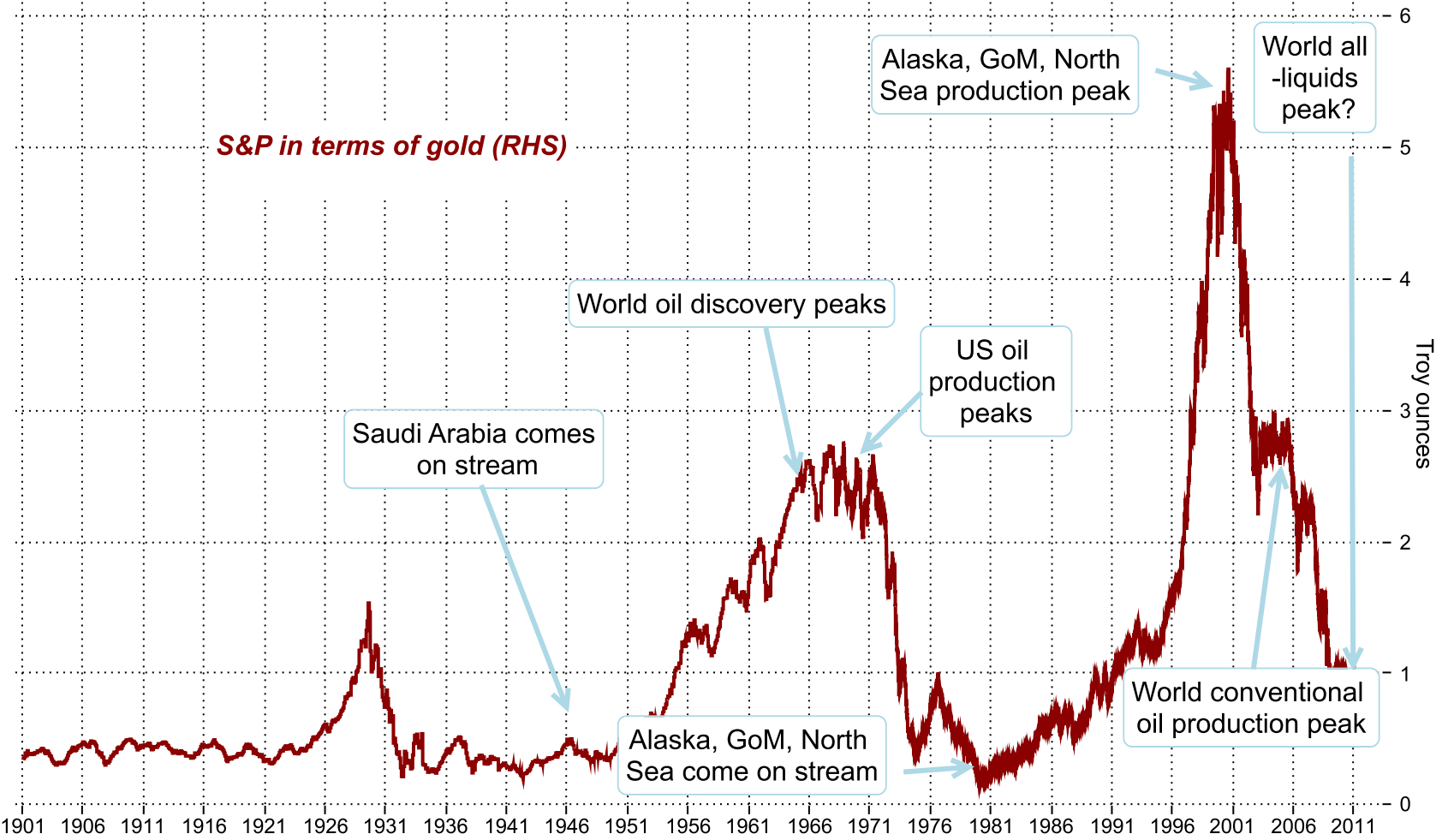
It really is different this time

- No “normal” cycle
- In US at least, overwhelming % of stock traded volume is by algorithms
- Neither inflation, employment nor growth data are clean
- Retail investors are fleeing or have fled the stock market

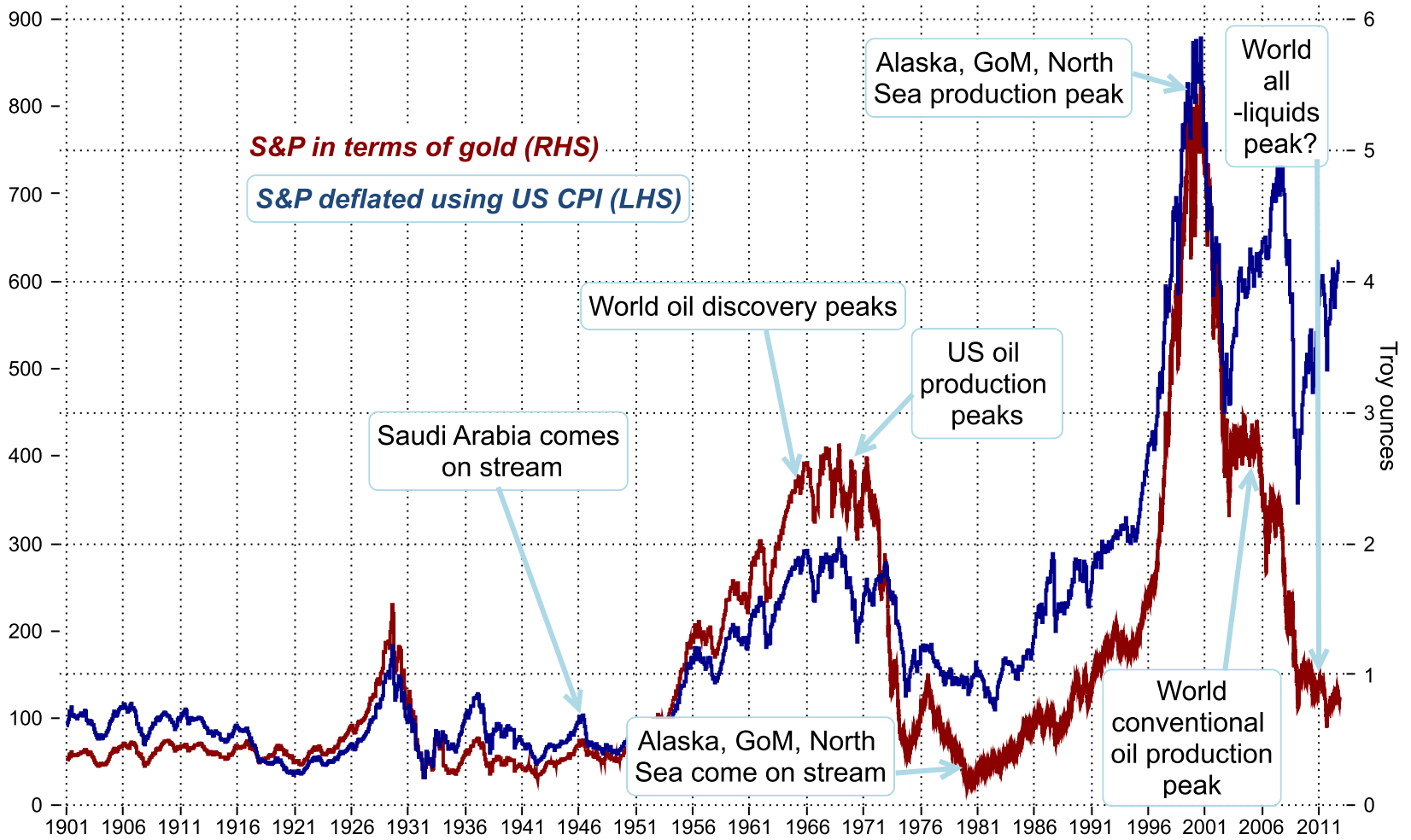
Some important indicators



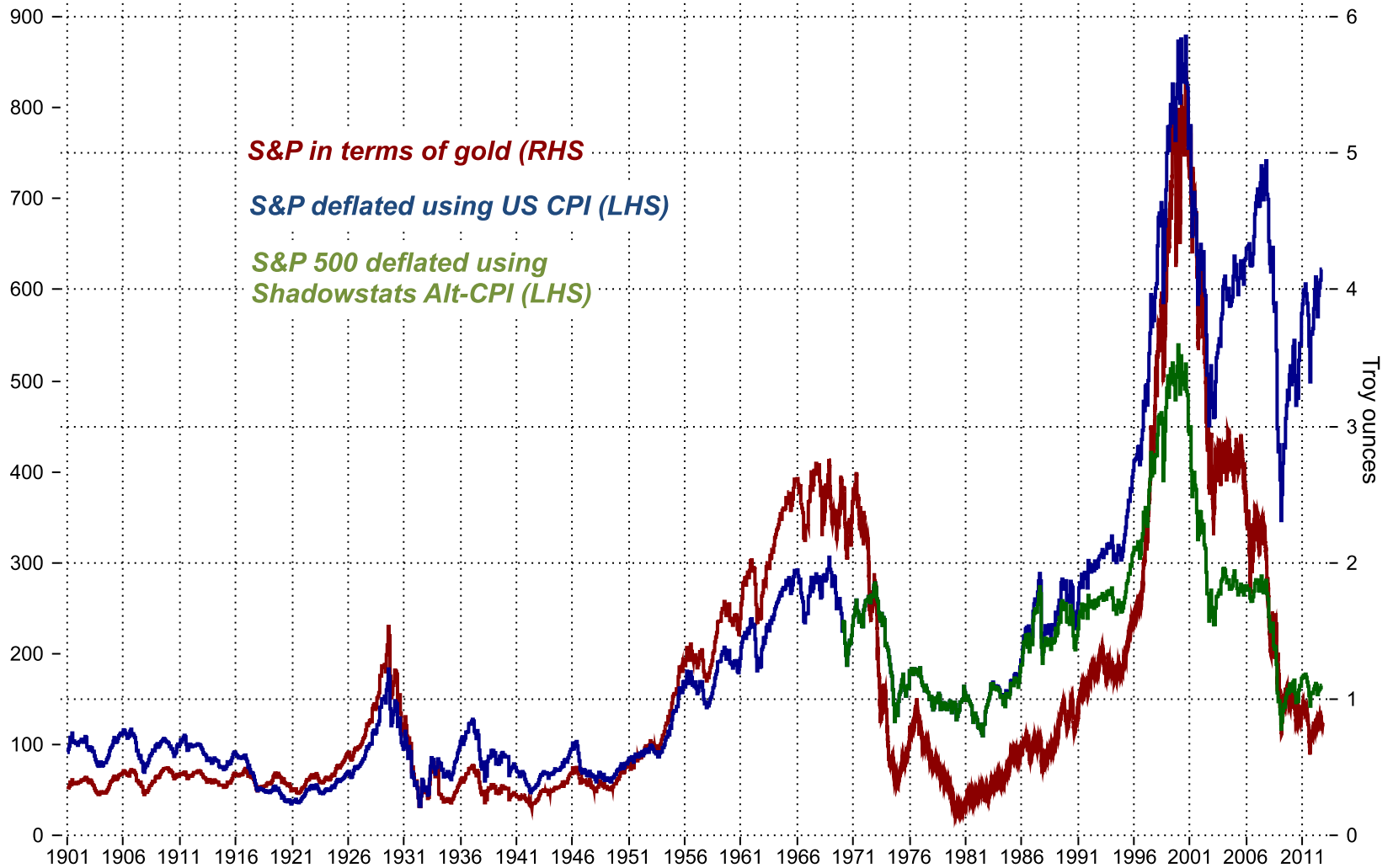
S&P 500 in terms of gold



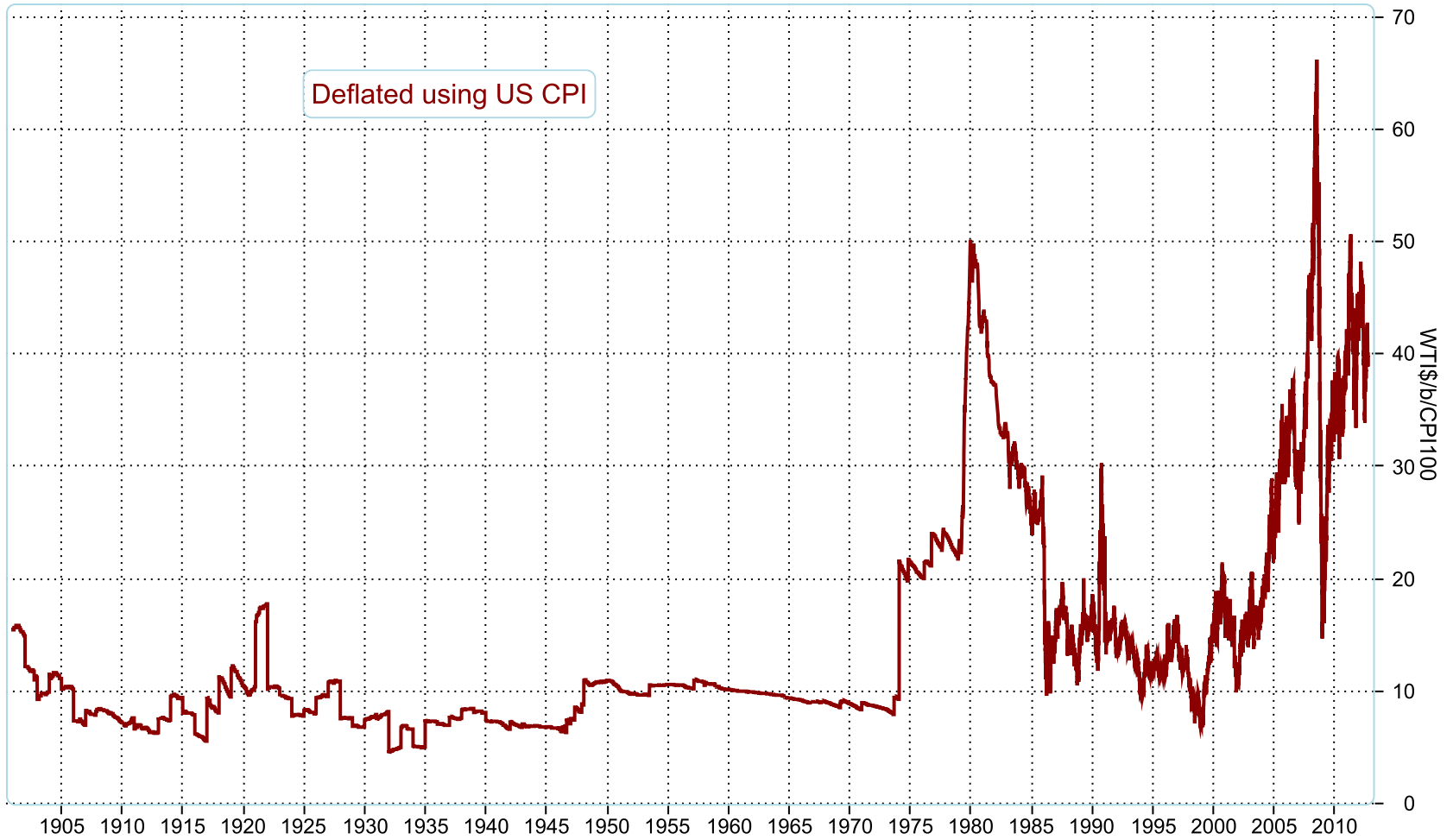
S&P 500 in terms of gold and deflated using US CPI



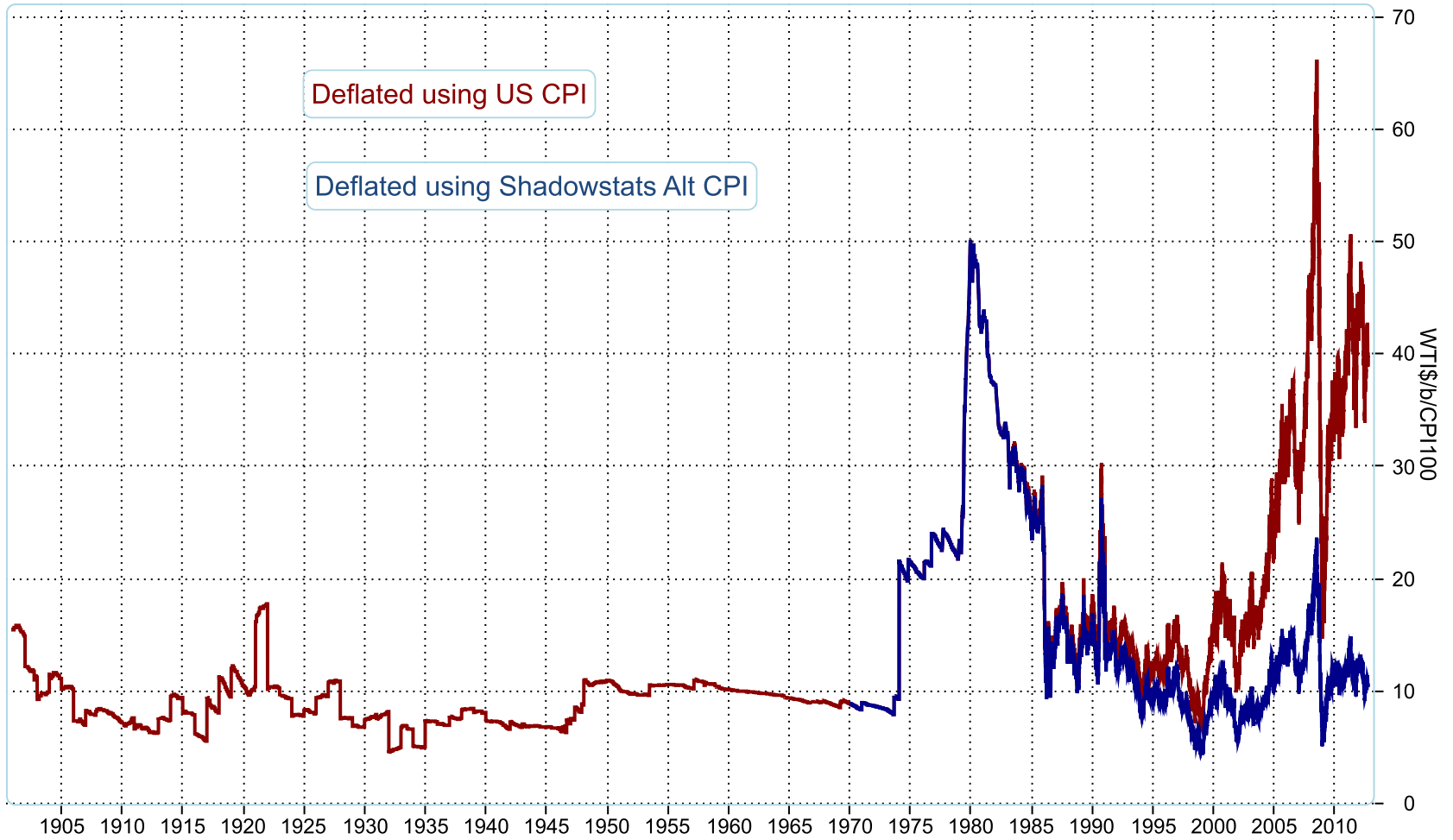
S&P 500 in terms of gold and deflated using US CPI and Shadowstats Alt CPI



Real oil price 31 Dec 1900-28 September 2012



Real oil price 31 Dec 1900-28 September 2012



What about inflation?

$$PQ = MV$$

Where P = prices, Q = output, M = money
and V = velocity of circulation

What about inflation?

We can as easily express the same as:

$$P(Ee)=MV$$

Substituting Q for Ee where E equals energy used in process conversions and e equals the efficiency of the conversion process

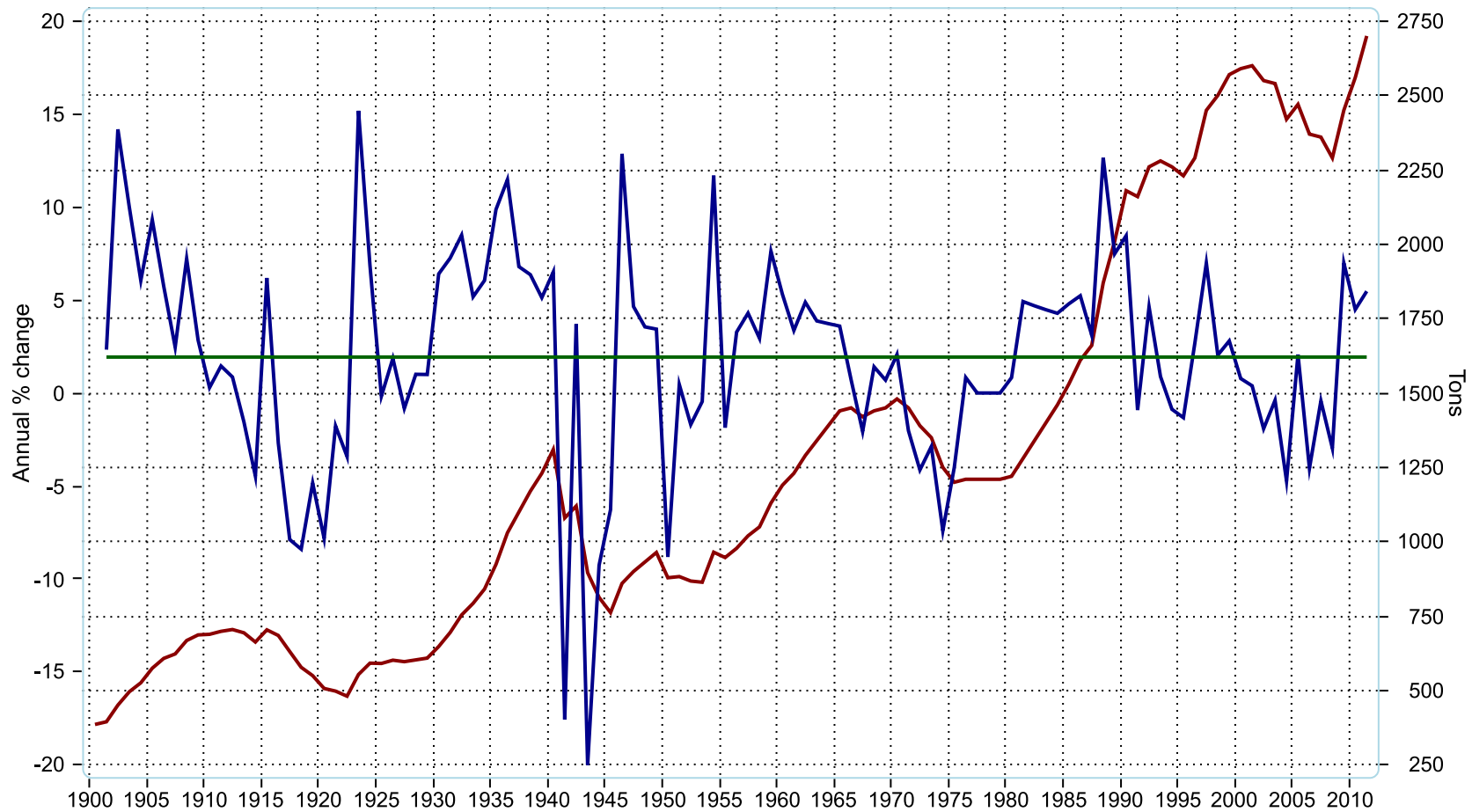
What about inflation?

And solving for prices

$$P = MV / Ee$$

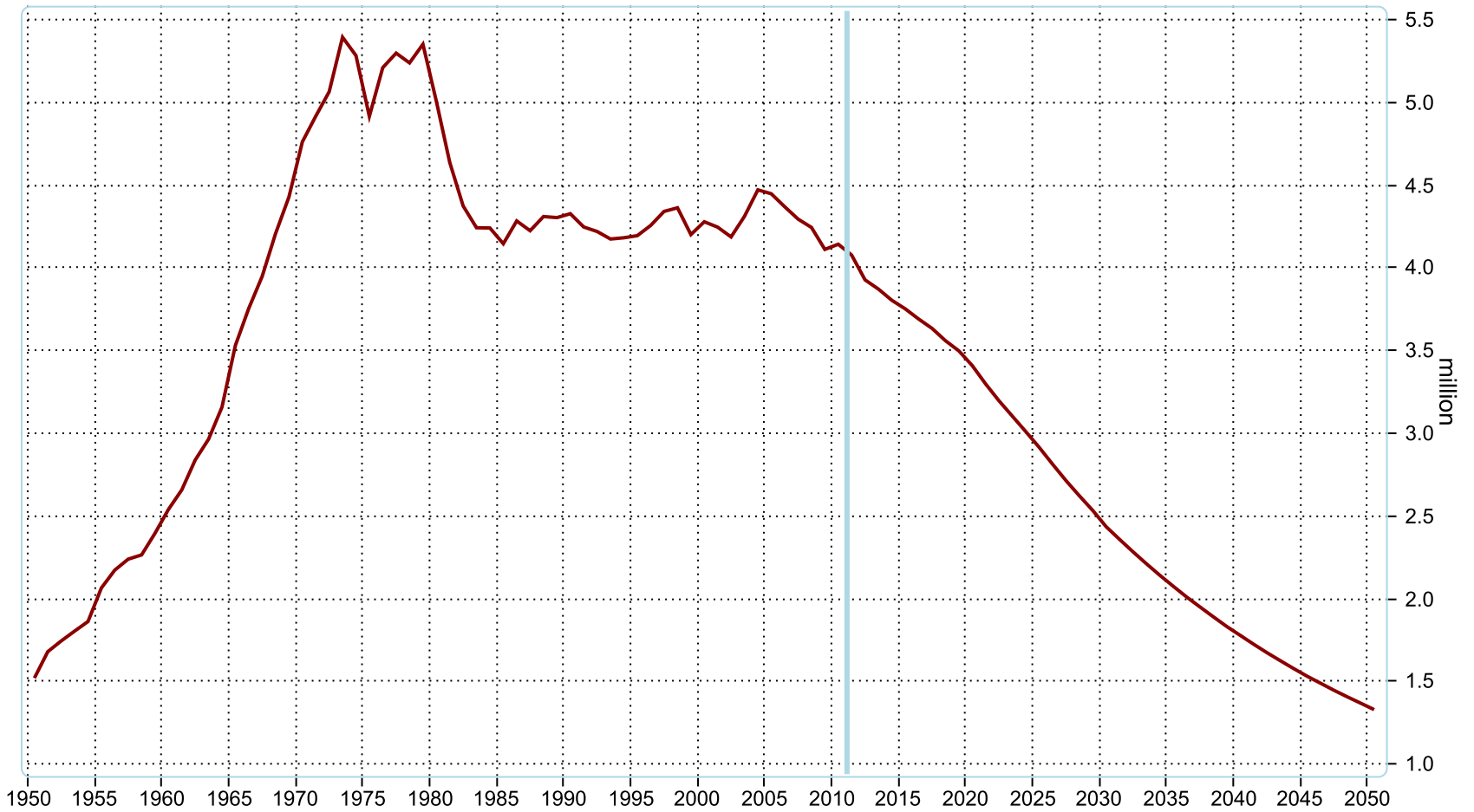
World gold production (RHS) and rate of change (LHS)

USGS, 1900 - 2011



World per capita oil production

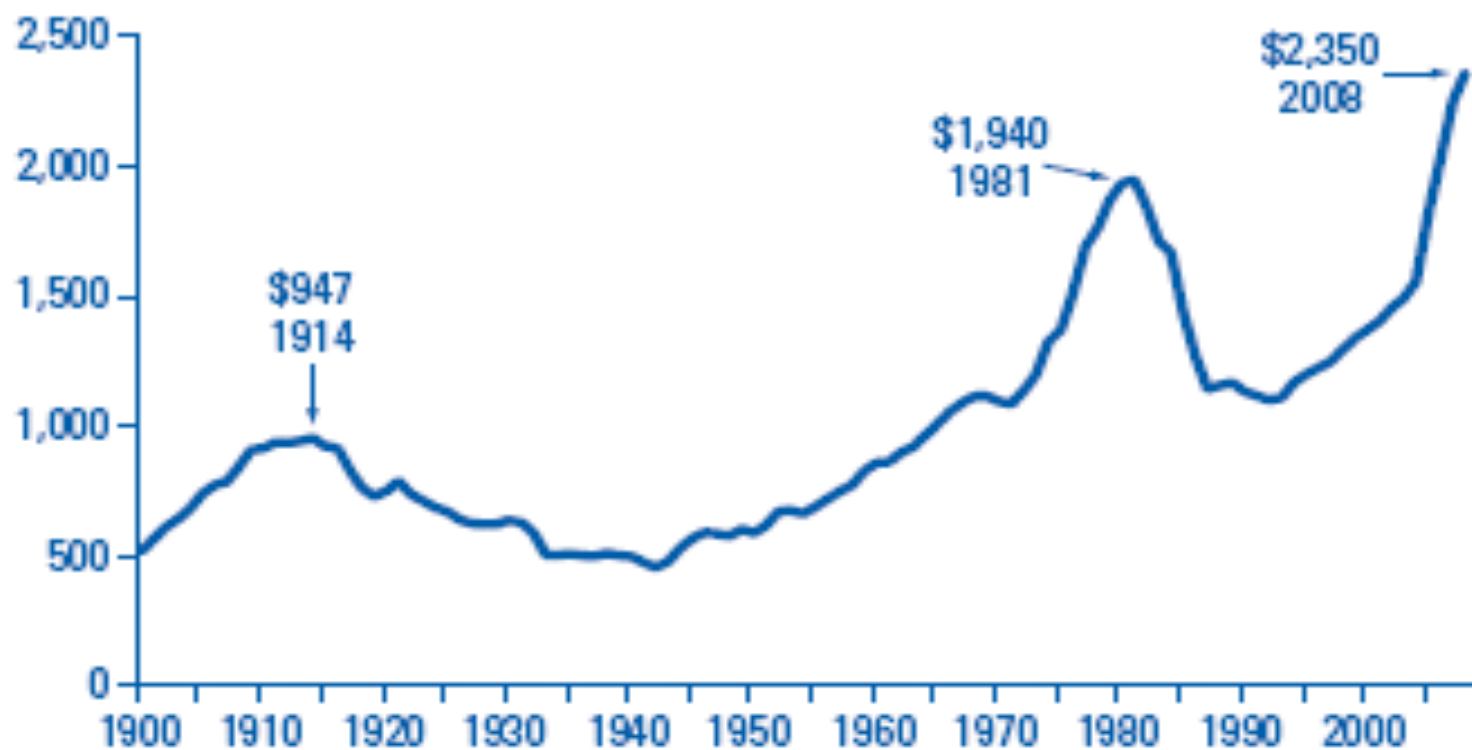
Campbell 2012 and Geohive



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In 2008 Dollars, Present Farmland Prices Exceed the Two Price Booms of the 20th Century

Farmland Price Per Acre (2008 Dollars)



Source: USDA National Agricultural Statistics Service.

So, what to do?



Two approaches

Centralization

- Complex
- Urban focused
- IT dependent
- Energy intensive
- Capital intensive
- Corporate giantism
- Industrial agriculture
- Global

Devolution

- Less IT dependence
- Less energy intensive
- Labour intensive
- Production near consumption
- Sustainable agriculture
- Regional and local

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