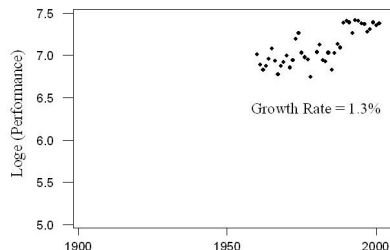


## Price Index Bias: Hulten-Bruegel Paradox

The standard method of assessing the purchasing power of money uses a multiplier based on the changing value of an otherwise unchanging basket of purchases<sup>1</sup> monitored over time, the Consumer Price Index. But deviations from constant quality in the basket (due to innovation) cause a bias of  $\sim 0.6\%$  in the result<sup>2</sup>, exaggerating the extrapolated economic poverty of our ancestors to the point where, for the peasants of Bruegel's *Peasant Wedding* (seen enjoying a sort of porridge) less than an ounce of modern potatoes a day would have been supposedly affordable (and nothing else) – a paradox close to absurdity. But even potatoes have undergone innovation (modern on the right side, antecedent Andean potatoes on the left).

By applying the MELF equation to DINTEC™ data, potato performance can be enumerated (center). The growth rate of potato quality  $\sim 1.3\%$  per year clearly exceeds the  $\sim 0.6\%$  bias, so Dutch peasants could have afforded plenty of the low quality (by our standards) potatoes of their day. And the same argument is true for all commodities, potatoes having probably had one of the slower rates of technological change among them. Spending by our ancestors always needs to be evaluated in the context of the technological quality achieved in their era, not ours. The actual paradox is that, until now, this has not been analytically possible.



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<sup>1</sup> There are many issues with this methodology. The Boskin Commission<sup>2</sup> addressed some of them. But the hidden effect of competition on price was overlooked. It is dealt with in the Work in Progress Paper.