Productivity Of Electricity Usage Continues To Rise

With all of the knuckle-cracking and pontificating going on about how human labor is being displaced by robots, algorithms, artificial intelligence and a drone or two, a story such as that espied on Monday about Saudi Arabia advertising for eight new executioners to handle the rising load of capital punishment is reassuring. Some jobs are not going to be displaced by a Website anytime soon nor will they pay royalties to the estate of Marie Antoinette.

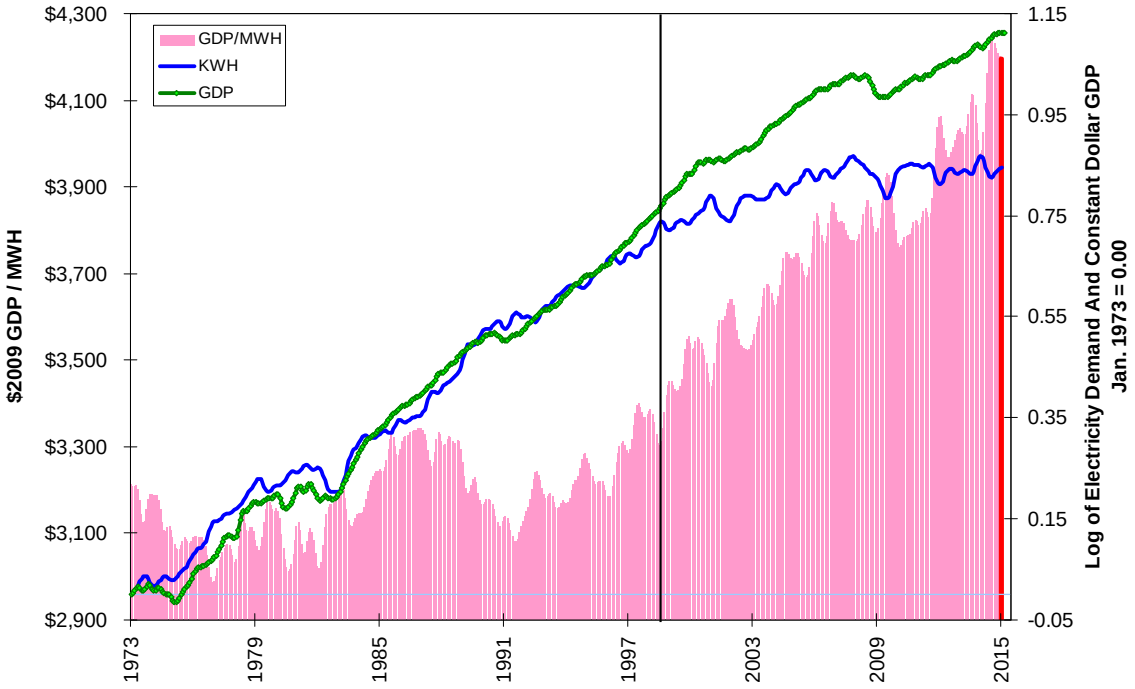
While the productivity of assorted head-loppers probably has not increased much over the centuries, this is the exception to the human condition. Not only do we tend to get better at what we do over time, we tend to get more out of our various factors of production such as capital, technology, land, agricultural resources and energy. This stands to reason in a competitive economy: Only a fool would construct a factory less efficient than an existing factory. It does not stand to reason in public-sector monopolies shielded from the forces of competition. There is a reason we quip, "Good enough for government work," but not, "Good enough for Silicon Valley."

Electricity Productivity

Let's take electricity, something apparently not being considered as a source of productivity improvement by government monopolists in the miscreant-disposal sector. The productivity of electricity consumption in the U.S. continues its upward ratchet and established a new high in 2014:Q3. Constant-dollar output per megawatt-hour has increased at an average annual rate of 2.21% since 2010:Q1; labor's average annual productivity growth has been 1.96% over the same period.

The linkage between the growth rates of constant-dollar GDP and electricity demand shifted significantly after October 1998 (black vertical line) in reflection of the numerous structural and regulatory changes in energy and power market then underway. That period was characterized by the rise of merchant energy providers such as Enron and others in the where-are-they-now file. The r-squared or percentage of variance explained declined from 0.988 prior to October 1998 to 0.818 thereafter and the beta of the relationship increased from 1.081 to 1.973.

Productivity Of Electricity Consumption Reached New High In 2014:Q3



The productivity measure for electricity is a function of both declining demand and rising GDP. Electricity demand peaked on a seasonally adjusted basis at 331.80 billion KWH in January 2014 and declined 2.39% through January 2015, the last datum available. Constant-dollar GDP increased 2.96% over the same period.

The ability of the productivity of electricity consumption to grow by a significant amount over a long period of time should caution those who use electricity production as a proxy indicator of economic growth in China. Such a technique has not been valid in the U.S. since 1998.