



## Peak Caviar

Posted by [Ugo Bardi](#) on August 5, 2008 - 11:00am in [The Oil Drum: Europe](#)

Topic: [Demand/Consumption](#)

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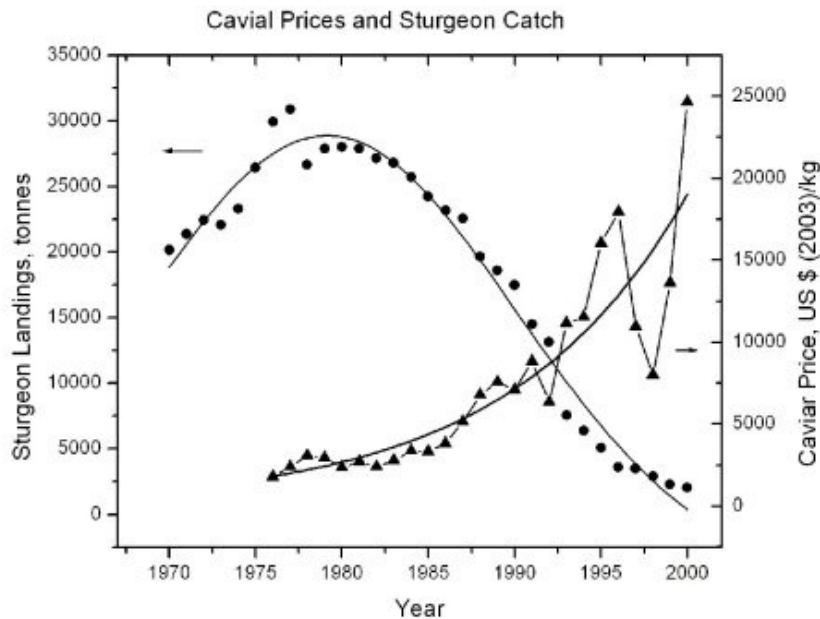


*Once, black caviar from the Caspian Sea was ubiquitous in Russia in its typical blue cans. Now, it has disappeared. "Peak Caviar" has taken place around 1980 in Russia*

This July, traveling in Russia, one of the things that I noticed was the disappearance of black caviar. Once, it had been common and - in the days after the fall of the Soviet Union - very cheap for Westerners with dollars in their pockets. Now it was gone; conspicuously missing from the otherwise well stocked supermarkets and shopping malls of today's Moscow.

I asked what had happened; the answer that I received was that the government had prohibited the sale of black caviar. This explanation came with some extra details, such as that the ban had come because the market had been taken over by some unspeakable Caucasian mafia which had set up a lucrative black market. Curious, because red caviar from the Far East was still on sale. People seem to try all the possible mental exercises before they are willing to use the dreaded word "depletion".

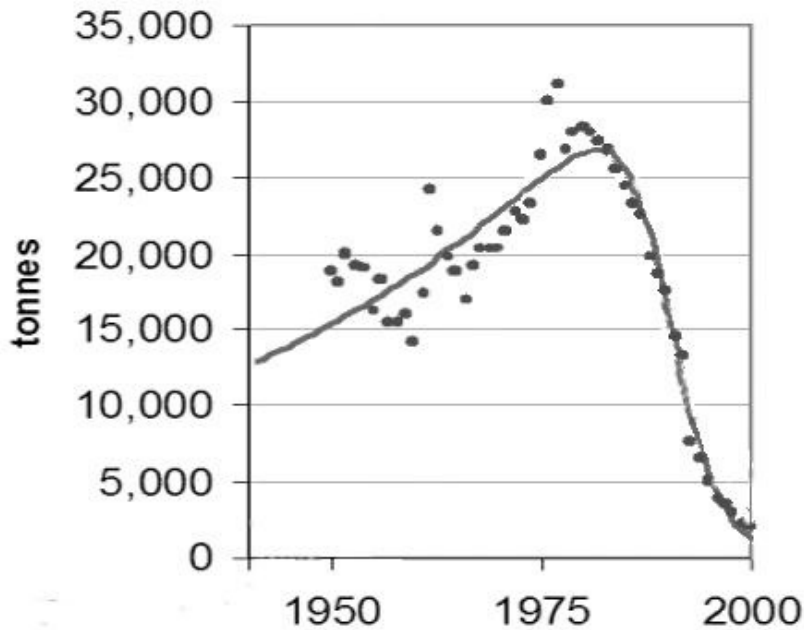
Back home, searching the internet, I found that it is true that the Russian government has banned caviar sales in January 2008. It is also reported that there have been problems with illegal sales. The reason for all this, however, is a simple one: sturgeons, the source of black caviar, are nearly completely gone. "Peak sturgeon", and as a consequence, "peak caviar (black)", took place around 1980. This is something I know well since I had written a paper on the subject that I presented at the fourth ASPO conference in Lisbon in 2005. Here are some data from the paper



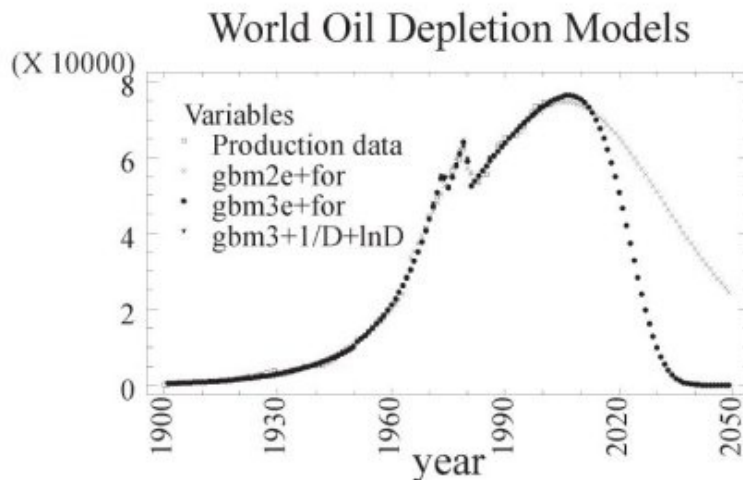
As you see, there has been an evident peak around 1980. Note also how prices (corrected for inflation) go up exponentially. It is the same that was observed with whale oil (Bardi 2008) and that we are seeing now with oil prices. In early 2008, Caspian caviar prices had skyrocketed to about 10-20 k\$/kg (note that in the figure prices are per kg of sturgeon )

"Peak Caviar" is another confirmation of how common the "Hubbert" behavior is. It doesn't matter if a resource is theoretically renewable, as sturgeons and whales are. If sturgeons or whales are killed much faster than they can reproduce, then they behave as a non renewable resource; just as crude oil. Note also something that we had not noticed in the first study. Initially, we had fitted the curve with a symmetric gaussian or derivative logistic function; that is what you can see in the figure taken from the paper. But, later on, we added more points to the graph and my coauthor, Leigh Yaxley, found that the fitting was much better using an asymmetric logistic. This graph is not in the paper presented in Lisbon.

Caspian Sturgeon Annual Production



As you see, the declining phase of the production curve is much faster than the growth phase. In my interpretation (Bardi 2005), these asymmetric curves appear when people make a large effort to continue increasing production. By means of increasing efforts and using the best technologies, it is possible to make production continue its growth beyond its "natural" peak at midpoint. This increase, necessarily, is paid with a more rapid fall after the peak. Renato Guseo (2008) and his coworkers have modeled the same behavior for the world's crude oil production.



*The model by Guseo et al. (2005)*

If that happens today, that is if crude oil production falls so rapidly as we see in these curves, well, we are in deep trouble. Black caviar is something we can do without, but that is not true for black gold

## References

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