

The Alpaca Bubble Revisited

Tina L. Saitone and Richard J. Sexton

We revisit the U.S. alpaca industry six years after having conducted a study suggesting the industry was in the midst of an unsustainable speculative bubble. We show that in the aftermath the bubble has largely burst. We also offer some lessons intended to prevent the recurrence of such bubbles in agriculture.



Prices for alpacas sold at auction between 2005 through 2011 declined each year by several thousand dollars, with the largest annual decline of \$8,000 occurring between 2007 and 2008.

In the January/February 2006 issue of *ARE Update*, we published an article on the burgeoning U.S. alpaca industry entitled “Do Alpacas Represent the Latest Speculative Bubble in Agriculture?” The research was motivated by the dramatic growth of the industry in the United States, the curious marketing practices (such as advertising the benefits of raising alpacas on cable television), and the remarkable prices paid for alpaca stock. We reported rapidly escalating prices at several alpaca auctions, with mean auction prices in 2004 of \$26,000 and \$31,000 for the two major breeds, Huacaya and Suri, respectively.

Our analysis strongly suggested that these prices were unsustainable and that alpacas represented the latest example of a speculative bubble in agriculture. The economic basis for our conclusion was rather straightforward. First, fiber, the single marketable product produced by an alpaca, was in most cases valued at less than the variable costs of maintaining an alpaca.

Second, alpacas are native to Peru, which is home to the world’s largest alpaca herd of roughly 3.5 million animals. In contrast, by 2009 there were about 150,000 registered alpacas in the United States. Although precise statistics on the value of alpacas in Peru were difficult to obtain, nevertheless it was abundantly clear that Peruvian alpacas sold for, at most, a few hundred U.S. dollars.

Trade in live animals between the U.S. and Peru was prohibited because of concerns about animal disease transmission. But there were and still are no barriers to trade for alpaca fiber. Thus, a straightforward application of what economists call the

“factor price equalization theorem” indicated that, in equilibrium, prices for live alpacas in the United States and Peru should equalize apart from some minor differences due to fiber quality and fiber shipping costs.

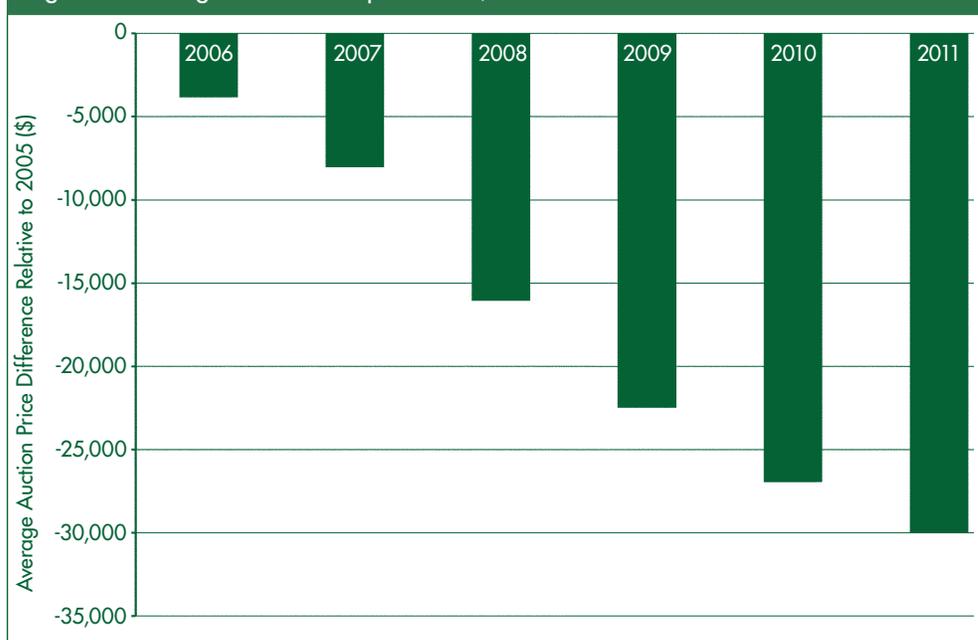
That point was important to our argument because industry proponents claimed that the market for alpaca fiber was poised to grow rapidly. Thus, the case could be made that the high alpaca prices observed at the time of our study were the product of rational investments in a high-growth industry.

Our analysis showed that an annual sustained growth rate in fiber prices of at least 20% was needed to justify the live-animal prices observed at the time. The demand growth needed to sustain such a rate of price increase would be almost unprecedented for an agricultural product. Moreover, the potential for fiber exports from the dominant Peruvian herd and production from a rapidly growing U.S. herd meant that supply could respond to rising prices to preclude dramatic and sustained price increases.

The Story Six Years Later

Our purpose in this paper is to examine what has happened in the intervening years since this study was published and to distill the lessons that can be learned. We recently gathered auction price data (1,493 observations) for alpacas, similar to those analyzed in the original study, for the intervening years since that study. The prices from alpaca auctions between 2005 and 2011 are likely not representative of all alpaca prices because the sampled auctions tend to attract the alpacas considered to be of the highest quality. The reported prices also

Figure 1. Average Decline in Alpaca Price, Relative to 2005



overstate actual sales values because owners can set a minimum reserve price in the auction; if no price is offered above the reserve, the auction records a sale at the reserve price to the original owner. Nonetheless, trends in prices in these auctions will reflect overall trends in the alpaca market.

Our approach was to specify a simple statistical model that expressed an alpaca's price as a function of its type (Huacaya or Suri), gender, the specific auction at which the animal was sold (Alpaca Owners and Breeders Association, Breeder's Choice, America's Choice, and Futurity), and the year in which the animal was sold. The primary focus of our interest was the effect of the sales year on auction price. All of these results were statistically significant at the 90% level or greater and are summarized in the chart in figure 1.

Figure 1 shows that prices declined in every year (relative to the base year of 2005). The decline in price in each year is several thousand dollars, with the largest annual decline of \$8,000 occurring between 2007 and 2008. Figure 2 shows the mean annual male and female alpaca price in our dataset. The figure shows the male price fell by a factor of five between 2005–2011,

while the female price declined by a factor of 3.5—leading to a near convergence of male and female prices by 2011. The uptick in male prices in 2007 is due largely to two sales recorded in excess of \$200,000 in that year.

If indeed the 2011 figures represent actual sales and not just prospective sellers' hopes in the form of reserve prices, then they indicate that although most of the air has escaped from the alpaca bubble, some remains. Purchases at these prices must reflect the actions of those who hold out hope for the industry's recovery and are acquiring what they consider to be prime breeding stock.

A poignant story can also be told from perusing commercial websites such as Craigslist. Here, one can find offers to give away alpacas or to sell entire herds for a tiny fraction of what a single animal would have fetched several years ago. For an owner who doesn't attach an intrinsic value to owning alpacas as pets or "rural lawn mowers," the offer to give them away is economically rational, given that their marketable fiber is typically worth less than their maintenance cost. For example, we reported annual maintenance costs in the range of \$169–\$308

per animal in our 2006 study. Those costs are likely modestly higher today.

An informal examination of fiber sales offers on the Internet in a variety of locations revealed a wide range of offered sales prices, with \$10–12 per lb. roughly representing the upper end of the sales price distribution. Thus, if the entire 6.5 lbs. of fleece yielded by a typical alpaca could be sold for this price (an unlikely proposition), its marketable product would be worth at most \$65–78 per year, less than half the conservatively estimated maintenance costs.

Lessons to Be Learned

History suggests that speculative bubbles come along relatively regularly in agriculture, and they can cause much financial hardship to those who get caught up in them. In a longer version of our *ARE Update* paper (see the Further Reading box), we provide a brief history of such bubbles and some telltale warning signs. Bubbles are common for products that can be produced on relatively small parcels. In addition to alpacas, ostriches, chinchillas, Shetland ponies, emus, Berkshire hogs, and Merino sheep are examples of livestock that have experienced speculative bubbles.

The bubbles are also marked by a paucity of outside, objective information and a group of investors who communicate primarily among themselves. For example, when we first began work on the alpaca industry, we were surprised to find no objective economic studies, even though the U.S. alpaca herd was growing rapidly and was present to a degree in every state.

Bubbles are also characterized by the absence of what economists who study the phenomena refer to as the "smart money," i.e., sophisticated investors. In agriculture, among the "smart money" investors would be experienced agriculturalists or agribusiness firms, none of whom became involved in the alpaca industry. Inability to

“short” an asset also makes it more vulnerable to a speculative bubble because informed investors have no way to arbitrage a price that is objectively too high through short sales.

Our own experience in the aftermath of conducting the first alpaca study is also instructive. Not surprisingly, it caused a considerable stir among alpaca owners but there was little attempt to address the economic content of our work. Instead, various “theories” abounded that served in the minds of many to debunk our work and discredit us. For example, one of us was claimed to be a disgruntled alpaca inseminator from Florida. In another case we were asserted to be UC Davis undergraduate students who conducted the study as part of a marketing class. Yet another claim is that our study was UC Davis’ revenge for the Alpaca Registry no longer using UC Davis to conduct alpaca DNA tests.

An alternative form of critique was to focus on a single fact or assumption employed in the study, such as the price of a bale of hay, argue that it was incorrect, and thereby claim that the entire study and its conclusions could be summarily dismissed. Because there was considerable variability reported in production costs and fiber prices, we erred on the side of conservatism throughout the process of conducting the original study, conducting simulations for a wide range of values for fiber, alpaca costs of production, and discount rates. The inescapable conclusion was that no set of market conditions could sustain the alpaca prices prevailing at the time. Some of this interchange among industry participants, now several years old, is preserved on this website: www.alpacanation.com/forum/topic.asp?TOPIC_ID=2327.

Such reactions are readily predicted by the theory of cognitive dissonance from psychology. Our study’s conclusions were dramatically at odds with beliefs alpaca owners held among

Figure 2. Average Auction Prices for Male and Female Alpacas, 2005–2011



themselves, and they were driven to find whatever devices they could to discredit the work in their minds and restore consonance among their beliefs. Had more heeded the warnings early on, they could have salvaged much of their investments but of course, in the process of doing so they would have collapsed the bubble even sooner.

Finally, as we noted, there is some evidence from the auction sales that a bit of air remains in the bubble. The harsh reality is that, whereas some may want to hold alpacas as pets or lawn mowers, an animal should not fetch more than a few hundred dollars, and they should not be held as investments.

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Tina L. Saitone is a post-doctoral scholar in Agricultural and Resource Economics (ARE) at UC Davis. She can be reached at saitone@primal.ucdavis.edu. Richard J. Sexton is professor and department chair in ARE at UC Davis. He can be reached at rich@primal.ucdavis.edu.

For further reading, the authors recommend:

Saitone, T.L. and R.J. Sexton. “Alpaca Lies? Speculative Bubbles in Agriculture: Why they Happen and How to Recognize Them.” *Review of Agricultural Economics* 29(2007): 286-305.