Profiting from the past: Are fossils a sound investment?

Scott Hippensteel, *Dept. of Geography and Earth Sciences, University of North Carolina at Charlotte, 9201 University City Blvd., Charlotte, North Carolina 28223-0001, USA, shippens@uncc.edu;*
Simon Condliffe, *Dept. of Economics and Finance, West Chester University, West Chester, Pennsylvania 19383, USA*

The role of the amateur collector in the field of paleontology has been controversial to say the least. Additionally, the value of rare, museum-quality vertebrate fossils and object d'art invertebrate fossils appears to be, at least from anecdotal evidence, quickly rising. Both factors continue to fuel the debate regarding the problematical relationship between amateur collectors, professional paleontologists, and commercial fossil dealers, especially as important fossils disappear from the research community into private collections. Complicating this issue is the poorly understood value of many of the fossil specimens that commercial dealers claim are ideal investments.

Commercial dealers have long claimed that fossils are an excellent investment opportunity, and other sources, including the *New York Times*, have remarked that fossils have outperformed other investment options (McClain, 1996). Additionally, anecdotal evidence of dramatic increases in fossil prices, especially for rare vertebrate fossils, is common in large-circulation financial magazines (Rohleder, 2001).

The appeal of fossils as an investment strategy is apparent when reviewing online commercial fossil sites. For example, for more than 30 years, one dealer has offered a list of "Four Good Reasons to Invest in Fossils" that includes "As a straightforward investment opportunity, fossils outperform many other options" (Two Guys Fossils, www.twoguysfossils2.com). According to dealers, the reasons that fossils are an excellent investment option are simple. Many commercial suppliers and online investment guides state that fossils are becoming more rare (Mountain Megalodons, www.mountainmegalodons.com/St.Mary.html; Wise Bread, www.wisebread.com/three-alternative-investments-for-long-term-enjoyment-and-appreciation; Best Way to Invest, www.bestwaytoinvest.com/stories/trex-skinnyfossil-trading; Nick's Fossils, http://www.nicksfossils.com/investing-in-fossils.htm) and that demand is, and will continue to be, greater than supply (Fossil Facts and Finds, http://www.fossils-facts-and-finds.com/megalodon.html). Other online sources state bluntly that fossils do not depreciate (E-How, www.ehow.com/how_2042338_sell-fossils) and that "even lower priced fossils hold their own with regards to investment potential" (Fine Fossils, www.finefossils.com).

The primary focus of our research for this paper was to compare fossils as an investment to several other common investment options. In doing so, we could test the hypothesis that fossils are an ideal investment option; further, we could assess the validity of two current investment perceptions summarized by a popular fossil investment guide: "The demand for high quality megalodon teeth far exceeds the supply. As a result the price of these rare teeth has been steadily increasing year after year making these fossils good investments that will gain value over time" (Fine Fossils, http://www.fossils-facts-and-finds.com/megalodon.html)—and a commercial dealer who specializes in "investment-grade" fossils: "The greatly limited supply of fossils means that their prices will hardly ever decline significantly, so there is little need to hedge investment risks" (Fine Fossils, www.finefossils.com).

To test these assertions, we collected more than 1,000 selling prices during 1991, 2001, and 2011 from commercial dealers and private sellers to establish a mean commercial value for four different fossils: one small and one large Neogene shark tooth, a Devonian trilobite, and an Eocene fish (see GSA Supplemental Data[1] for a full description of the fossil selection criteria). Each fossil was selected for study because it was commercially abundant during each 10-year time period and in demand by collectors but not necessarily by universities and museums. Additionally, we selected fossils that were *specifically described by commercial dealers as investment-worthy* and not museum- or research-quality fossils (many of which appear to have increased in value over time but are not often sold more than once). As a result, the data set represents a collection of fossils that are most often described, represented, and sold as investments, even though many may only be purchased as collectibles or display pieces.

The increase or decrease in selling price between fossils was compared to a similar investment in Standard & Poor's 500 stocks and a 20-year certificate of deposit with a return of 2%. An "assemblage" fossil investment, in which one fossil was purchased in 1991 (at the mean current selling price) from each group, was also compared to these indices. These other investment strategies are selected because they represent two distinct options. The S&P 500 represents investment in the broad stock market with risk of

GSA Today, v. 23, no. 8, doi: 10.1130/GSATG179GW.1.

[1] GSA supplemental data item 2013265, a full description of fossil selection criteria, is online at www.geosociety.org/pubs/ft2013.htm. You can also request a copy from *GSA Today*, P.O. Box 9140, Boulder, CO 80301-9140, USA; gsatoday@geosociety.org.

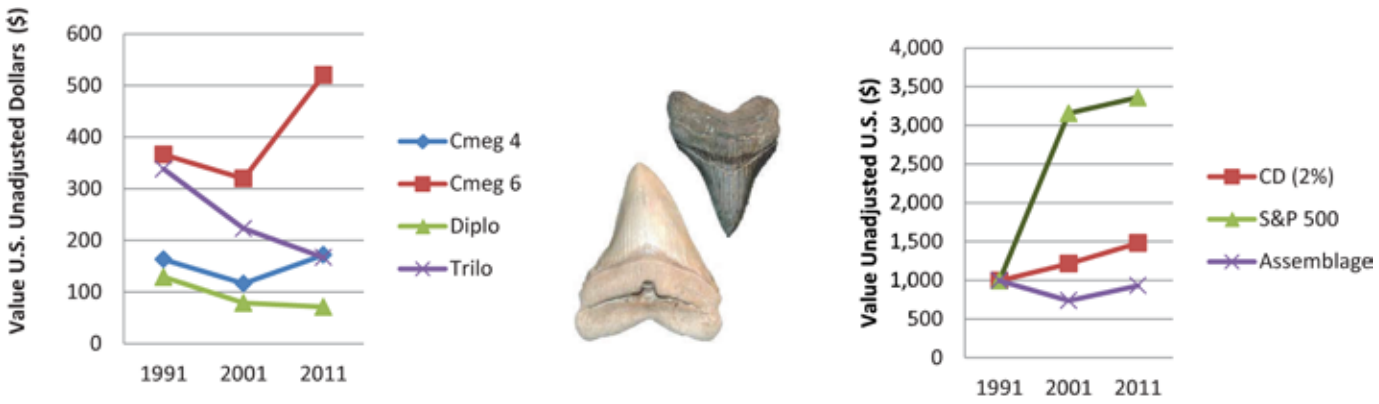

Figure 1. Value of the four fossils during the 1991–2011 study (left), two *C. megalodon* teeth from the data set (center), and value of the fossil "assemblage" compared with two other investment options (right).

loss of principle. The CD represents a risk-free investment with no risk of loss of principle.

Although the highly publicized sale of unique fossils such as the *Tyrannosaurus rex* "Sue" or *Tarbosaurus bataar* (which has subsequently been seized by Federal authorities for repatriation to Mongolia) leads the public to believe all fossils are increasing in value, our findings suggest that the fossils most in demand by collectors have decreased in value over the past 20 years. An investment in any of the fossil groups would have had a negative return after 10 years, and the "assemblage" value fell over the 20-year period by 6.7% (Fig. 1). However, this masks two distinct trends: For the 10 years to 2001, the "assemblage" shed 26% of its value. Over the following 10 years, the "assemblage" value rebounded 26%. The total "assemblage" value of the fossils fell from US$996 in 1991 to US$737 in 2001 and to US$930 in 2011. By contrast, the S&P 500 grew 237% from 1991 to 2011. The more pronounced growth occurred between 1991 and 2001 (216%). This coincided with the longest post–World War II economic expansion in U.S. history and a "bull" market for equities. The 10 years to 2011 yielded positive, albeit far less robust growth of 6%. An investment of US$996 in 1991 in an S&P index would have returned US$3,156 by 2001 and US$3,360 by 2011. A CD offering 2% for 20 years would return 49% (investing US$996 would have yielded US$1,214 by 2001 and US$1,480 by 2011).[2]

The largest misconception held by many private fossil collectors and potential investors is that the supply of fossils is severely constrained—perfectly inelastic, in economic terms—and that this supply constraint will lead to rising values. However, the supply of fossils, that is the number of fossils available in the marketplace, is actually increasing, which is having the opposite effect on values. Since 1990, the number of commercial fossil dealers and the availability of fossils to private collectors have increased substantially (Browne, 1994; McClain, 1996; Rohleder, 2001). Nevertheless, some investment guides go so far as to assure potential buyers that fossils "are becoming more rare" (Wise Bread, www.wisebread.com/three-alternative-investments-for-long-term-enjoyment- and-appreciation) and that "the source for these specimens is rapidly becoming depleted at an exponential speed" (Paleodirect, www.paleodirect.com/pgset2/investmentfossils). Although the *New York Times* described a "boom in fossil sales and prices" (Browne, 1994), the increased supply of many fossils has driven prices down. The supply of *Carcharocles megalodon* teeth, for example, has increased substantially during the past 20 years. In 1991, the majority of commercially available large shark teeth came from phosphate mines in North Carolina and Florida, beach collecting, or a handful of offshore (Florida) or river (South Carolina) sites. By 2011, fossil shark teeth were available from these same sources as well as numerous other river deposits, including the St. Mary's and Savannah in Georgia and the Potomac in Virginia. *C. megalodon* teeth are also available from international sources in Chile, Peru, and Italy.

Both supply and market availability of the Moroccan trilobite have also increased. Before 1991, the supply of such fossils was limited to a few large commercial dealers (e.g., Black Hills Institute of Geological Research; Paleosearch Inc.; and Prehistoric Journeys Inc.), and sales were primarily through trade shows and printed catalogs. The existence of a relatively small number of suppliers can produce a monopoly effect wherein higher prices result from a "take it or leave it" approach to selling. By 2001, however, the Internet made such fossils significantly easier to find and compare, and greatly increased the number of sellers and buyers in the marketplace. Today, sellers and buyers trade across large distances in a relatively costless environment. This is analogous to an increase in the market supply of fossils, which exerts downward pressure on prices. Furthermore, the Internet has significantly lowered the search costs involved in the purchase of fossils. Buyers may now gather price information from greater numbers of potential sellers without incurring significant cost. This mitigates any potential supply monopolies and brings greater competition to the marketplace as sellers now compete with each other—not just regionally, but nationally and even internationally. As sellers compete for business, greater competition leads to lower prices for buyers.

Finally, one invidious aspect of investing in fossils, especially fossils rarer than discussed in this study, is the ethical issues

[2] These results do not adjust for inflation. Adjusting for inflation will lower the returns for each investment type, but the relative performance will be unchanged. The best investment will remain the best, and the worst will remain the worst. In the interests of clarity and brevity the inflation adjusted results are not shown.

arising from collecting fossils of interest to scientists. The growth of private fossil ownership has led the Society of Vertebrate Paleontologists to condemn many commercial dealers and such public fossil outlets as Amazon.com (Ebeling, 2000). Perhaps one further point for debate available to concerned geoscientists should be the actual validity of the claims offered by commercial dealers—that all grades of fossils increase in value over time.

REFERENCES CITED

Browne, M.W., 1994, Clash on Fossil Sales Shadows a Trade Fair: The New York Times, 15 Feb. 1994, p. C9, http://www.nytimes.com/1994/02/15/science/clash-on-fossil-sales-shadows-a-trade-fair.html?pagewanted=all&src=pm (last accessed 30 May 2013).

Ebeling, A., 2000, Dig It: Forbes, www.forbes.com/forbes/2000/0612/6514418a.html (last accessed 9 July 2012).

McClain, D.L., 1996, Natural History at Unnatural Prices: The New York Times, 15 Sept. 1996, p. F7, http://www.nytimes.com/1996/09/15/business/natural-history-at-unnatural-prices.html (last accessed 30 May 2013).

Rohleder, A., 2001, Collecting Dinosaur Bones: Forbes, http://www.forbes.com/2001/08/01/0801connguide.html (last accessed 9 July 2012).

Manuscript received 5 April 2013; accepted 19 May 2013. ◆

Editor's Note

GSA's Policy Regarding Sale of Fossils and Specimens at GSA Meetings

GSA requires that the sale by exhibitors of fossils and specimens extracted from cave formations be limited to those obtained ethically and legally. Exhibitors who sell such items must certify that they meet the standards of the Paleontological Resources Preservation Act and/or the Federal Cave Resources Protection Act, which state:

Fossils: The sale of any paleontological resource that has been excavated or removed from federal land in violation of any provisions, rule, regulation, law, ordinance, or permit in effect under federal law is prohibited.

Cave Formations: The sale of speleothems, stalactites, and stalagmites taken from caves on any federal land is prohibited by federal law. Many states also prohibit the sale and/or removal of speleothems, stalactites, and stalagmites from caves.

GSA likewise requires certification that specimens from foreign countries offered for sale were likewise obtained in compliance with all relevant local laws and regulations, including those governing the export of specimens for sale abroad.