

DINOSAUR DERIVATIVES

AND OTHER TRADES



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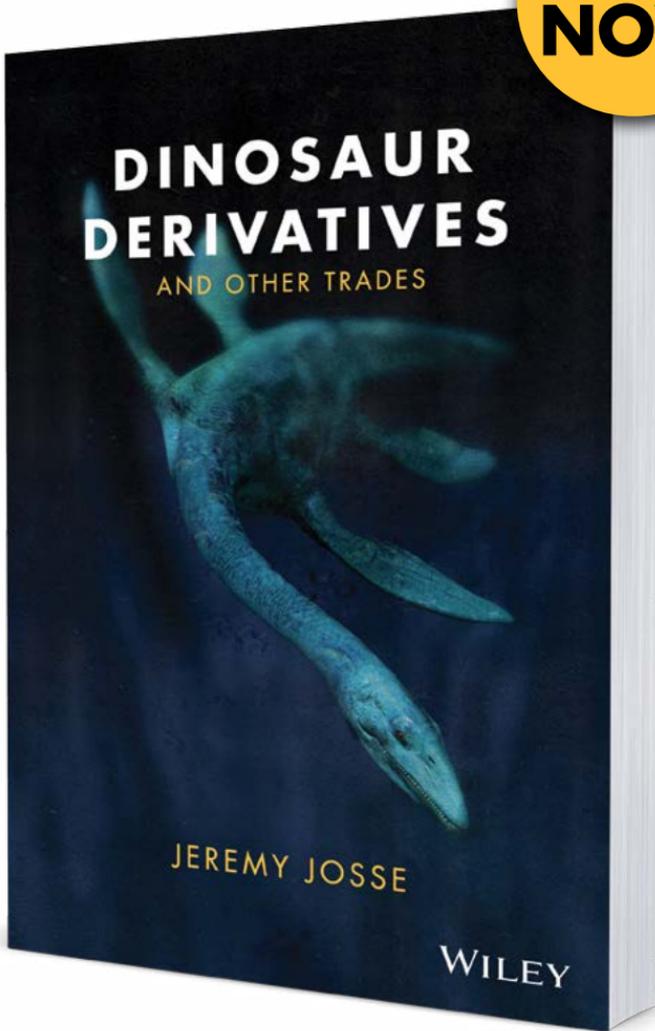
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WHAT IS VALUE?

Dinosaur Derivatives

“A man who knows the price of everything and the value of nothing.”

—Definition of a cynic, by **Oscar Wilde** (1854–1900)

DINOSAUR DERIVATIVES AND OTHER TRADES

I want to begin our travels with a tale told to me some years ago by a close friend. To maintain the anonymity of my friend I shall just call him Karl. Karl's strange story relates to an auction he once attended at a very elite auction house (which shall also remain unnamed) in a relatively unknown street in downtown Manhattan. The auction occurred at a time of great financial uncertainty. And Karl, as it happened, had never previously attended an auction at this establishment.

The auction was held in a beautiful room furnished with a variety of antiques. The ambience was stately grandeur—oak paneling throughout, some fine Colonial-style windows and a preciously carved cornice. Most striking, in Karl's view, was a long painting in a rich gold frame that occupied one wall. It was an oil painting, in mock Renaissance style, showing a scene depicting a herd of dinosaurs. They were of many types—a large group of scaled Stegosaurus drinking water from a small lake; or a lone Diplodocus in the background, its long neck stretched to reach the branches of a prehistoric palm tree. In the distance, at the top of the canvas was a Pterodactyl flying over a group of Triceratops. Most curious of all, to Karl, was one small Raptor in the foreground. It seemed to look obliquely out at the audience with a captivating glare. According to Karl, he thought he even heard the Raptor speak in an antique and bestial tongue, saying, "Here we sell the particularly absurd. Come and buy, my friends!"

The layout of the room was typical of a high-class auction room. A dais in front bore the podium where the auctioneer would stand. Behind the dais, on the back wall, was a large electronic screen that remained dark as participants entered the room. Arrayed in front of the dais were rows of chairs.

Flanking one wall were desks with telephones. Before the bidding commenced, agents positioned themselves at the desks ready to place and receive calls.

Karl was among the first to arrive. As he waited patiently, the room gradually filled. A lady entered who, it soon became apparent, was the auctioneer. She took her place behind the podium and in short order the auction was under way.

Never had such a strange auction been held. In some 10,000 years of bartering and trading, never had there been anything quite like this. Try as he might, Karl could not recall any episode of human commerce, from the first loans in Mesopotamia to the ancient bazaars of Arabia and the Silk Road, when there had been an auction so defying the premises of economic rationality. Who could have imagined that trade would come to this?

For as Karl soon learned, the assets being auctioned—hinted at in the dinosaur painting—were many derivations removed from physical reality.

WHAT IS VALUE?

The first item being sold, just as one example, was no less than an option to buy a Megalodon. (In small print on the auction list, it did state that the option could be exercised only in the event that a Megalodon “should become available.”) For the benefit of the uninitiated, the listing also noted that a Megalodon was a prehistoric shark that had become extinct many millions of years previously.

A number of clauses were added to clarify the terms of the sale of the option. The clauses stated that the option was robust and universally applicable across most world jurisdictions. Wherever this Megalodon might be found, the option would give a legally binding right to the holder to call for the beast.

In fact, however, it mattered very little whether the Megalodon ever materialized. The term on the option was many centuries long and investors had been actively buying, even trading, the option for some period prior to the auction.

The screen at the back of the chamber now showed a huge, clear image of a Megalodon. The shark was unimaginably large. The screen was dominated by the beast with its mouth gaping open to reveal three rows of white, triangular-shaped teeth. The body of the Megalodon was sleek and grey—somewhat resembling a shark, though more bulbous and massive than any now alive. Its streamlined body seemed perfectly suited for rapid aquatic attack. In fact, it was hard to imagine that a beast with such a voracious aspect and vicious jaws could have lost out in the evolutionary game and become extinct.

Inset at the bottom left-hand corner of the screen was a real picture of a set of fossilized Megalodon teeth. To convey the dimensions of the fossilized jawbone, a museum curator was depicted standing inside the gaping maw, clear evidence that the diameter of the animal’s mouth was greater than the height of a human body.

The image on the screen, Karl told me, seemed even to have a three-dimensional quality that no doubt stirred a response in the audience. It was as if the very image of the Megalodon created the strongest incitement to bid. The vivid picture made a profound impression on the audience—and, no doubt, added a compelling impetus to the excitement and marketing appeal of the call option.

Bizarre though it was, the auction of a Megalodon call option came as no great surprise to Karl. The auction house had been promoting it heavily over an extended period of time. Karl was reasonably well-to-do. Hence, he had been specifically targeted by this auction house. He had been told that this offer was only open to an exclusive group of High Net Worth investors.

DINOSAUR DERIVATIVES AND OTHER TRADES

Judging from the sales literature Karl had received and the calls from reps, Karl had amassed sufficient assets to have recently entered into this exclusive club.

As he observed, bidding for the option soon became hot, even aggressive. Bids came in thick and fast from a large pool of speculators. A man in a fedora was quite active. A number of old ladies were perched nervously on the edge of their seats. Another gentleman, standing calmly by a post, seemed to maintain an icy calm. Near the front was a couple bidding in unison, secretly whispering their strategy in each other's ears. There were also hidden bidders, their presence indicated by the ranks manning the desk phones.

In fact, the phone bidders were especially active. Those manning the phones, themselves agents of the auction house, conferred furtively with their distant clients. To conceal the exact nature of their conversations, they spoke behind cupped hands. In repeated outbidding, these phone-based investors often topped offers coming from those in the immediate audience. The "big money" seemed to be with the phone buyers. To Karl it seemed obvious that the participants who would never deign to appear on the scene were the ones driving the market. (In our later conversation, Karl told me of his private suspicion that the phone bidders were themselves colluding. In fact, he pondered the question of whether there were any callers at all on the other side of those phones.)

Unsurprisingly, the option eventually went to one such telephone bidder. Since the name was never revealed, the audience had no way to tell whether it was the auction house itself that had won. In any event, the moment the hammer fell, calm descended. What had been a rising frenzy of speculation was brought to an abrupt halt by the auctioneer.

But the bidding was far from over. Soon other assets were presented before the eager audience. There were many curious ones, including even a letter of credit presentable on the coming (or second coming—which ever turns out to be first) of the Messiah.

As the auction continued at a furious pace, Karl found himself beginning to dissociate. Later on, when he confided in me, he told me how he felt all the trade occurring in that room amounted to an intensely refined essence of pure contractual dystopian risk. Sitting there, surrounded by throngs of bidders chasing after obscure bearer notes, negotiable instruments, and oblique rights of all kinds, he began to experience a spinning, unbalanced sensation. (I could relate to this: it's a feeling I've felt in many a business meeting.)

Equally unsettling was the way more people flowed into the auction chamber like flies attracted to the glowing light of the market. There was a

WHAT IS VALUE?

sense that something important must be occurring here. Many bodies started to fill the back of the chamber where no seating remained. Some of these new entrants began to buy, but it was obvious to Karl that many had simply come to gawk at this grand enterprise. They looked on in astonishment, but there was also envy in their expressions—as if to say, “If only I could play in this high-stakes game!” The air in the room became stifling. As Karl later explained to me, he began to feel physically oppressed. The mood in the auction rose to a fever pitch. It now seemed like a creeping psycho-pathology had gripped the room. In that chamber the market had taken on its own energy. Amid the clamor of bids, it was as if the collective were giving birth to a deranged new child.

Ultimately, Karl himself was overcome. “What nonsense! What a mania!” he finally called out. He stood up bewildered and then collapsed on the floor. After that everything went black.



Well, that’s the story, as Karl recounted it to me. The reader must make his own judgment as to whether the story is true, one of Karl’s dreams, or a plain fabrication. Perhaps some readers might feel that such fevered bidding for putative contracts is quite incredible, or highly exaggerated. But I believe it’s more likely that all of us have, at some time, witnessed similar occasions when people seemed overwhelmed by financial exuberance or folly. Because, whether the bidding is for Megalodons or for anything else, the dynamics of such an auction house are strikingly familiar to anyone who deals in finance for any length of time.

The fact is, it requires just a handful of features to create a market for an asset. And none of these features has anything to do with the asset itself having what we might call “real” or “intrinsic” value. So let’s start by asking how on earth could the market for Megalodon call options ever have begun?

First and foremost, there’s the great machine of salesmanship. The dinosaur option itself is born in the office of some real-life brokers. Call them wacky, creative, or unscrupulous, their method is a traditional one. First they conceive of the option structure, then document it, and finally generate some bids. They do this by taking what auctioneers call “bidding off the wall.” That is, brokers just start marking up prices or trading between themselves—colluding, you might say. As they begin playing with the supply of the asset, they are not really making money, just getting some notional liquidity going. (For established public securities this can often be illegal—but only for established asset classes.)

DINOSAUR DERIVATIVES AND OTHER TRADES

Soon after, the brokers start setting a clearing price for the option, with bid and ask spreads. With this tentative beginning, a market in the asset is thus ceded. There is now potential for the option value to go up and down.

Funnily enough, something like this really does happen even with the most legitimate and mainstream of Initial Public Offerings (IPOs). The investment bank that leads the offering is typically given what is known as a “greenshoe right” which allows that bank (legally) to “manipulate” the market in the new stock. In summary, on closing an IPO, the underwriter sells more stock than is actually being offered. This creates a technical “short” in the market. If demand for the new stock in the aftermarket turns out to be low, the underwriter fills the short by buying stock from existing stockholders, thus (artificially) creating at least some base secondary market demand. If, on the other hand, purchase orders in the immediate aftermarket are high, the underwriter “exercises his greenshoe.” This allows him to call for more stock from the issuer to fill the demand, hence putting the brakes on an excess rise in the stock price.

This type of “stabilization” (as it is known in the securities business) is in fact considered by the SEC an important function of investment banks—at least for a limited period after an IPO. It is meant to avoid excessive volatility in the newly-issued stock. So, under SEC regulations, there is nothing “wrong” with it, per se. Still, it is a very telling example of how brokers themselves can affect the value of an asset merely by playing with the notional demand and supply of the stock.

So—now a base market for the Megalodon asset has been created, and with that we are off to the races. For then the vast network of intermediation begins to operate. Prospective buyers are encouraged to participate by armies of salespeople present in many advanced capitalist economies. The asset becomes increasingly known. At first, it is offered only to exclusive groups. And I mean *really* exclusive groups—groups that Karl could not even dream of joining. But in time it gets offered to a clientele that, though still exclusive, is drawn from slightly less rarified circles. At this level, Karl might be invited in. Said clients are now gratified—flattered even—to be allowed into what they see as an exclusive cadre of investors. Eagerly they invest. In time the brokers could step away from the market—although, of course, they never do as they wish always to keep oiling the gears and pouring in the fuel, keeping the engine burning. In time, investors become accustomed to buying and selling at certain established price levels. The asset has “obtained value.”

The U.S. legal system fully recognizes these types of investor stratifications. Under current SEC and FINRA rules, certain securities can only be

WHAT IS VALUE?

sold to “accredited investors,” defined as those having annual incomes of \$200,000 or to those whose net worth exceeds one million dollars. Still more exclusive offerings can only be sold to Qualified Institutional Buyers (institutions managing at least \$100 million in assets). Now, these rules might seem arbitrary, but do nevertheless have some rationale. By imposing these stratifications, the laws are meant to protect the “non-qualified” from being sold overly risky securities. The rules don’t always work. But when (if) they do, they are important mechanisms for protecting those with limited means, from buying assets exactly like dinosaur derivatives. “Non-sophisticated” investors really shouldn’t be buying assets whose value is, we might say, highly elusive or heavily driven by speculative demand. But the cautionary intention of the rules comes with a backlash directed by the all-too-human emotions of envy and desire. If you do make it into one of these specialized investor buckets—well, what a privilege! All the more enticing is the prospect of playing in a game restricted to an elite.

So our asset has by now attained some perceived value in the market. But then a second, powerful financial force comes into play. It’s called “liquidity,” which is the notion that someone else will always buy or accept the option for value at a later stage. In fact it is recognized by financial commentators that investors often buy an asset only because they are confident someone else might buy it (hopefully, at a higher price) in the near future. The immense herd of brokers and salespeople have now upped their game still further: they are industrializing the exchangeability of the Megalodon option. And this in turn brings us to another notion—the “greater fool theory.” Namely, that in any chain of transactions when an asset value is rising there is always (usually) a “greater fool” who will bid even higher. Of course, this can never be an endless chain. Eventually some buyer gets caught out buying the asset at the end of the chain before the price falls.

It’s a sequence eloquently described by Charles Kindleberger and Robert Aliber in their seminal study of financial crises, *Manias, Panics and Crashes*. Among other crises, the book analyzes the phenomenal surge in the price of gold that occurred in the 1970s. “At some stage,” they concluded, “in the late 1970s, investors were extrapolating from the increase in the market price of gold from Monday to Tuesday to project the market price on Friday; they purchased gold on Wednesday in anticipation that they could sell at a higher price on Friday. The ‘greater fool theory’ was at work, some of these buyers may have realized that the increase in price was a bubble and anticipated that they would be able to sell at a profit before the bubble imploded.”¹

DINOSAUR DERIVATIVES AND OTHER TRADES

Actually, liquidity also goes to the concept of managing the “uncertain” future. In the next chapter, we’ll take a look at this concept—the Genesis story of how Joseph made a killing in a market where God apparently removed the element of uncertainty entirely. But for most of us in finance, uncertainty is a constant, and hence “risk” is always an element in decision making. Liquidity does not remove the element of risk—far from it. But it signals something to an investor. Liquidity says to the investor, “Even if this investment does not turn out how I thought it would—that is, no Megalodon actually appears—well, I can still exit the asset.”

There is an element of trust embedded in liquidity: “I will pay value for this asset now because I trust another will take it from me, for value, in the future.” And indeed this is not fundamentally different from the trust we hold in a dollar bill. After all when we are given a dollar for our work or our goods, we blithely trust that we will be able to exchange that dollar—that is exchange it in the not-too-distant future, for the goods or services provided by others.

Interestingly, also, mainstream financial theory recognizes pure “liquidity” as something that has value in and of itself. There are many analyses showing the increased value of a stock that is listed with an *active market* versus a private, “illiquid” stock (not offered on any market). The former is commonly identified as having a “liquidity premium.” In fact, just adding liquidity can increase a stock’s value by as much as 20 or 30% over a private (illiquid) stock that is identical in every other way.² These liquidity premia are regularly used in professional valuation work by investment banks, accountants, and the like. In other words, investors and traders recognize that there is additional value in something purely because it is exchangeable, and they are willing to pay a premium . . . even at risk of ending up greater fools for doing so.

But now we come to the next factor. We have arrived at the curves in the road where “greed” and “fear” create rapid acceleration and deceleration. With the establishment of the ability for any asset to go up and down in value, the potential arises to make money buying cheap and selling dear (arbitrage). When these factors come into play, there’s a new compelling logic behind investing in Megalodon options. How appealing these are to anyone who wishes to speculate! Fear is the quintessential human emotion that arises from financial uncertainty. Greed—well, I think we’re familiar with its appetites. In any event, note for now how often greed and fear do generate precisely the type of mania seen among the Megalodon bidders in our story.

And then there is a final piece in the puzzle—that is “habit” or “conditioning.” As more people trade in the option, the reality of its value

WHAT IS VALUE?

seems to be confirmed daily by the ongoing patterns of behavior of the crowd. Like a religion or a credo, the more often certain ideological concepts are repeated, the more we become conditioned to accept what appears to be an independent truth. Now, instead of “high priests,” think “brokers.” As brokers repeat their buy/sell mantra to eager investors, they continually promulgate and perpetuate the dinosaur dictum. Repetition of this credo can take the market value of assets to levels that are way, way beyond anything that can be connected with the underlying economic utility of the asset. Sound familiar? Yes, we call these run-ups of the market based on fervid beliefs “asset bubbles” and “market mania.” What occurs is a sort of financial religious ecstasy as each new zealot experiences his or her own epiphany.

The 18th-century British philosopher, Hume, spoke a great deal about habit. In Hume’s view, much of what we believe is really just a consequence of habitual associations.³ He noted, for example, that when we say “x event caused y effect,” there may be no actual connection between “event x” and “event y.” Much as we may feel the need to find the *mysterious nexus* that links x to y, it’s really nothing more than our habitual experience of y following x. If the sequence happens repeatedly, we reach for the conclusion that y is *caused* by x. So too, it seems, does the finding of value become a habit. There may be no such thing as real value in our Megalodon options. But what happens when we repeatedly witness one person after another buying the option, then selling it to someone else? The pattern is first established, then repeated, and finally becomes habitual. And so, an established trading practice in the options (a habit) eventually manifests itself in the collective human psyche (the market) as a sense of “value.”

So now: everything is in place to lend credence to the Megalodon option story.

Pure fiction?

Well, here I would suggest the reader think of one of the most highly valued commodities on earth. Diamonds. No huge shark ancestor with bared teeth, for sure. An asset that glitters rather than threatens. And one that, unlike a Megalodon, can actually be worn on the finger or be fashionably displayed at social gatherings.

It might seem heresy to suggest that a diamond has very questionable fundamental value. However I wouldn’t be the first to say so. For in many respects it shares some characteristics with our grey-skinned predator. Its supply is controlled by the De Beers’ cartel. The asset is actively marketed as an exclusive product (by multiple high-end retailers). The market in diamonds is highly liquid, involving thousands of brokers. And the asset

DINOSAUR DERIVATIVES AND OTHER TRADES

is so embedded in the human social consciousness that the acquisition of diamonds—or the longing to acquire them—has become a permanent habit.



I mentioned in passing how Karl's experience occurred during a time of economic recession. In an even more confusing way, an unstable economic environment might actually drive up interest in our nutty Megalodon option. It can do that precisely because the underlying asset may be thought to have some unique value quite detached from economic productivity. This is not dissimilar to the tendency of the market to buy otherwise worthless hunks of gold in inflationary and risk-averse times. In fact, it is not ludicrous to say—based on the working of the gold market—that the greater the fear in the failure of the real economy, the more people are likely to seek out such curious assets. Hope springs eternal, and such assets offer the promise of a future that's more bountiful and—one dreams—more certain and secure than current circumstances.

Strange and distant indicators also influence the value of certain assets. The slightest rumor of a bid for a stock for instance—or the possibility of future changes (say, in central bank policy)—can quite dramatically shift the trajectory of certain assets. And in the case of our crazy option over a Megalodon, there is also a clear parallel to public bid frenzy. While the prospect of discovering an actual Megalodon may seem far-fetched, consider how long hope is sustained in the public imagination, especially if the press feeds the frenzy of speculative rumor. Many generations have sustained the belief that there might be—yes, just *might* be—UFOs hovering around selected sites in the American West, or a Loch Ness creature wriggling in the depths of its Scottish home, or Yetis leaving footprints in the Himalayas. And one rumored sighting of a Yeti or a UFO only fuels the (imagined) possibilities of these other alternatives—like finding a live Megalodon. After all, in 1938, a coelacanth (a prehistoric fish believed to have been extinct since the end of the Cretaceous period) was found alive and well in the Chalumna River in the Eastern Cape of South Africa. Who's to say that a Megalodon, larger but perhaps more elusive, might also be found in the great darkness of the Mariana Trench in the deepest part of the world's oceans? Anything is possible. (Actually, anything *is* possible).

So, are we saying that certain features of human behavior and psychology allow real markets to coalesce and attach value to *any* asset . . . whatsoever? Well, maybe, though that view is certainly open to at least

WHAT IS VALUE?

one critical objection. The above is all well and good, but this market will only sustain itself if there is real “intrinsic” value in the option to buy a Megalodon. It looks like I’m merely differentiating between what economists call “market value” and “intrinsic value.” It would seem obvious that, if the Megalodon is extinct, an option on the beast could never have intrinsic value. Sooner or later, therefore, the market will give up on the asset.

I think actually I am saying more than that, but let’s just dig a little deeper into what we really mean by these different notions of value. “Intrinsic value” is typically understood in the financial world as the underlying economic/productive benefit of an asset. More precisely: an asset’s intrinsic value is based on and quantified by the future cash flows generated by that asset.

One way of looking at this is to say that if you’re dealing with an asset that has intrinsic value, its real worth should be quantifiable within reasonable bands. Put together two assets that each have an intrinsic value of “two” and you end up with a total value of “four.” If you find that people are paying five, six, or seven for assets that only add up to four, you’re in the midst of a speculative bubble. Or, as one economist put it, “The additional rise above the true capital will only be imaginary.”⁴

All commentators on the gap between what I am calling “market value” versus “intrinsic value” are effectively commenting on the whole issue of the “rationality” of markets. The so-called “efficient market theorists” want to say that market value will sooner or later reflect intrinsic value. The gap between the two will simply be arbitrated away. And it is true that economists periodically show how market values can give a much better marker of intrinsic value than individual views. The “wisdom of the crowd,” it is sometimes called.

But the efficient market theorists have come under increasing pressure in recent years. The disjunction between market value and intrinsic value is seen by many in regular bouts of “irrational exuberance,” which are often used as proof that the efficient market hypothesis is simply wrong. Take the dotcom bubble of the later 1990s and early 2000s. As Frank Partnoy has pointed out in his book, *Infectious Greed*, at that time there was an ever-upward rise of internet stocks increasingly dislocated from the likely future performance of the underlying companies represented by those stocks. As Partnoy puts it, “People overestimated their own skills, overvalued items they owned, were shortsighted, greedy and occasionally even altruistic.”⁵ And hence certainly some economists, like Andrei Shleifer, have plainly rejected the rational market hypothesis; their ideas now being embodied in the school of “behavioral finance.”⁶

DINOSAUR DERIVATIVES AND OTHER TRADES

Perhaps also there's something of a conceptual flaw with the notion of "intrinsic value." Assessing intrinsic value inevitably requires predictions of future cash flows as well as discount rates. In other words, if you want to know anything's intrinsic value, you still have to speculate on the future. If you're doing that, you are immediately trying to see through the mist of uncertainty. How, you wonder, will my asset *actually* perform in the future? And to get any kind of grip on this, you generally have to turn back to the market price. It is, after all, the market price itself that is the quintessential mechanism in the financial world, for assessing future risks.

Something very much like this happened with the mania for Collateralized Debt Obligations (CDOs) in the 2007/8 credit crisis. These securities represented multiple strings of underlying cash flows from huge and complex baskets of other assets. The underlying cash flows were, in many cases, so complex that no human could calculate or conceive what they were. Hence, the price at which a broker offered you a CDO was the only meaningful benchmark for valuing those securities.

In fact, there are many other assets that really do function in ways that resemble our Megalodon options. Consider the world of currency trading. There, many traders are fundamentally speculating on price movements via "contracts for differences" that have no intrinsic value whatsoever.

A contract for difference ("CfD") allows an investor to make a pure bet on the direction of a financial index. For example, I could buy a CfD to bet on movements in the \$/£ rate (the exchanged rate between the British pound and U.S. dollar) without buying either dollars or pounds. The CfD simply allows me either to buy the index ("go long") at a certain level (say \$1.70 to £1) or sell the index ("go short") at that level. If I am long and the index goes up, I can then subsequently sell the index to take my profits. If, however, I have bought and the index falls I will be selling at a loss.

The similarity with the dinosaur derivative is pretty clear. The real problem we all have with the dinosaur option is there is no meaningful underlying asset over which the option is taken. But of course this is equally true of the CfD. In the CfD, where the underlying assets are dollars and pounds, neither of those currencies is actually purchased. Money is made purely by virtue of movements in the currency index.

Well, perhaps—though at least, with the CfDs, there is *some* underlying asset that is driving the movement in the currency index. Even if you do not actually buy any dollars or pounds themselves when you buy a CfD, nevertheless you are looking at movements in the underlying value of those currencies to drive the movement of the index on which you are betting. With our dinosaur derivatives there is no movement in the value of dinosaurs at all.

WHAT IS VALUE?

A fair point, but we should remember that currencies themselves have no real value other than as a means of exchange (again, it's the element of trust that allows people to exchange currencies for value). So we can legitimately ask: "Does the \$/£ CfD have any solid intrinsic value?"

To make this point even clearer, consider a CfD over a gold index. With that kind of CfD, I am betting solely on the movement of the gold index. Unlike dollar bills or pound notes that I can actually see and touch from time to time, I never actually hold any gold at all. The unseen chunks of gold stored away in underground vaults have no utilitarian benefit, and I am not even buying them, either. I'm only buying a contract whose value is linked to the movement in the value of said blocks of gold. So, a CfD over a gold index? Well, now we have found our real-life dinosaur derivative.

Off the back of the CfD example, we begin to take our analysis to its logical conclusion. It seems we are not really talking about the gap between "market value" and "intrinsic value" after all. Apparently, not only can value be dislocated from intrinsic value, but in fact highly sought-after assets (with significant market value) do not need to have any real economic value whatsoever.

In other words, *of course* powerful behavioral and psychological forces have a material effect on price movements.⁷ In fact, let's not even go deeply into the "efficient market hypothesis," for only academic economists could debate for years what is patently obvious to anyone who has spent even one year trading in financial markets. (Among those whom I would classify as "academic economists," I include Alan Greenspan—he apparently only understood the potential irrationality in markets at the ripe old age of 87.⁸)

So, if assets like the Megalodon option can have value without any link to fundamental economic benefit, what shall we call this strange, floating type of value—value that seems to come unhinged from anything real and tangible? Well let's look again at the case of gold and of the ongoing value we maintain in currencies (in spite of gold and currencies being in themselves worthless pieces of metal and paper/computer blips). In *The Power of Gold*, Peter Bernstein makes the observation that "all the countries in the world now function with monetary systems convertible into nothing except from one nation's money into another nation's money." Bernstein further speculates that, today, the U.S. dollar is "the glue that holds the system together, as gold did in the past."⁹

At given times, certain assets do act as barometers of definitive value. These assets—such as gold (in the past) or reserve currencies (today)—have value that is quite separate from their intrinsic value. They act as benchmarks. Before Einstein, physicists believed an "ether" existed all around us

DINOSAUR DERIVATIVES AND OTHER TRADES

that provided an absolute framework for space against which each item was positioned. These basic assets are like the ether of 19th-century physics. Because we humans have come to trust these assets, they act as definitive signposts of value. Supported by that broad-based kind of trust, currencies can be continually exchanged for value with other buyers. They are also vulnerable markers. They may resemble solid benchmarks, but in fact they are far from it. These benchmarks can plummet or soar in value as human trust waxes and wanes.

So it is with many assets that become, in some fashion, barometers of value. Indeed any asset or piece of paper can become such a barometer. Once trust in exchangeability in an asset is established, intrinsic value just seems to take second place.

I should add that I am not questioning the validity or morality of speculative markets. As in the currency markets, speculation very often provides important liquidity to our system, and this liquidity is critical in providing capital for real economic benefits. But we must see these markets for what they are and remember also that they can therefore be abused. They need to be monitored. As the 18th-century conservative philosopher Edmund Burke said, "It is the nature of all greatness not to be exact; and great trade will always be attended with considerable abuses."¹⁰

So what are we left with? Well, we might call it "value in itself." It is the value that can exist in an asset just because it *was*, and *is*, exchangeable for *something else* of value. We are left, in other words, with a compelling sense of the philosophical vicious circle. The awareness of this circle may not mean much to a theoretical economist, but it haunts every market trader. As for the average consumer, we confront it daily in our personal choices. When we go to buy some item and wonder whether it is actually worth what the retailer claims it's worth, we are stepping into the world of Megalodon trading. Someone wanted it, so it was valuable, and they wanted it because it was . . . wanted. This is perhaps not a very reassuring way to think about what we own, or buy, or invest in. But like it or not, we have to live with the uncertainty of not knowing what anything is ultimately worth anyway.

I'm sure this is no revelation. We all understand that value is deeply subjective. To say something has value actually means no more than that it is "desired" or "needed" by someone. One assembly of humans may desire gold; another may see beauty in mud. Most psychological studies show that—once people have the basic necessities of food, shelter and their health—happiness does not really increase with more wealth. And in the end it's easy to understand why. Wealth depends on the accumulation of

WHAT IS VALUE?

things whose value is subjective and never certain. Value so often performs a cruel vanishing act: melting down or disappearing like some ludicrous financial mirage.



Nonetheless, perhaps our story itself gives us a final handle on the concept of value. Part of the problem with the mania in the auction room was that the bidders had become obsessed with chasing value for its own sake. Karl observed a relatively well-heeled clique of buyers who were, themselves, being herded this way and that by the big-money bids that were phoned in. No one in that insulated auction room really needed to buy Megalodon derivatives, e.g. for food or shelter. Those dinosaur derivatives could only obtain value because—as evidenced by the active trading in that room—there was liquidity and arbitrage opportunity in the asset. Ultimately the main motive for buying the Megalodon options was purely to make more money.

Now, I certainly think it is important for people to make money. And we need the means to make money (i.e., businesses). I also believe there is value in a lot of things well beyond shelter and sustenance. Much can be said for the many objects and experiences that feed or satisfy our aesthetic needs. Money can help us acquire or invest in things that bring unique fulfillments. But where value, as a concept, seems to become unhinged is when we invest value in something solely and exclusively because it is a route to making money. When an asset's only value is to generate more value, we begin to believe in Megalodon derivatives. That's when we're in trouble. And we all know this, for it's a truth as old as the world.

When something is valued solely because it begets value, then we have created assets infused with the disease of Midas—assets that one day can be sold for a huge price, and the next day, plummet to zero in a market panic. When that happens, we see human mania and we see the venality of the bidders in the auction room. We see how our society can actually give birth to assets that live in a sort of economic vacuum, devoid of human connection. We have, in other words, created dinosaur derivatives.

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