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Two, Four, Six, Eight: Everybody Speculate!

Speculation, Stuart Banner's legal history of modern finance, provides deep insights that professionals would do well to explore.

Stuart Banner is a law professor at UCLA who writes books to explain to both lawyers and nonlawyers how we got where we are, in areas from baseball to executions. In 1998, he turned his attention to the early modern history of securities laws, with *Anglo-American Securities Regulation: Cultural and Political Roots, 1690–1860* (Cambridge University Press). He has returned to the field with *Speculation: A History of the Fine Line between Gambling and Investing* (Oxford University Press, 2017), which covers mainly American thought from the colonial period to the present.

A naïve model of innovation is where people start doing something new, and develop it, unfettered by regulation or laws, until it gets big enough to attract notice. At that point, regulators, judges, and interested parties thrash out a framework to integrate the new idea into the social order. There are two opposing incorrect assumptions in that model.

In the first place, very little happens outside the notice of the judicial system. However new an activity is, it will figure in lawsuits. It might figure directly—such as a contract dispute among participants in the new activity—or indirectly, in other lawsuits. Judges do not postpone decisions until the new activity is understood; they fit it into existing categories of law. How this is done is strongly affected by popular attitudes. The decisions set off chains of legal reasoning, which often lead to conclusions that are incompatible with the activity (and often unintelligible to anyone but lawyers who have fol-



lowed the chain). At this point, the public argument begins and some kind of solution is thrashed out. But the point is that the form of that solution will be strongly influenced by historical attitudes and legal principles designed for entirely different activities. The resolution may make little sense from the perspective of the new activity, but it will usually be compatible with it because participants will continue fighting until that happens.

In the second place, the naïve model assumes that the official resolution forms the organizational basis of the activity going forward. In fact, participants will generally design their own frameworks better adapted to the activity. Only a tiny fraction of disputes reach the legal system; most will be resolved less formally. Regulations may say one thing, but regulators will find some acceptable compromise interpretations that keep participants reasonably happy without generating complaints that could come to the attention of legislators. Nevertheless, the formal legal and regulatory rules exert a strong influence on how things really work.

For these reasons, it's impossible to understand modern financial organization through modern financial theory. The financial innovations that underwrote the Industrial Revolution and subsequent economic development posed thorny problems for the 18th century English law inherited by the United States. Professor Banner has isolated a major, perhaps the key, issue: distinguishing gambling from investing. He draws on legal decisions, of

course, but also on a variety of other sources, including fiction, legislation, speeches, and events.

Gambling and investing are both ancient pursuits and are discussed in the oldest legal codes. Although both involve risking current value for uncertain future gain, there was no difficulty in distinguishing between citizens betting on dice throws and a merchant exporting his wares on a ship subject to storms, piracy, and other risks. In the former case, risk is deliberately created for entertainment, and there is little economic content to the zero-sum activity. In the latter case, risk

is inherent to the non-zero-sum real economic activity, and is accepted, probably reluctantly, as a cost of doing business. While there were some arguable cases, such as bottomry loans and agricultural forwards, they didn't pose great problems because gambling was generally either legal or tolerated, and the activities were confined to a small group of sophisticated merchants.

Nevertheless, the distinction was noted. Proverbs 13:11 teaches that: "*Wealth by breath shall be diminished: but he that gathers by labor shall increase.*" The precise meaning is disputed today; wealth by breath may mean fraud, usury, trading, gambling, or some of all of those things. What is clear is that any path to wealth that does not involve labor is at least suspect. As there's no record of Solomon (the likely author of this proverb) doing physical work, and his wealth was, "*such as none of the kings have had that have been before thee, neither shall there any after thee have the like,*" presumably being King counted as labor rather than breath. Telling, "*threescore and ten thousand men to bear burdens, and fourscore thousand to hew in the mountain, and three thousand and six hundred to oversee them*"—that is organizing economic activity and contributing assets; investing—also must have qualified.

Speculation does not go that far back. It begins in the late 18th century, when, "*courts were reluctant to enforce commercial contracts that seemed too risky, but they nevertheless enforced bets on horse races.*" It

quotes contemporary reactions to financial crisis: “The crisis was caused by overspeculation; the victims included small investors lured by unscrupulous speculators with promises of high returns; and the federal government should have intervened before prices rose too high.” The quotes are, “from Alexander Hamilton, Thomas Jefferson, and a correspondent to John Adams, respectively,” discussing the credit panic of 1792, but Professor Banner notes that they could have been written at any time since, including today, about any financial crisis.

Despite those similarities, both financial regulation and understanding of financial markets have changed enormously since the 18th century. But it was not a steady march of progress. Instead, periodic financial crises stimulated bursts of legal change. These changes were generally relaxed in the interregnums.

The early cases discussed in the book revolve mostly around land speculation. This is a tangible business, with a clear distinction between investors who make improvements on land in order to get use or income out of it, and speculators who merely hold the land, hoping that its price will increase. There are some intermediate cases, such as an investor who plans to use the land in the future, or a speculator who subdivides land and makes some minimal improvements in order to sell it, but, generally, you can tell the difference between investing and gambling. It makes an economic difference as well.

Insurance contracts presented another rich area for dispute. Here, the courts adapted the English concept of an ‘insurable interest’. An insurance buyer could bet against himself – that is, bet on an occurrence that would cause him loss up to the extent of that loss, but he could not benefit on events that did not affect him or that helped him. This is also a tangible distinction that is clear in most cases.

Things are trickier with trading in financial instruments, primarily government bonds at this time, but also personal notes, currency, and other securities. Buying at issue, collecting cash flows as income, and holding to maturity is clearly investing. Shorter-term buying and selling could be gambling but it could also be done for personal financial reasons, such as saving up to buy a house, or for hedging some exogenous risk. Even very frequent buying and selling could be dealing, just as a retail merchant buys items to sell at a higher price. Contracts for

future delivery, especially contracts to sell something the seller does not own at the time of signing, and even more especially contracts that called for cash settlement of price differences rather than delivery of any securities, could be made for valid portfolio reasons, but seemed suspiciously complex and unrelated to real investment.

The final major area of early legal dispute was investment management. Risks that might be legal for shrewd professional men to take were considered inappropriate for trustees investing on behalf of others. The ‘prudent man rule’ that courts adopted makes little sense in modern theoretical terms. It considered investments individually, not their effect on portfolio risk, and it failed to consider either expected returns or the risk tolerances of beneficial owners. Nevertheless, it held sway for a century and a half, and continues to affect attitudes today.

The same legal issues arose later in the 19th century, with agricultural futures contracts and corporate equities. Market manipulation became a major concern. Another change was that broader public involvement in speculation gave rise to consumer protection concerns. In the 20th century, the banking system became an important source of financial disputes and corporate equities rose in prominence. Attitudes toward corporate directors and officers underwent a sea change, which caused a complete change in insider trading regulation. Starting in the 1970s, financial futures and other derivatives posed new issues.

From a modern perspective, the historical debate mashed together unrelated issues. There is the moral distinction between, say, a farmer creating value by growing crops, and a commodity speculator who creates nothing, and whose profits come from fooling other people. There is a similar ethical point, that real activity creates harmonious social relations while speculators focus only on money, making them unhappy and harming society, even if they make it more efficient economically. In the former case, speculators may be happy, but they are evil. In the second, speculators are foolishly neglecting important things for trivialities. Logically, the moralists should point to speculators lolling in luxury and the ethicists should point to bankruptcies and suicides, but most thinkers were happy to use both pieces of evidence.

On the economic side, which was not always

clearly distinguished from morality, there are also two opposing views. In the first, speculators rig prices in order to cheat the people who work. In the second, speculators cause bubbles and crashes to their own ruin, but also disrupt the real economy. However, economists had to think a little deeper. Moralists could just urge that creating value and working with people, there is no moral or ethical need for anyone to gamble. But economies do need investors, and investors must take risks, and it’s not easy to tell investors from speculators. Other forms of risk-taking, like insurance and investment management, are not as necessary as investment, but they are handy.

There is another conflation in the debate: the definition of risk. In modern terms, we tend to think of uncertainty, perhaps measured by volatility. In this view, leverage can amplify risk but it is not a risk in itself. In many of the quotations in this book, however, leverage is what defines speculation – not volatility, not intentions. It offends people that speculators have little or no capital, not that their bets have high risk, nor that they hope for money gains rather than value creation.

An even older belief is that the problem with gambling (and with investing, for that matter) is that it disrupts social relations. Aristocrats can lose their estates; clever commoners can become rich. This is discussed more thoroughly in the author’s earlier book, *Anglo-American Securities Regulation: Cultural and Political Roots, 1690–1860* (Cambridge University Press, 1998) as well as in Reuven and Gabrielle Brenner’s *Gambling and Speculation: A Theory, a History, and a Future of some Human Decisions* (Cambridge University Press, 1990). Although, today, we regard social mobility as good, we retain holdovers from the earlier attitude, such as income and wealth minimums, to allow people to invest in hedge funds and ‘suitability’ rules that enforce dated social stereotypes. Today, we justify these things with paternalistic rationales but Professor Banner has citations that suggest that the older purpose was to protect society against up-and-comers rather than to protect poor people against themselves (or against fast-talking promoters).

One value of this book is to see the many flavors of opinion about these issues (and I’ve only scratched the surface above). But these things did

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not work themselves into law and regulation in logical ways, at least to a nonlawyer. If you believe, for example, that the government should force people to pay less attention to money, you can tax income, but not nonmonetary ways of getting satisfaction. The woman who builds a house and lives in it pays no tax on the imputed income, but the woman who rents the house out does pay income tax on the rent received. A man who works to earn money to buy a ticket to see a professional baseball game cuts the government in on the action, but if the same guy joins a softball league after work, no tax is due. If you think speculators withhold assets from real activity, you can tax property according to its highest and best use, encouraging development. If you worry that speculators are overleveraged, you can impose capital requirements; if you want to protect naïve people from fast-talking salespeople, you pass consumer protection statutes. In fact, we do all of these things in various forms, and others as well. But they don't form the framework for financial law.

One important point that the book makes that is not sufficiently considered is that judges make decisions after the outcome is known. No one sues a trustee for imprudent investing if the investment went up. During the bubble, speculators are busy speculating; the lawsuits come after it pops. A better-known point is that judges have to make decisions, which means bottom-up considerations can matter more than top-down. There might be reasons in legal or economic theory for a rule, but if it doesn't help to decide cases in not-unreasonable ways, it won't take hold. Also, useful rules for resolving disputes predictably can bubble up into principles that make little top-down sense.

Legislators are in a different position. Unlike judges, they don't have to do anything. Some of them indulge their top-down beliefs, but the ones who want to be re-elected (which was not a direct issue for senators during much of the period of study, which turns out to be important) are looking for problems to solve. They tend to avoid the close-call cases, the kind that get to high-level courts and change legal thinking, because there's little net political profit in them. They prefer the easy cases, where they can give a lot of people what they want, without too much imposition on too many other people.

And while judges issue opinions directly, legislators work through regulators, who have still different

incentives. I'm a University of Chicago guy, so I see regulatory capture as the norm. Regulators tend to find acceptable compromises that protect profits for regulated entities without creating problems that cause complaints that could rise to the attention of legislators (the losers are generally innovators in the regulated activity and customers who aren't affected enough, or who aren't politically potent enough, to bother their representatives).

The way this works in practice is that losers are the dominant political force after a bad event, but winners gain influence by spreading their wealth in good times. Due to legislative and regulatory lags, rules to prevent the last crisis usually come into effect when the next bubble is well inflated and no one has much enthusiasm for restraint.

Of course, these same factors come into play in all areas of legislation, regulation, and law. But in speculation, things are even more complex because diverse logical and economic issues are conflated in a single distinction: gambling versus investing.

Professor Banner's book will appeal more to financial professionals than most works on the subject because he clearly understands the difference between ex post and ex ante, and that the efficient market hypothesis (market prices are hard to predict and end up in the right place) is not the divine market hypothesis (market prices are wise and good). However, I would go further than him – and likely further than any historian or law professor – on a few issues.

I think he is correct when he concludes that a major reason that farmers have always distrusted futures markets is that they are the visible aspect of global markets. But he doesn't explain why that matters. When agricultural markets are local, a poor crop for a farmer usually means higher unit prices, and a good crop usually means lower unit prices, insulating the farmer from a lot of price volatility (in fact, it's often true that farmers make more money with low yields than high yields). Moreover, there are usually a wide range of roughly equally profitable activities for a farmer, so farms can be largely self-sufficient with vegetable patches, orchards, a few chickens and cows, and a lot of home processing, in addition to the main cash crop, plus some informal barter with neighbors. This further insulates farmers from market prices.

In a global market, the farmer's yield will have

only small correlation to global prices. The profits from the main cash crop increase relative to the profits from other activities whose prices are pushed down from global competition, encouraging farmers to concentrate on their comparative advantage. This is more economically efficient, total production is increased with smaller inputs of capital and labor, but it exposes the farmer to far more economic uncertainty.

The farmer can hedge some of this uncertainty, but not with futures. For one thing, most farmers don't have the free cash to use for margin payments and, in the 19th century, they probably lacked the ability to communicate efficiently for daily margin payments. For another, their crop likely will not meet the delivery specifications for the contracts, so they have a lot of basis risk. Most important, they don't know the size of their crop. It makes a lot more sense to lock in a price early with a local crop buyer, who will take their precise crop, in whatever quantity occurs, either collected at the farm or delivered to a convenient local facility. But even this hedges only a portion of the short-term risk. The farmer is still at risk for the size of his crop, his expenses, and, most important for leveraged farmers, the value of his land.

In principle, a farmer could benefit from the global market. If there's a bigger economic pie, she could get a bigger slice. However, it puts more middlemen between the wheat in her field and the bread in the end-consumer's mouth. That includes physical processing middlemen like shippers, silo owners, cleaners, millers, bakers, and retailers – but also financial middlemen like bankers and futures speculators. The processors may have some pricing power to extract profit at the expense of a farmer – a farmer must deal with one railroad, for example – but the railroad can negotiate with lots of farmers to fill its cars. Moreover, the processors are likely to have more lawyers and political friends in the city than the farmer can claim (on the other hand, farmers are likely to represent more people, which matters as well, and which is why they win a lot of political fights, especially in the Senate).

Farmers may believe that railroads and other middlemen charge too much, but they accept that the services are worth something. Bankers and speculators, on the other hand, offer no tangible service, so their profits appear to be a pure sub-

traction from the farmers' pockets. Economists disagree (most anyway), pointing out that you need a payment system. You could have everyone pay for everything in gold upon delivery, but that requires a supply of gold equal to the maximum value of goods in the process of production at any time (plus some cushions for uncertainty) and a lot of infrastructure to store, protect, and transfer gold. You could also have a pure credit system, where everyone waited for payment until an end-consumer bought the bread, but that has the problem of allocating gains and losses if the bread sells for more or less than expected. It also creates huge credit risk and requires everyone to hold enough capital to run their businesses until payment arrives.

A banking system functions like the credit system, but the bank holds a common store of capital for everyone, which is more efficient as most of the risk nets to zero. You can also think of it as functioning like the gold system, but with deposits and notes substituting for the physical gold.

Banking can work well when there is plenty of liquid capital and there are many established business participants. But it failed in the area drained by the Mississippi River in the mid-19th century. There was little liquid capital, and inadequate banking. Physical development and technology were changing rapidly, and immigrants from many cultures were streaming in. This gave rise to the futures markets, which were based on ancient river-network trading principles rather than banks developed for ocean and overland transportation.

The canonical futures transaction is not hedging, not a miller going long a wheat futures contract to lock in a price of wheat. If the miller wanted to do that, she would go to a silo that could deliver the precise type and grade of wheat that the miller wanted, at a place and time convenient for delivery. Anyway, her exposure to wheat is ambiguous. If price goes up due to increased demand, her services are more valuable; if price goes up owing to decreased supply, her services are less valuable.

Rather, the canonical transaction is a miller buying wheat at a silo and going *short* a wheat futures contract. She gets wheat today, and agrees to deliver wheat in the future. She borrows wheat. Of course, she'll roll the futures contract over to the next delivery date when it comes due, because she's always in the business of borrowing wheat. If,

instead, she borrowed money to buy wheat, she'd also roll the loan over when it came due, or issue new bonds to pay off old bonds. Borrowing wheat obligates her to make mark-to-market payments as the price of wheat changes; borrowing money obligates her to make periodic interest payments.

This is why futures markets stimulate so much economic activity; they create credit like a bank. Moreover, by allowing middlemen to borrow and lend things directly, taking money out of the equation, they both reduce the risk of money changing value (or being embezzled or stolen or taxed) and expand the supply of credit. The capital needed for margin is far smaller than the capital that would be required to capitalize a bank plus collateralize its loans.

It's not just commodities that are borrowed and lent. A shipper can go short St. Louis wheat and long Chicago wheat to lend shipping services (another

Gamblers are needed because no one knows the right price for financial assets

middleman could use those same contracts to borrow shipping services in the other direction). A cleaner can go short #2 wheat and long #1 wheat to lend cleaning services.

Much of this borrowing and lending nets out, but there are natural imbalances (such as more demand to borrow commodities than to lend them). This means that some speculators are collecting average profits by balancing the market. Other speculators supply capital to the market, and still others supply liquidity. It's easy to understand why all these people are creating value by making the industry more efficient. But what about pure gamblers?

Gamblers are needed because no one knows the right price for financial assets. Fischer Black defined an efficient market as one that gets prices right within 50 percent, 90 percent of the time (I argued with him that it should be "half the time," and he didn't dismiss that). Consider the simplest model for valuing a common stock – for example, the Gordon model. It says that the net present value of the future cash flows of a common stock are equal to the expected next year dividends divided by the difference between the rate of return demanded by

investors and the expected growth rate of dividends.

The average dividend rate of the S&P500 stocks is about 2 percent. That means that stocks are worth about 50 times dividends. But it also means that more than half the present value of a stock purchased today comes from cash flows expected more than 35 years in the future. Who can predict growth rates that far ahead? Compare to a much simpler problem, measuring the economy-wide growth rate (so averaging out the idiosyncratic features of a single company) over the quarter that just ended. Since 2002, when the process got more accurate, the average difference between the highest and lowest reported number, from initial indication to the final revised number, is 1.8 percent. This isn't comparing an estimate to truth, but two estimates made by the same people, using the same definitions and methodologies, just with additional information that trickles out in the months following quarter-end.

But a 1.8 percent error in the growth rate of the dividends of a single company over the next century or so would mean that stocks could be worth ten times current prices, or half current prices.

Imagine, back in 1982, asking how Microsoft cash flows would compare to Sears in 2017, or trying to explain to someone how to value Snapchat. Moreover, that's just looking at the growth rate, which at least is observable after the fact. No one has any idea what rate investors should demand, and attempts to measure it and relate it to rational theory have mostly failed. And we're only talking about the most liquid and well-followed large-cap US stocks that pay dividends; and we're assuming a constant growth rate. And we're only looking at the asset side; we haven't asked what a dollar will be worth decades in the future, or what tax rates will be. Lots of other stuff is even harder to value. In fact, most of what we call valuation is relative only. It might be possible to rationally conclude that one stock is more valuable than another, but not to put anything but a ballpark guess on absolute prices that will be justified by future cash flows.

Now imagine a world with common stock,

but no stock market. A bunch of people interested in stocks gather, say, under a buttonwood tree in downtown Manhattan. Some own one stock and would like to trade it for another, but they don't know the right price to sell at, and can't guarantee being able to buy if they do sell. Some want to invest in stock, some want to sell stock to fund economic activity. Some have information, say, that a company's new product has manufacturing problems and will not compete well with alternatives. These people want to short the stock today and buy it back later at a profit. They have no idea of the overall value of the company, but they are pretty sure that it will be lower tomorrow than today. But there's no one to transact with.

A gambler happens to be sitting on a bench nearby. She knows even less about values than anyone – in fact, she has no idea what a stock is or what the companies do. But she's good at reading people and she enjoys taking risk, while the rest of the crowd hates it. She senses that there is more buying interest than selling interest, so she starts bidding US\$10 for a share. She gets no takers, but everyone pays close attention to the one person willing to name a price. She goes up to US\$11, US\$12, and finally gets a taker. This gives buyers confidence that the stock is worth at least \$12, so a few of the bolder ones join in. As the price rises, more sellers accept, and pretty soon there is a bubble with lots of frantic buyers.

The price gets up to US\$80 when the gambler senses a change in mood. Most of the people who want stock have already bought, and the remaining sellers are getting nervous about turning down such high bids. The gambler starts selling, which causes a wave of sellers to sense that the top has been reached, and the stock plummets down to US\$20. It goes back and forth like this for a while before it settles at US\$40. The gambler makes a nice profit by always being a bit ahead of the pack.

But now there is an active market at US\$40, meaning that people buy and sell the stock and bring information to market. Stock is more valuable for everyone due to the liquidity. The US\$40 is not right in any sense – it could as easily have been \$20 or \$80 – but it's better to pretend that the price is known than to admit the uncertainty. The gambler's work is not done, however, because there are periodic market disruptions as the essentially random

level of market prices gets too far out of line with economics.

It offends some people that an important economic institution could be a game charged with generating random prices rather than performing sober economic analysis. But this is how society solves problems when getting a fair answer is more important than getting the right answer. We can't have some people thinking that A is a murderer and others disagreeing. Someone in the first group might kill A for revenge, which someone in the second group would consider a new murder, and unleash a cycle of violence.

So, we have a trial. We promise A a fair trial – we do not promise him the correct result. We let random people make the decision, not the most qualified people, and we select them by lot. People wear funny clothes and use old-fashioned words. The activity takes place in an area walled off from normal affairs, where external considerations are not supposed to matter. We use the same word, “court,” for trials and basketball and tennis. We exclude evidence and disallow double jeopardy to be fair, even though those rules make the verdict less accurate.

Similarly, we don't want half the people following one leader and half another, so we hold an election, with all sorts of game-like elements. We insist that it be fair, not that the wisest and most qualified person wins.

If a financial market is fair, people will trust it with their savings and entrepreneurs will trust it with their companies. I might buy stocks for my retirement fund at twice what they're worth, and sell for half what they're worth, but it will be the luck of the draw. I'm not cheated because no one else knew better. I'm just unlucky, and I can accept that, especially as the long-term growth rates of stocks makes them acceptable investments, even if I buy during a period of overvaluation and sell during a period of undervaluation (and if I buy and sell over many years, I diversify my risk further). I might sell my company for half what it's worth, or twice, but I don't care because I'll reinvest the proceeds in other financial assets at the same relative valuation. People will bring information to market. They know that they might be right in their information but still lose money owing to a valuation correction in between the time they initiate a position and the time they close it out, but as long as things are fair,

all of that will average out over many trades.

It is gamblers who make things fair in financial markets because they quickly exploit any unfairness. At a sporting event, fans want their favored team to win. The league wants to make money. The players want some combination of winning and making money. The only people who care that the game is fair are the people who have bet on it; and they care as much about a game between two teams at the bottom of the standings near the end of the season as they do about the championship games.

Fairness is far more important than accuracy. When DNA tests revealed shocking errors in the most serious criminal cases and government experts admitted to false testimony, it didn't have a lot of public impact. But racial disparity in capital punishment and drug sentencing led to major changes. We elect all kinds of idiots, and people shrug it off, but the manipulations in the 2000 presidential vote count were traumatic. The market soars up and down on little news, more than any rational calculation can justify, and no one cares. But the charge that high-frequency traders have rigged the market was big news.

You would think that judges would understand gamblers. Both have to make decisions, even when the evidence conflicts and principles clash. Both value fairness over accuracy, and participate in games. Judges are also familiar with elections either directly for elected judges, or indirectly for appointed ones. But, for some reason, it seems that judges want to take gambling out of finance. Professor Banner argues that it's hard to exclude gambling while retaining investing. I think it's more fundamental; gambling is what makes financial markets work.

Speculation is a fine work, of interest to historians, lawyers, and financial professionals. It's full of amusing and memorable stories that add up to some deep insights about how the legal and regulatory framework of financial markets was constructed. It is much more sensible about financial theory and practice than most books written by nontraders, and it is far more attuned to legal and political nuance than most market participants.

[AQ1: Please confirm if this quote is correct; I can only find “*Wealth [gotten] by vanity...*” (see also the other two instances of “breath” in this paragraph).]
[AQ2: Is the updated publication date OK?]

