Timing the Regulatory Tightrope

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Regulators face a hard problem. Novel products are developed and launched all the time. At first, regulators have very little information about the product, including its risks and benefits. Moving too quickly to impose regulations is therefore risky. And since the market for a nascent product is generally small, the benefits of regulation may also be small. It therefore makes sense to let the market develop a bit before taking action.

But waiting too long to intervene can also be perilous. Once enough time has passed, and the product becomes established, it can become extremely difficult to intervene. Now there is an entrenched constituency supporting the product; this constituency can be very difficult to overcome, even if regulation—including regulating the product out of existence—is socially valuable.

In short, regulators face a timing problem: Waiting allows regulators to learn, thereby reducing the risk of mistakes. But it can also limit the regulators choice set. While this is a generic problem, this chapter explores this issue in the context of new products in the securities market. It does so by considering the introduction of three distinct products: cryptoassets, money market mutual funds, and exchange traded funds.

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I. Introduction

The world is complicated. One reason for this is that the world isn’t static: technology advances, practices evolve, and tastes change. Products and markets develop in response to these changes. This poses a challenge for regulators: when (and how) to intervene when a new product or market emerges? Early on, a regulator has very little information. Intervening too forcefully too early comes with enormous risks of error.¹ But as time passes, market participants become accustomed to the status quo. The larger players become entrenched incumbents, able and willing to deploy substantial resources to resist even socially valuable regulatory interventions that threaten their bottom line.² Waiting too long, in other words, is risky too: a regulator might lose the opportunity to impose socially valuable regulation.

This problem appears across a wide variety of legal settings.³ In tax, commentators talk about the “Wall Street Rule.”⁴ Silicon Valley entrepreneurs speak of the “move fast and break things” strategy.⁵ In this chapter, I discuss this phenomenon in the securities market. For concreteness, I discuss three distinct examples, each of which involved substantial regulatory developments in the past five years: cryptoassets, money market mutual funds, and exchange traded funds (ETFs). All three represent classes of products—arguably even markets—that were highly innovative when introduced. All were innovations that the relevant regulator—the SEC—tolerated, either explicitly or implicitly, to a greater or lesser degree, for several years. During that time, each of these innovations took on a life of its own, growing into multi-trillion-dollar markets. While this undoubtedly speaks to the popularity of each innovation, there can be a wedge between popularity and social value.⁶

It is fairly obvious why it’s costly to try to fit nascent products and innovations into the regulatory scheme in real time. The product or innovation might turn out to be a flash in the pan: making a big splash today, only to disappear. The graveyard of “next big things” that didn’t take off is vast.

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¹ The risk of regulatory error is certainly not confined to new products or industries. One classic solution to the more general problem of regulatory (or for that matter, legislative) error is temporary rules, or sunsets. There is, of course, a substantial literature on this topic. See e.g. Roberta Romano, Empowering Investors: A Market Approach to Securities Regulation, 107 Yale L.J. 2359 (1998); Jacob E. Gersen, Temporary Legislation, 74 University Chicago L. Rev. 247 (2007); Roberta Romano & Simon A. Levin, Sunsetting as an Adaptive Strategy, 118 Proceedings of the National Academy of Sciences e2015258118 (2021).
² Obviously market participants might also be able and willing to resist socially harmful regulatory interventions. But from the perspective of a benevolent regulator, this is a benefit of waiting, not a drawback.
³ Interestingly, one setting in which we do not tend to see this is in drug development: drugs are required to successfully complete extensive trials before they can go to market. Obviously, the amount of time that this process takes also has costs.
⁴ See Bradley T. Borden and David Reiss, Wall Street Rules Applied to REMIC Classification THOMSON REUTERS NEWS & INSIGHTS (Sep. 13, 2012).
⁵ Indeed, for some startups, changing the law is an important part of the business plan, a phenomenon Professors Pollman and Barry have called “regulatory entrepreneurship. Elizbeth Pollman & Jordan M. Barry, Regulatory Entrepreneurship, 90 So. Cal. L. Rev. 383 (2016).
⁶ I do not mean to take issue with a utilitarian approach to regulation. Rather, what I have in mind are regulations aimed at externalities, as well as those intended to reduce fraud and promote consumer protection.
The costs of learning about, and then crafting a response to, such products is nontrivial. If they end up dying a natural death in short order, the nontrivial costs—including effort, attention, and regulatory capital—will be for nothing. Even if it doesn’t disappear, learning takes time and effort. Regulators may not have the expertise in-house to understand the nuances of a novel product or innovation. They therefore face a sort of make-or-buy decision: develop that expertise in-house, with the accompanying costs and limitations, or try to acquire it from external sources (either by hiring people from the industry or seeking input from such people or entities). This challenge is compounded when the product or market is evolving rapidly: information acquired at substantial cost may become stale before it can be put to use. This both increases costs and compounds the risk of error. That is not to say that this evolution is a problem. Problems with, or concerns about, a nascent product or industry might resolve themselves over time. In competitive markets, we expect evolution to push towards better—or at least more profitable—products. Imposing regulation too soon could stifle innovation or freeze the status quo in amber, or both. This risk is particularly acute given that regulation—especially formal notice and comment rulemaking—moves slowly.

But there are also costs of waiting too long before regulating new products or innovations. Regulatory uncertainty is itself costly, as market participants have to make predictions about where regulation is going in the future. And most obviously, to the extent that the regulation at issue would be socially valuable, that value is foregone while the regulation is not in place. Bad things might happen, people might be harmed, or, more prosaically, things just might not work as well as they otherwise would. These costs can become permanent once the product or innovation has entrenched supporters with a great deal to lose from intervention. This can make regulatory intervention difficult, or even impossible. At the very least, the political realities might foreclose the first best regulatory option, leaving open only the possibility of a second-best approach.

In short, regulators have an unenviable job in balancing the risk of moving “too soon” against the risk of being “too late.” The ideas in this chapter are straightforward applications of some of the bedrock principles of law and economics. Most obviously, this chapter is a direct application of the lessons of public choice theory, especially rent seeking behavior by industry participants. It also implicates the challenges of choice under uncertainty, learning, optimal stopping, and constrained optimization. And of course, it represents yet another instantiation of the classic

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7 Some innovative startups have responded to this by investing in regulatory affairs. For a discussion of this phenomenon, see Elizabeth Pollman, The Rise of Regulatory Affairs in Innovative Startups in The Cambridge Handbook on Law and Entrepreneurship in the United States (D. Gordon Smith, Brian Broughman & Christine Hurt eds., Cambridge University Press 2022). Obviously,

8 Naturally, this tends to benefit incumbents, which may make us even more skeptical about demands for quick regulatory action (particularly when they come from groups associated with, or financed by, those very incumbents).

9 Professor Gary Gorton, in joint work with Professor Jeffrey Zhang, have made a version of this argument based on the risks to the financial system. Gary B. Gorton & Jeffery Y. Zhang, Taming Wildcat Stablecoins 90 U. Chi. L. Rev. 909, 914 (2023) (“Some policymakers may view stablecoins as an up-and-coming financial innovation that does not currently pose any systemic risk and therefore believe that the best strategy is to wait to see how things play out. That would be a terrible mistake. If policymakers wait a decade, stablecoins might become a multitrillion-dollar industry—too big to fail—and the government will have to step in with a rescue package whenever there’s a financial panic”).

Electronic copy available at: https://ssrn.com/abstract=4593670
tradeoff of rules versus standards. The three examples that follow illustrate very concretely what this can look like in practice.

II. Cryptoassets: The Current Battlefield

Cryptoassets are the most salient current example of this problem in the world of securities regulation. For the past few years, issuers, the SEC, courts, commentators and others have been engaged in a prolonged back-and-forth about whether, and which, cryptoassets are securities under the federal securities laws and, to the extent that they are, how they should be regulated under the securities regulatory regime. One substantial challenge that the SEC faces in taking regulatory action in 2023 against participants in the crypto ecosystem is the fact the market has been allowed to operate in something of a gray area—largely, but not entirely, outside the confines of the securities regulatory system—for 15 years. In that time, it has gone from nonexistent to a trillion dollar asset class. While a small product or market is relatively easy to regulate a market that large has the means to push back against regulatory interventions that threaten incumbents, even when those interventions are socially valuable.

Once it became clear that there was real money—and real potential for investor losses—on the line, questions about the legal status of these assets became more pressing. By the late 2010s, a tentative consensus began to emerge that Bitcoin is likely not a security, while at least some digital assets are. But there is an enormous gray area in between these two poles: what about certain specific tokens, most prominently Ripple (XRP), or the myriad of other tokens that have sprung up over the past 15 years? And if one or more of the tokens listed on a crypto exchange is a security, does it follow that the exchange is a securities exchange operating contrary to the requirements of the Securities Exchange Act of 1934? This is, in effect, the claim the SEC made against both Binance and Coinbase. What about the ecosystem of crypto products that have been launched, 

10 I use the term “issuer” here loosely. In securities law, issuer is a term of art referring to an entity that issues securities. Obviously in this context there is substantial debate about whether the assets in question are in fact securities.
11 Bitcoin, the first cryptoasset, was introduced in 2008 by the pseudonymous person or entity Satoshi Nakamoto. See Satoshi Nakamoto, Bitcoin: A Peer-to-Peer Electronic Cash System, available at https://bitcoin.org/bitcoin.pdf.
12 The total global market capitalization of the crypto market was approximately $1.2 trillion in August 2023. The total value peaked at $2.297 trillion on November 10, 2021. In the last two years or so, Bitcoin has represented roughly half of the total market cap of the market. The total market cap excluding Bitcoin was about $600 billion in August 2023, and peaked at $1.67 on November 10, 2021. https://coinmarketcap.com/charts/
14 In July 2023, the Southern District of New York handed down a split decision on the question of whether Ripple is a security. SEC v. Ripple Labs, et al., 20-cv-10832 (S.D.N.Y).
including crypto lending programs promising high yields like Genesis and Gemini\(^\text{16}\) and staking services like Kraken?\(^\text{17}\)

These are interesting legal questions, all of which make for excellent law school hypotheticals and hefty legal bills. There are also important public policy questions at stake, which would benefit from careful analysis.\(^\text{18}\) Alas, the public discourse, and even much of the legal discourse, has been derailed. Instead, we have enforcement efforts by the SEC under existing law (applying the 77-year-old precedent from Howey),\(^\text{19}\) countered by objections about insufficient notice (in the application of a 77-year-old precedent).\(^\text{20}\)

One way to understand these objections is that they rest, at least in part, on a sort of estoppel argument. Crypto defenders seem to take the view that, having let the industry operate this long in a gray area, it is unfair for it to now adopt a hard-line approach. Instead, the thought appears to be, the SEC should have engaged in rulemaking specific to the crypto industry.\(^\text{21}\) The SEC’s unsympathetic response is that there is no need for special rulemaking: it is simply applying the flexible, fact intensive test that the Supreme Court laid down 77 years ago.\(^\text{22}\) As a legal matter, the SEC seems to have the better of the argument: one need not \textit{like} the Howey test to recognize that

\(^{16}\) In January 2023, the SEC sued Genesis and Gemini, alleging that their lending program was an unregistered security. \textit{SEC v. Genesis Global Capital, LLC and Gemini Trust Company, LLC}, 23-cv-287 (S.D.N.Y.) (complaint).

\(^{17}\) In February 2023, the SEC settled with the operators of the Kraken staking service. The SEC had alleged that the service was a security. \textit{Payward Ventures, Inc. and Payward Trading, Ltd.}, 23-cv-588 (N.D.CA.) (complaint). As a legal matter, the question of whether these products are \textit{themselves} securities under the securities laws is distinct from whether the underlying cryptoassets are securities. After all, the arrangement in \textit{Howey} was found to be a security even though no one thinks that oranges are, themselves, securities.

\(^{18}\) The question of whether the CFTC or the SEC is best suited to regulate this market. This is ironic given that the existence of these two distinct federal regulators is itself the product of historical accident which became entrenched through vested economic interests. Few (if any) defend the division of labor on the merits. Yet efforts to merge the two entities—most recently after the 2008 financial crisis—were stymied by political interests. See Sarah N. Lynch, \textit{Retiring US Lawmaker Barney Frank Seeks SEC-CFTC Merger}, \textit{REUTERS} (Nov. 29, 2012) \url{https://www.reuters.com/article/sec-cftc-merger/retiring-us-lawmaker-barney-frank-seeks-sec-cftc-merger-idUSL1E8MTGFA20121129} (noting that “one thing lawmakers could not agree on [in the aftermath of the 2008 financial crisis] was a proposed merger of the CFTC and SEC, in large part because of jurisdictional disagreements between committees overseeing financial services and those responsible for agriculture, the latter having a long history of overseeing the CFTC”). While this is not a testable hypothesis, one might suspect that it would have been much easier to rationalize the regulatory system—almost certainly by locating the regulation of commodities in the same agency as the regulation of securities—before the derivatives market took off. Alas, at that point, why would anyone have thought to bother?

\(^{19}\) \textit{SEC v. W.J. Howey Co.}, 328 U.S. 293 (1946).

\(^{20}\) See e.g. Coinbase, “We asked the SEC for reasonable crypto rules for Americans. We got legal threats instead.” \url{https://www.coinbase.com/blog/we-asked-the-sec-for-reasonable-crypto-rules-for-americans-we-got-legal} (Mar. 22, 2023) [hereinafter “Coinbase statement”].


\(^{22}\) See Coinbase complaint, \textit{supra} note 15 at 3 (“Since at least 2016, Coinbase has understood that the Supreme Court’s decision in SEC v. W.J. Howey Co., 328 U.S. 293 (1946) and its progeny set forth the relevant test for determining whether a crypto asset is part of an investment contract that is subject to regulation under the securities laws.”).
it is the controlling precedent. And to the extent that one is unhappy with Howey, it’s hardly the fault of the SEC in 2023: it seems that one should take this up with the Supreme Court (which created the test) or Congress (which could have superseded it by statute any time in the last 77 years). While there is some truth in the fact that the SEC could have gone through notice and comment rulemaking, there’s a big difference between saying that it could have and that it had some obligation to do so.23

But time seems to be on the crypto industry’s side. Presumably, if the SEC had decided to pursue enforcement against, say, crypto exchanges when they first emerged, these arguments would be harder to make out.24 At that point, it would have made little sense to even talk about the crypto industry—there wasn’t an industry in any meaningful sense of the word. Instead, the SEC would likely have said that it was simply applying established precedent regarding digital assets. After all, when, back in 2000, the SEC pursued the claim that the operator of a “virtual stock exchange” was in fact selling securities, it won at the Third Circuit.25 The defendant ultimately settled, paying a large penalty.26 Perhaps crypto exchanges would have fought harder than the defendant in that 2000 case did—the parallel isn’t perfect after all—and we’ll never know the counterfactual. But even if it had, it’s unlikely that arguments of this character would find much purchase.

Yet in 2023, Coinbase is explicitly making a version of this estoppel argument. Because the SEC approved its registration statement in 2021, thereby allowing it to proceed with its initial public offering, Coinbase argues that the SEC’s enforcements actions in 2023 are unfair.27 In effect, this boils down to: “The SEC could have objected to our IPO if it had really wanted to. Because it didn’t, it’s not allowed to seek to enforce the securities laws now, at least as they relate to that business.” This is not a very good legal argument.

To be sure, Coinbase is not entirely unsympathetic. Chair Gensler’s statement that issuers of cryptoassets can easily comply with registration requirements under the securities laws because “it’s just a form on our website,”28 while perhaps an understandable response to caterwauling by the crypto industry, did not win him many friends. In addition to grossly downplaying the costs of registration for even a traditional issuer,29 the fact of the matter is that the current regime is not a

23 It’s also not fair to say that the SEC provided no guidance about how it thought applicable precedent applied in the context of cryptoassets. For example, in April 2019 the Strategic Hub for Innovation and Financial Technology of the SEC released a Framework for “Investment Contract” Analysis of Digital Assets, available at https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets.
24 This is not to say that crypto enthusiasts wouldn’t have raised other objections.
27 See Coinbase statement, supra note 20 (“Especially because our … services are largely unchanged since 2021, when the SEC reviewed our S-1 and allowed us to become a public company. Our core business model remains the same”).
29 For example, while the legal fees associated with an IPO vary with the size and complexity of the deal, numbers in the range of $1.5 million to $2 million appear to be common. See Audit Analytics, “2020 IPO Accounting and Legal Fees,” Feb. 9, 2021, https://blog.auditanalytics.com/2020-ipo-accounting-and-legal-fees; Sophia Kunthara, “Want To
great fit for some of the putative issuers. But while this is understandably frustrating and perhaps even a little impolitic, it’s not clear how far that argument goes (or should go).

There is a great deal more that can be—and surely will be said—about the crypto wars. But for the purposes of this discussion, two things are fairly clear. First, it is entirely understandable that the SEC wanted to see how things would evolve before taking regulatory action; it would have been rightly criticized if it had charged in without knowing what it was doing. It is also clear that the pushback is considerably stronger now than it would have been 10 years ago.

It is also ridiculous to assume that regulators aren’t aware of the risks of letting an innovation gain a foothold in the market. They certainly are, and are doing their best to learn from experience. The SEC’s interventions in the SPAC context may have hit the sweet spot in this regard. Whatever one thinks about the risks and merits of SPACs, the SEC’s timing looks pretty good. While SPACs had been around for many years, they exploded in popularity in 2020. This continued to grow in 2021, when 616 SPAC listings raised a collective $162.6 billion. In March of 2022, the SEC intervened; while the details are a bit baroque, the effect was to make the SPAC structure much less attractive. By then, enough time had probably passed for the SEC to have a pretty clear understanding of what was going on (and to have concluded that regulatory action was desirable), yet not so much time that an ecosystem of service providers had time to become fully established.

### III. Money Market Funds: Good for Individuals, Risky for the System

One possible takeaway from the discussion of cryptoassets is that, rather than letting the market experiment on its own, a regulator would be wise to let experimentation happen within the confines

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30 The SEC’s longstanding resistance to crypto ETFs is consistent with such an understanding.


34 This was done with a little help from some two law professors, Rob Jackson at NYU and John Morley and Yale. See *Assad v. Pershing Square Tontine Holdings et al*, No. 1-21-cv-06907 (S.D.N.Y. Aug. 2021) (complaint).


36 Obviously it’s hard to know for sure whether either of these statements is true. And there’s an additional wrinkle: at least in theory, the SPAC model could have represented competition with more established players (the investment banks). To the extent that the SEC’s had the support (tacit or otherwise) of those incumbents, this might have made it much easier for the SEC to intervene.
of the regulatory regime.\textsuperscript{37} After all, that would preserve the benefits of experimentation—deferring the question of whether or not a product is a good idea—without losing control of it entirely. The consensus view is that this is how we ended up with money market funds. While privately attractive to investor-depositors, most (albeit not all) scholars and commentators who have looked at these funds have concluded that they pose a grave risk to the market as a whole.

Unlike, say, cryptoassets, money market funds have operated with the formal blessing of the SEC since their inception via the promulgation of Rule 2a-7.\textsuperscript{38} The standard account of money market funds is that they were created in response to the Regulation Q interest rate caps at banks; when inflation—and therefore interest rates—increased sharply in the 1970s, these caps were well below market rates.\textsuperscript{39} Depositors, understandably, wanted interest rates that reflected market conditions; in other words, rates that were higher than what banks could legally offer. Ironically, what began as a means of insulating banks from competition is widely viewed as having spawned a fierce competitor.

Legally structured as mutual funds—and therefore as securities products—money market funds were not subject to Regulation Q, allowing them to pay whatever interest rate their underlying assets could support. And while they are a banking-like product, the fact that they are legally securities places them under the regulatory purview of the SEC. They proved immensely popular with “depositors,” who are formally investors in the mutual fund. While not exactly analogous to bank accounts, they serve roughly the same function. In order to do so, they endeavored to maintain a stable net asset value (“NAV”) of $1. As a result of this, if an investor put $1,000 into the money market fund, she could expect to be able to withdraw $1,000 (along with some interest) at any time of her choosing.

Formally, the way this works is that investors buy shares in the money market fund (the functional equivalent of depositing money in a bank account). The fund takes that money and uses it to purchase safe, short-term debt instruments. This is the economic equivalent of making a short-term loan. In principle then, this makes money market funds quite different from banks, which use investors to make long term loans like mortgages. This is commonly known as the maturity transformation function of banks, and is generally regarded as a core feature of the banking system.\textsuperscript{40}

In reality, this difference may be less substantial than it seems. While it is true that the funds’ assets are short term (often maturing in 30 or 60 days), almost without exception, those loans are themselves funding longer term projects for the borrowers, who expect to “roll” those loans. Take

\textsuperscript{37} Sometimes this happens through the use of a regulatory sandbox. Others, such as the case of money market funds, a regulatory simply permits an innovation, subject to certain restrictions.
\textsuperscript{38} 17 C.F.R. 270.2a-7.
\textsuperscript{39} For a standard textbook account of the rise of money market mutual funds, their regulation, and the problems they create for financial stability, see MICHAEL S. BARR, HOWELL E. JACKSON & MARGARET TAHYAR, FINANCIAL REGULATION: LAW AND POLICY (3d ed. 2021) at 1395-1422.
\textsuperscript{40} See Barr et al., supra note 39 at 11.
for example a prime money market fund, which generally owns short-term debt instruments from highly rated corporations (i.e. commercial paper) or from a securitization program (i.e., asset backed commercial paper). While JP Morgan Securities might issue 30- or 60-day commercial paper to fund its operations—exactly the sort of asset that such a prime money market fund would be delighted to buy—JP Morgan doesn’t actually expect to pay off all this debt when it comes due. Instead, it expects to issue new debt at the end of the term to pay off the maturing paper. As a result, the difference between a bank loan and a money market fund, at least with respect to maturity transformation, is that while banks internalize this function, money market funds externalize it onto the borrower. Yet, as became clear in both the 2008 financial crisis and the March 2020 market dislocations, borrowers do not always fully internalize this.

Any old mutual fund could adopt the practices described so far. While the Investment Company Act of 1940 imposes some modest restrictions on fund portfolios, there is nothing in that statute or the associated regulations (or, for that matter, in any other part of the securities law) that would prevent a garden variety mutual fund from restricting itself to such assets by contract. But this alone doesn’t give investors what they want: a substitute for a bank account. After all, the prices of the highly rated short term debt instruments that the fund owns can still go up and down, albeit by relatively small amounts. While bank balances can go up as they earn interest, barring a withdrawal (or perhaps an account service fee) they aren’t supposed to go down. While the assets backing bank deposits can also go up and down, these changes are not reflected in bank account balances. In contrast, mutual funds are, by SEC fiat, required to report—and transact at—the next calculated NAV, calculated to the fourth decimal place (i.e., one one-hundredth of a cent). As a result, even very small changes in the value of the underlying assets is immediately reflected in the value of the “deposit.”

This is where rule 2a-7 comes in. Inter alia, the rule allows money market funds to smooth out fluctuations in the value of the underlying assets through one of two means: so-called “penny rounding” and amortized cost valuation. While the mechanics are slightly different, both allowed money market funds to report smoother NAV—and allowed investors to transact at such NAVs—

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41 An asset backed commercial paper conduit is similar: the conduit holds relatively long-term assets, which are what back the short term notes it sells. Even in the context of a government money market fund, the issuer doesn’t actually intend to retire the debt when it matures. Instead, the U.S. Treasury typically finances payments on maturing debt by issuing new debt.


43 Indeed, ultra short-term bond funds exist. There was some speculation after the money market fund reforms that followed the financial crisis that investor funds would migrate away from money market funds to these funds. That does not appear to have happened.

44 This is part of what leads to bank runs like the recent collapse of Silicon Valley Bank.

45 Barr et al., supra note 39 at 1398.
than a traditional mutual fund could. Penny rounding is the more intuitive of the two: rather than reporting NAV to four decimal places, penny rounding allowed funds to report to only 2 decimal places (i.e., to the penny). This is enormously helpful in maintaining a stable NAV. Suppose, for the sake of argument, that the value of the assets in the fund dropped from $1 to $0.996239632. Using the standard NAV calculation rules, the fund would have to report an NAV of $0.9962. More importantly, an investor who had put $1,000 into the fund the prior day would only be able to withdraw $996.2 today. This is not supposed to happen to a bank account. With penny rounding, however, the fund would be allowed to continue to report an NAV of $1.00. This keeps the balance stable, which is just what the investors want. Unless, of course, the NAV falls below $0.9950, at which point the fund will have to report an NAV of $0.99 (or less). This is known as “breaking the buck,” and is viewed as a disaster among money market funds.46

Amortized cost valuation is a bit more complicated, but can be even more powerful. Rather than reporting the NAV based on the market value of the securities in the fund’s portfolio, amortized cost reporting allows funds to use their notional value, based on accounting principles. This is an even tidier way to ignore fluctuations in market prices than penny rounding. While it sounds extremely aggressive—perhaps even a little fraudulent—to disregard market movements, there is a rational basis for the practice: as long as the securities don’t actually default, the issuers will eventually make all the payments as promised. And so, the thinking goes, as long as the fund doesn’t have to sell those assets in the market dip, the fund will be able to use those payments to repay investors, regardless of market prices.

As long as the fluctuations are small and transitory, and do not coincide with large spikes in withdrawals, the system works amazingly well. And since the assets are generally very safe, and investors are highly confident in their safety, this state of affairs is very persistent. Importantly, neither of these techniques do anything to change the underlying value of the assets in the fund. All they do is change the value that is presented to investors, and, as a result, change the value that investors receive as long as nothing too terrible happens in the money market.

Unfortunately, sometimes terrible things do happen. If they do, and investors want their money back when asset prices are depressed, the fund will have no choice but to sell into that depressed market. The more it has to do so, the less value is left behind to repay the remaining investors. Eventually it won’t be able to keep its NAV at $1, and will have to break the buck.

Well before the 2008 financial crisis, at least some commentators recognized that money market funds posed potential prudential risks.47 But it was only with the onset of that crisis that those risks materialized. On September 16, 2008, the day after the now-notorious Lehman Brothers

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47 See e.g. Davis, E. Philip, Institutional investors, financial market efficiency, and financial stability, 8 European Investment Bank Papers 77 (2003) (“For example, as discussed in Edwards (1995), the stability of money market mutual funds could be threatened in some circumstances. A fund that breaks par value could plausibly lead to a run on such funds, which could lead to a more general liquidity crisis in the money markets.”)
bankruptcy filing, the Reserve Primary Fund, a large money market fund, received nearly $25 billion in redemption requests and ultimately broke the buck.\textsuperscript{48} From there, the run expanded to its competitor funds, totally about 14\% of all assets held in prime money market funds; the run only stopped when the Treasury stepped in and backstopped the entire market.\textsuperscript{49} It’s hard to overstate how extraordinary a move this was.

The broad consensus, albeit not universally held,\textsuperscript{50} is that money market funds pose grave dangers to financial stability.\textsuperscript{51} Accordingly, several have argued that they should be subject to much more stringent regulation; in private, some have gone so far as to say that they should not be allowed to exist at all.

That has not happened, nor is it likely to happen. A multi-trillion dollar market\textsuperscript{52}—popular with both investors and the borrowers that issue the debt that the funds hold—is well positioned to push back against aggressive regulatory action, even when that market owes its very existence to regulatory beneficence. The reforms that were introduced in the aftermath of the 2008 crisis to address some of their worst pathologies were incremental and modest in scope.\textsuperscript{53} Not only were those reforms widely viewed as inadequate to meaningfully address the problems,\textsuperscript{54} some skeptical observers feared that they would backfire in the event of another market dislocation. As it turned out, that is exactly what happened in March of 2020, when widespread lockdowns created enormous uncertainty in the financial markets and caused panic among investors in money market fund. Not only did investors flee a second time (which the post-2008 reforms were supposed to prevent); the post-2008 reforms actually backfired, resulting in pre-emptive runs.\textsuperscript{55} As in 2008, this panic again necessitated a bailout,\textsuperscript{56} something that was never supposed to happen again.

This second bailout, while disappointing, is hardly surprising. By March 2020, the market had grown to $4.8 trillion, and it’s only gotten larger since then: by July 31, 2023, a whopping $5.99 trillion of investor funds were in money market funds.\textsuperscript{57} Notwithstanding its shaky track record,

\begin{footnotesize}
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\item Barr et al., supra note 39 at 1408.
\item Id at 1408-9. See also Lawrence Schmidt, Allan Timmermann and Russ Wermers, \textit{Runs on Money Market Mutual Funds} 106 AM. ECON. REV. 2625 (2016).
\item For a defense of money market funds, see Jonathan Macey, \textit{Reducing Systemic Risk: The Role of Money Market Mutual Funds as Substitutes for Federally Insured Bank Deposits}, 17 STAN. J.L. BUS. & FIN. 131 (2011).
\item See generally Samuel G. Hanson, David S. Scharfstein, and Adi Sunderam, \textit{An Evaluation of Money Market Fund Reform Proposals}, 63 IMF ECONOMIC REVIEW 984 (2015).
\item In 2008, the total net assets in U.S. money market mutual funds was $3.8 trillion. INV. CO. INST., 2009 INVESTMENT COMPANY FACT BOOK 147.
\item Barr et al., supra note 39 at 1409-1417.
\item Jeffrey N. Gordon, \textit{Proposed Money Market Reforms Fail to Address Key Issues}, HARVARD LAW SCHOOL FORUM ON CORPORATE GOVERNANCE (Sep. 17, 2009) \url{https://corpgov.law.harvard.edu/2009/09/17/proposed-money-market-reforms-fail-to-address-key-issues}.
\item See Lei Li, Yi Li, Marco Macchiavelli, Xing Zhou, \textit{Liquidity Restrictions, Runs, and Central Bank Interventions: Evidence from Money Market Funds}, 34 REV. FIN. STUD. 5402 (2021).
\item Barr et al., supra note 39 at 1418-1420
\item Data from the Office of Financial Research U.S. Money Market Fund Monitor.
\end{enumerate}
\end{footnotesize}
the industry has successfully beaten back efforts to impose stringent regulation in the past. While there is some indication that the SEC may take action, it appears, based on a reading of the regulatory tea leaves, that such action is again likely to be incremental. Simply put, too much time has passed, during which time the market has grown too large, for it to be otherwise.

While it is probably too late to fix the mistakes behind money market funds, there’s still time to head off the same outcome in other settings. Take, for example, stablecoins. Professor Gary Gorton, one of the foremost experts in the study of private money, has argued in joint work with Professor Jeffery Zhang that stablecoins represent a form of private money. Accordingly, they argue that stablecoins should be subject to carefully crafted regulation in order to harness their benefits while managing their risks to the financial system. While the collapse of Terra/Luna has cooled the enthusiasm for stablecoins, the stablecoin market may yet rebound. Just as Gorton and Zhang have argued that this should happen before the market becomes too big to fail, it should also happen before it’s too late to regulate.

IV. ETFs: The Success Story

Based on this account, one might think that the lesson is to keep the camel’s nose from getting under the tent in the first place. And yet it would be ridiculous to argue that innovation is uniformly bad for markets, or for market participants. Even the more modest conclusion, that regulatory permission to deviate from the norm leads to bad outcomes, is not necessarily generalizable. Take, for example, the case of ETFs.

58 Barr et al., supra note 39 at 1413-4; 1417-18.
60 Gorton & Zhang, supra note 9.
61 Id.
63 Gorton & Zhang, supra note 9.
64 Putting aside the obvious benefits of innovation, sometimes it isn’t even clear when that nose is first poking at the bottom of the tent. For example, from the earliest days of the securities laws, there has been a distinction between loans (which are not securities) and bonds (which are). Yet, very gradually, the syndicated loan market has been blurring this traditional distinction. This market, like all financial markets, has its own idiosyncrasies and complexities, and it’s hard to pinpoint a specific moment when the SEC should have begun to focus on it in earnest. The upshot is that this is another context in which, in 2023, the SEC is grappling with the question of whether (and, if so, how) to exert regulatory authority over a multi-trillion dollar market (in this case, roughly $2.5 trillion). See generally Alison Frankel, SEC punts on whether syndicated loans are securities, in closely watched appeal, REUTERS (Jul. 20, 2023) https://www.reuters.com/legal/transactional/column-sec-punts-whether-syndicated-loans-are-securities-closely-watched-appeal-2023-07-19; Liz Hoffman, What’s a security? For once, the SEC won’t say, SEMAFOR (Jul. 25, 2023), https://www.semafor.com/article/07/25/2023/whats-a-security-for-once-the-sec-wont-say.
Like money market funds, ETFs are a product that rely on exemptions from other SEC rules regulating mutual funds. For most of their existence, the only way to operate an ETF was through individual exemption letters from the SEC granting relief from certain requirements. It is commonplace for people to think of ETFs as alternatives to mutual funds. In discussing the market for pooled investment products, both scholarly and trade publications commonly use phrases like “mutual funds and ETFs,” as though these were two separate (albeit perhaps similar) things. Formally, this is incorrect. ETFs are not an alternative to, or even a cousin of, mutual funds. They are simply a type of mutual fund. While this is admittedly a partly semantic point, referring to them as two separate things obscures what they are: mutual funds that have been granted exemptions from certain specific provisions of the Investment Company Act.

The first such exemption was granted to an ETF in 1992. The fact that these exemptions were provided through the use of specific exemption letters had some predictable consequences. Some are fairly obvious: On the plus side, it gave the SEC a built-in, fairly hands-on, role in helping to shape the development of the product. But there were costs, both pecuniary and otherwise. Petitioning the SEC for relief is more expensive and time consuming than following a standard procedure. It was also much riskier, since exemption was not necessarily guaranteed. Perhaps less obviously, it also led to regulatory quirks: it turns out that the exemption letters were not identical, leaving different ETFs operating under slightly different rules.

What started as a bespoke product proved wildly popular. It’s easy to see why. They are generally more tax efficient than traditional mutual funds and offer investors intraday liquidity. Many, although by no means all, charge low fees and track broadly diversified indices like the S&P 500. By the end of 2018, $3.4 trillion was invested in these funds.

Unlike money market funds, ETFs appear to have little in the way of social downside. Certainly, some have raised concerns about them at the margins. Some worry about liquidity, mostly in the

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65 It is also a point that has led to disagreements between the author and several of her past coauthors. Fortunately, to date these have all been resolved amicably.
66 15 U.S. Code § 80a et seq.
68 See Henry T.C. Hu & John D. Morley, A Regulatory Framework for Exchange-Traded Funds, 91 So. Cal. L. Rev. 839 (2018). While this could have been an opportunity for regulatory experimentation, I am not aware of any evidence to support the view that this was done intentionally for this purpose, or that this heterogeneity was exploited ex post in any systematic way to improve regulation going forward.
69 Id.
70 Several papers have documented the wide variety of highly specialized ETFs. See e.g. Adriana Z. Robertson, Passive in Name Only: Delegated Management and Index Investing, 36 Yale J. on Reg. 795 (2019); David Easley, David Michayluk, Maureen O’Hara & Tālis J Putnīns, The Active World of Passive Investing, 25 REV. FIN. 1433 (2021); Itzhak Ben-David, Francesco Franzoni, Byungwook Kim & Rabih Moussawi, Competition for Attention in the ETF Space, 36 REV. FIN. STUD. 987 (2023); Pat Akey, Adriana Z. Robertson & Mikhail Simutin, Closet Active Management of Passive Funds (Working Paper).
71 INV. CO. INST., 2019 INVESTMENT COMPANY FACTBOOK 83.
72 Arguably there is a social cost from the tax efficiency, but this seems second order, and also solvable by other means.
context of ETFs that hold relatively illiquid assets. Others are worried about short term dislocations that can and do occur. These concerns are worth noting, and it is certainly worth keeping an eye on them. Other issues may also arise and will have to be handled if and when they do. But for the time being these concerns pale compared to the shortcomings of traditional open ended mutual funds. More serious are the objections raised against exotic ETFs, including leveraged and inverse ETFs. These often have extremely volatile performance, and can also perform in ways that are wildly unintuitive to investors.

The SEC eventually went a step further and regularized vanilla ETFs through the adoption of Rule 6c-11 in September 2019. ETFs that satisfy the conditions for reliance on the rule no longer need individual approval from the SEC and can instead go straight to market. Exotic ETFs, which do not fall into that category, must continue to seek individualized relief from the SEC.

Perhaps one difference between ETFs and money market funds is that the SEC kept a hand on the tiller as ETFs developed. Yet it’s hard to know whether this is always the best course of action. After all, such an approach can lead to enormous costs and delay, not to mention mistakes. And of course, it’s hard to draw too many conclusions from three (far from randomly selected) anecdotes. But if nothing else, the example of ETFs shows that just because an innovation has become popular enough to protect itself from regulatory interference, it doesn’t mean that subsequent regulatory action (in this case, rule 6c-11) is necessarily compromised.

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75 These shortcomings include the lack of intra-day liquidity and end of day pricing. There is also a lack of transparency with respect to the portfolio of open-ended mutual funds: these funds are also only required to report holdings quarterly, so investors have no visibility into the portfolio most of the year. This is exacerbated when the fund holds illiquid assets, since it’s just up to the board to price these assets, which in turn determines the fund’s NAV.
77 17 C.F.R. § 270.6c-11.
78 In some quarters, the SEC’s longstanding refusal to approve a spot Bitcoin ETF is a prime example of such a (allegedly unjustified and harmful) delay.
79 A skeptic might argue that this example doesn’t show very much, since the later regulatory intervention more or less codified the pre-existing approach. There are two responses to this. First, there’s a meaningful difference between a regime based on specific exceptions and a regime that is open to all, even when the regimes have broadly similar effects on the entities within them. In this respect, rule 6c-11 can be understood as an expansion of the pre-existing approach. Moreover, the SEC’s decision to restrict the new rule 6c-11 to vanilla ETFs demonstrates that it didn’t simply extend the existing practice. Rather, it made a decision to expand (something quite similar to) the pre-existing regime only with respect to certain types of ETFs. It did so notwithstanding the fact that it had allowed exotic ETFs under the pre-existing regime. Presumably it made this distinction based on its understanding of the risks and benefits of the two sets of products.
V. Conclusion

Returning to the generic regulatory challenge, some themes emerge. All three of these examples are from a single regulatory setting (the securities laws). All three saw important developments in a relatively narrow time period (the last 5 years or so). Alas, even in that narrow setting, there isn’t some pithy answer like “the tipping point occurs three years, 4 months and 18 days after the product emerges” after which something becomes so entrenched that regulators’ hands are tied; or “once there are revenues of $500 million a year or more, the regulatory choice set becomes severely constrained.” Nor, as the example of ETFs shows, can we even say that the new products that are allowed to develop this way are universally problematic. All we can say with confidence is that the regulatory choice set becomes constrained over time as the size of the market grows. As a consequence of this, regulators have an extremely difficult job. Scholars and other observers would do well to remember this next time we’re tempted to pile on the criticisms.