: ħÂƒ· ê#

Is A Trader a Trader, No Matter How Small? [†]

Nizan Geslevich Packin[1]

Abstract

For many people, money is the primary source of anxiety. Identifying this as a business opportunity, and further reassured by data that shows how children are already veteran consumers of mobile apps by the age of six years, financial service providers have in recent years started offering financial apps to children, marketing these services as educational tools that increase financial literacy. But despite perceived advantages, consumer protection regulators should be very concerned about children using such mobile financial apps given the gamification features incorporated into their design, as well as their potentially addictive, gambling-enticing, social pressure encouraging, behaviorally and developmentally–disruptive impact. Using ethical reasoning, behavioral law and economics insights, and legal analysis, this Chapter examines these issues and calls for regulators to focus on finding policies that would be more conducive to positive financial outcomes for consumers.

Keywords: Children, FinTech, Crypto, Play-to-Earn, Trading, Investing, NFTs, Financial Education, Financial Literacy, Consumer Protection, Finance.

[†] "A person's a person. No matter how small." Dr. Seuss, "Horton Hears a Who!"

[1] Associate Professor of Law at Baruch College, City University of New York, a Fellow at the Yale Cyber Leadership Forum, an Affiliated Faculty at Indiana University Bloomington's Program on Governance of the Internet & Cybersecurity, and a Senior Lecturer at the Haifa University Faculty of Law. A special thank you to Joseph Aminov for his input and assistance in preparing this chapter.

Introduction

Many consumers around the world struggle, and have a hard time coping with financial stress. According to recent studies, almost 90 percent of surveyed Americans indicated that they experience anxiety about financial stability, noting specifically that nothing would make them happier than being reassured that they can deal with the challenge of keeping their finances in order. (FINRA, 2019; Bethune, S. & Brownawell, A., 2015.; Northwestern Mutual, 2018).) Similarly, more than seventy-five percent of millennials and Gen Xers regularly suffer from money-related anxiety. Seeking for ways to help people address these emotional and financial difficulties, some lawmakers have advocated for advancing financial education in the hope that financial literacy will help empower consumers. Many of these lawmakers' initiatives focus on increasing children's financial orientation in order to better equip them with relevant knowledge and confidence that could enable their ability to become financially responsible adults, reducing certain money-related concerns down the road. (Packin, N.G., 2022). Particularly, research has shown that the lack of financial literacy is linked not only to undesirable financial choices, but also to high levels of anxiety and low financial security. (Stoltmann, A. & Edwards, B. P., 2017; Pierce, T. & Williams, A., FINRA, 2021). Likewise, global organizations like the OECD have been measuring the success of jurisdictional implementations of educational programs, and comparing the different countries' results, in an attempt to push for increased financial education. (Coughlan, S. BBC, 2019; Hess, A. J., CNBC, 2020). Not everyone, however, agrees with this approach, and certain commentators argue that the predicate belief in the effectiveness of financial-literacy education lacks empirical support. (Willis, L.E., 2008; Elliehausen, G. E., Lundquist, C. & Staten, M. E., 2007; Jackson. H. E. & Anderson, S. A., at 844 n.51, 2007).) But one way or the other, identifying the youth market as a promising one in terms of business opportunities, especially in light of studies that show that by elementary school age children are already experienced digital consumers (UNICEF, 2018), financial technology (FinTech), decentralized finance (DeFi), and even traditional financial companies have started offering products and services to children. (Hansen, S., 2021; Haverstock, E., 2021; Chandler, S., 2022). These services include a broad array of financial-related products and services – from enabling children to earn money for doing their chores, to trading securities and fractions of stocks and crypto assets, and even earning digital assets and currencies while playing video games. (Robert Farrington, R., 2021; Yadav, O., 2022; Thompson, C., 2021.)

The appeal of offering financial products and services to children and emerging adults is an understandable one for three main reasons. First, it is always good for businesses to branch out to new segments of clientele and prospective customers. Second, as further described in this chapter, in terms of marketing efforts, children are an easy target—being underdeveloped emotionally, neurobiologically, and socially means they are vulnerable targets of manipulation and fraud. (Packin, N. G., 2022). Lastly, children and emerging adults will not stay young forever, and will eventually mature into income-earning adult customers at which point they are likely to continue using the services and products that they already know and like. Therefore, if businesses providing financial products and services could familiarize these young customers earlier on, such a move could prove beneficial for these businesses in the long term.

Many of the businesses providing financial products and services are relatively new players, and part of the FinTech industry that has experienced enormous expansion since the financial crisis of 2008. The crisis, which caused large parts of the public to feel anger and disappointment towards what people viewed as “greedy” big banks and financial institutions, has led to significant changes in how finance is governed. In response to the crisis, Congress enacted the Dodd-Frank Act with the intention to subject the financial industry to a comprehensive and systemic regulation on a level not seen since the New Deal. But the financial regulatory reforms implemented in the wake of the crisis were founded on an antiquated conception of what financial services entail and how they are delivered. The emergence of FinTech enterprises and the fundamental transformations they have brought about on a number of fronts, including how banking operates, how capital is produced, and even the very nature of money itself, have not been adequately accounted for by regulation. (Magnuson, W., 2018, p 1171). And while it was possible to dismiss the explosion in the size and importance of FinTech at the beginning – especially because the industry itself is surprisingly poorly defined since the term can be used broadly to refer to any use of technology in finance – it has quickly become clear that FinTech has ushered in a wave of innovation in the financial industry that impacts all sectors of finance.

FinTech companies present particularly serious issues for three main reasons. First, compared to large financial institutions, FinTech firms are more susceptible to negative economic shocks due to their size and business strategy, and given company interconnectivity, these shocks are more likely to spread to other companies in the sector. Second, because regulators lack accurate knowledge of the makeup and functioning of FinTech markets, FinTech businesses are harder to control and regulate than conventional financial institutions. Third, because FinTech companies often enjoy a regulatory arbitrage – they are, by design, subject to less rules and laws than traditional financial institutions – they do not have to comply with all the rules that traditional financial institutions do. As a result, consumers are less legally protected and informed, potentially subjected them to more discrimination. All of these issues indicate that FinTech raises regulatory concerns distinct from, and not necessarily less serious than, those raised by more traditional financial institutions. Indeed, these issues and the changes in the financial industry's structure, players, business norms, and business models, necessitate a comprehensive rethinking of financial regulation in the age of technology-enabled finance. Unfortunately, however, thus far regulators have not paid close attention to many of these changes and innovative business strategies, but for a few exceptions. One such exception that has drawn regulatory attention is financial apps' digital engagement practices. Such practices, which for the most part include gamification features, have become the object of legislative and regulatory interest in 2021-2022, following the January 2021 GameStop saga, where GameStop's stock price increased from $16 to $347 during January 2021 due to a contest between a large number of small retail investors and institutional investors such as hedge funds. This led media outlets, scholars and even regulators to begin discussions around the gamification features of trading apps. Such discussions, however, focused on how easy it is for investors to trade online via these apps, and the ethics of such trading apps' business models. (Verlaine, J. & Banerji, G. 2021). Trying to understand this issue better, the SEC issued a call for comments to learn more about these practices, how attractive they are to new investors, and FinTech apps' use of psychological prompts to influence investors to trade more, and do so more frequently (Bain, B. & Schmidt, R., 2021; Seal, D., 2021). Particularly, the regulators that deal with investor protection have started examining gamification features such as confetti, ringing sounds, certain colorful designs, and even rewards and badges that FinTech entities like Robinhood have used to lure young traders. (Fitzgerald, M., 2021; Massa, A. & Alloway, T., 2021; Popper, N., 2021; Levintova, H., 2021). But while the lawmakers are interested in the impact of these features on customers in general, as more and more financial institutions are looking to gamify their services and offerings, and incorporate game-like features that will draw and capture the attention of customers, (Ann, M., 2022), lawmakers have yet to focus on practices targeting children as customers of such financial services, although they should.

Indeed, while more and more financial service providers have started offering services to children in recent years, dealing with minors – as customers that are being offered financial products and services – is not and should not be the same as dealing with adults, in several key aspects. First, the legal rights and obligations of adults and minors are not the same; even if "children's law" is not a single body of law containing a coherent set of principles. (Buss, B., 2009, p 18-19). The main difference between these two groups' rights and obligations relates to the fact that the bodies of law that apply to children focus on children's development and the differences associated with it, as those can and do justify different treatment of children in various legal contexts. (Buss, B., 2020, p 267). And in the context of financial regulation, consumer and investor protection, along with securities law, should be among the legal contexts in which the treatment of children clearly needs to be different. Indeed, children as consumers are protected, for example, by unique legislation such as the Children's Online Privacy Protection Act (COPPA), which was mainly created to outlaw "unfair or deceptive acts or practices in connection with personal information from and about children on the internet." (Haber, E., 2020, p 1224). Such unfair or deceptive acts or practices have been recognized, for example, in children-targeted devices, toys, wearables, and internet of things- (IoT) based devices. (Haber, E., 2019, p 399). Certainly, there is logic behind the fact that children cannot vote, enlist in the military, get a driver's license, purchase alcohol, consume tobacco, and do other types of activities that mature adults can, and especially given that their judgment and capacity to understand consequences develop with time. (Watson, C.F., 2021, p 43.) Thus, society has taken legal measures to protect children from being exploited by those that seek to manipulate or defraud them. FinTech and DeFi apps and games that attempt to specifically target children should not be treated any differently, and should be carefully monitored and supervised as the latest entities to seek to potentially take advantage of minors while transacting with them. Yet, this business trend spurred by FinTech and DeFi apps and games will continue to grow because offering digital financial services to minors is becoming socially acceptable—especially given society's newly adopted paradigms for describing, understanding, and shaping children's rights, domestic relationships, custodial status, and even digital purchasing power. (Packin, N., 2022).

Second, FinTech and DeFi apps and games that are actually suitable for children might be harder to find than customers might realize. For example, it has been recently argued in mainstream media that tech giants Apple and Google have more power than the U.S.

government over the app economy through their control over the two biggest app stores, where they provide age ratings on apps, but do not assess the apps' suitability for children in terms of data protection and safety levels. Moreover, only about 5 percent of the most-popular child-directed apps are in the children's' part of the Google app store, and finding Apple's curated kids category is an extremely challenging task. Last but not least, the apps' providers themselves are the ones that self-identify the apps' age appropriateness levels, rather than a legally designated body that is tasked with doing so based on clear standards and analyses. (Fowler, G.A., 2022).

Additionally, not only do FinTech and DeFi apps and games not always deliver any agreed-upon true educational value for children, but in fact they can even greatly harm children. For instance, while many apps and games attempt to teach children about the value of money, the importance of investing, and risks in trading, these apps and games have a developmentally and behaviorally disruptive influence on children. Indeed, studies indicate that digital apps and games can function like "hard drugs" for children and act "like a stimulant" as the dopamine released by the stimulation of digital apps and games hits children predominantly hard as their cerebral cortexes are not sufficiently developed to enable them to feel satisfied with small doses or to self-regulate. (Packin, N.G., 2022, notes 168 - 178). These apps and games, therefore, cause children to feel anxiety and stress, subjecting them to the manipulations of third parties whom often seek to take advantage of them. A good example of such manipulations include anything from stock promotions on TikTok videos, referred to as #FinTok, to viral tweets on Instagram such as Kim Kardashian's cryptocurrency ad, which is the kind of promotion to which children and emerging adults have been especially susceptible to the influence of. Indeed, new research reveals that The majority (97%) of Gen Z consumers say they now use social media as their top source of shopping inspiration. (Kastenholz, C., 2021).

Third, FinTech and DeFi apps and games are spying on kids at a shocking scale, further selling and sharing the data to businesses that seek to better target children. "More than two-thirds of the 1,000 most popular iPhone apps likely to be used by children collect and send their personal information out to the advertising industry, according to a major new study. . . On Android, 79 percent of popular kids' apps do the same. . . Children's privacy deserves special attention because kids' data can be misused in some uniquely harmful ways. Research suggests many children can't distinguish ads from content, and tracking tech lets marketers micro-target young minds." (Fowler, G.A., 2022). These business models and industry norms result in a reality in which by the time a kid reaches the age of 13, online advertising companies already hold an average of 72 million data points about her or him, according to businesses that help app developers understand and navigate child-privacy laws. Likewise, in a recent survey of 164 educational apps and websites, it was discovered that almost 90% of the apps transferred data about the children that used the apps to the ad-tech sector. Likewise, two-thirds of the apps used by 124 preschool-aged children acquired and also shared detailed personal information, according to a 2020 study. Finally, a 2018 analysis of 5,855 fairly well-known, free children's apps discovered that the majority of these apps have probably violated the Children's Online Privacy Protection Act (COPPA) – a unique legislation that is largely designed to outlaw unfair or deceptive acts or business norms associated with usages of personal information from and about children on the internet – using all sorts of loopholes and legal maneuvers. (Fowler, G.A., 2022).

This Chapter, in discussing these issues, proceeds as follows: Part I examines the concept of financial education, and how that impacts children's understanding of money, savings, trading and investing. Part II analyzes the concepts of FinTech, DeFi, and GameFi, and describes the development of gamification in the financial service industry, and further how this trend has impacted children. Part III explores policy implications regarding the gamification of the financial industry as it impacts children. The discussion in this latter Part should guide lawmakers in regulating financial apps and digital games offered to children, and focuses on the policy implications in contexts which include: (i) the addictiveness of the app or game; (ii) how gamifying finance makes it feel less serious; (iii) the connection between gamification and gambling; (iv) how children's financial choices are more susceptible to the influence of third parties; (v) the consequences of financial apps failing to teach children the importance of concepts such as debt, credit, and financial commitments; and (vi) the added burden on parents that are left with the burden of monitoring their children's online financial activities. Part IV sheds light on the different global regulatory initiatives that aim to tackle some of the relevant concerns and policy implications. Finally, the Chapter concludes by calling for greater scrutiny of the gamification of finance trend and its impact on children.

One: Financial Education

Unlike some other jurisdictions, American financial regulation that deals with consumer protection issues has historically emphasized disclosure and free choice. The complexity of financial services like credit, insurance, and trading has, however, drastically reduced people's capacity to comprehend them—and the disclosure requirements are not enough to protect investors from making unwise decisions. (Guttentag, M. D., 2013, p 242). In an effort to address such complexities and empower consumers and investors, some legislators have started promoting financial education— for example with the 2021 American 'Student Empowerment and Financial Literacy Act'. . Likewise, in recent decades, global organizations have recognized the value of financial literacy and similarly begun initiatives to promote financial education. They do this by assessing how well different jurisdictions have implemented educational initiatives and then comparing the varying successes of outcomes accordingly. The objective behind such a push towards financial education is that it will enable people to become "responsible" and "empowered" market participants, and if possible reduce levels of anxiety and increase individuals' financial security. (FINRA, 2021).

So why not start with children? Indeed, educating the next generation about money, investing, and financial planning at an early age may be a useful strategy for improving financial literacy. However, there have not been enough well-designed and effectively carried out projects to raise financial literacy. For instance, a national initiative launched in the late 1990s to improve financial literacy among 12 to 17-year-olds was found to be ineffective a decade later, with findings that revealed severe deficiencies in financial literacy, including only 25% of participants knowing about fundamental concepts like inflation. Similarly, only 18 percent of respondents to a 2019 American National Foundation for Credit Counseling (NFCC) study expressed high confidence in their ability to save for retirement and in their current course of action. (NFCC, 2019). Furthermore, when asked about debt, a 2020 survey confirmed an in-debt way of living, finding that only 16% of American adults never had debt. Thus 84% do not know a different way of living and consuming. (NFCC, 2020).

Focusing on innovative ways to increase financial literacy earlier on, and teach children about money, Shark Tank billionaire, and a fan of the flourishing FinTech industry, Mark Cuban, famously explored in public forums the idea of letting children toy with crypto assets as a way of teaching them financial lessons. In particular, Cuban talked about buying Dogecoin, the volatile cryptocurrency that Elon Musk has been publicly backing, for his young son as an "educational" activity. (Locke, T., 2021). Similarly, Twitter co-founder, and Block (formerly known as Square) CEO, Jack Dorsey teamed up with entertainer Jay-Z (Shawn Carter) to launch The Bitcoin Academy at Marcy Houses, the public housing complex in Brooklyn, New York. As part of that initiative, "The Bitcoin Academy's website, which declares itself to represent "the future of money," detailed how “attendees would be given smartphones and mobile WiFi (MiFi) devices, which they may keep as needed,” and described how there “is also a “‘Crypto Kids Camp” for kids aged 5 to 17.” (Hoffman, J. 2022). Such educational initiatives founded by celebrities and businesspeople may seem be too stressful or extreme for some—especially given how volatile and less regulated the crypto industry has been in recent years—but in general, exposing children to handling money and educating them about saving and investing are not new or controversial concepts at all. Indeed, children’s financial education has been a topic of discussion long before there were digital assets to be found, and even before personal computers or the internet existed. In fact, in the 1960s Marry Poppins movie, the ultraconservative Mr. Banks teaches his children about investing properly by describing compound interest. Moreover, even governmental agencies have paid some attentions to children’s financial education, or at least the importance of it, with bureaus like the American Consumer Financial Protection Bureau (CFPB) developing online resources to support caregivers in teaching children about money in keeping with that more conventional method. Likewise, the U.S. Federal Deposit Insurance Corporation (FDIC) has developed a Money Smart curriculum for kids in grades PreK–2 that includes references, books, and connections for such instructional purposes. But children do not have knowledge of, or access to these resources, and in reality, many caregivers fail to adequately teach children about money despite the information available to them online, and the obvious necessity for them to do so. In fact, as it turns out, a 2014 APA study, “Stress in America,” revealed that only 37% of Americans actually talk to their family members and their children about money. (Bethune, S. & Brownawell, A., 2015).

Two: Toying with Money

Realizing the importance of early childhood financial education, and the business opportunity that accompanies it, FinTech companies as well as traditional financial institutions have in recent years started exploring this space and how they can profit from it. One of the first FinTech companies to target children was Greenlight, which was established in 2014, and within a few years achieved unicorn status, with a valuation of over $1 billion. Greenlight, which primarily makes money by charging families who use its services monthly membership fees, began by introducing a debit card for kids in 2017, and has since expanded to include a number of digital financial services for kids as young as six years old. (Haverstock, E., 2021). Furthermore, although utilizing financial apps on a smart device at the age of six may seem too young for kids, by that point they are seasoned smart device users. In fact, research has found that 30%

of American kids already play with digital devices while they are still in diapers. Similarly, the typical age of children owning and using digital devices continues to drastically drop all over the world as their daily screen time continues to grow, particularly during the COVID-19 pandemic. (Funnell, A., 2020; Marples, M., 2021). According to Nature's 2022 study, children "start using digital media devices early in life with US data suggesting a 32% increase in children's screen time over the last two decades. Children's screen time also increases with age with two-year-olds in the US having less than an hour of daily screen time and two- to four-year-olds having on average 2.5 h of daily screen time." But, "the COVID-19 pandemic and the associated lockdown measures have triggered an increase in screen time in many regions. In Spain, two out of three children under 48 months used smartphones and tablets daily during COVID-19 lockdown." (Bergmann, C., Dimitrova, N., Alaslani, K. et al., 2022).

Another FinTech company that very quickly realized the potential in targeting children early on by offering them financial services and products was Kwedit, a platform that gained notoriety during the 2008 financial crisis for being one of the first to be built on the Buy Now Pay Later (BNPL) business model. Kwedit, which sounds like how a young child might pronounce the word "credit," offered its users the Kwedit Promise System that enabled them to agree to pay later for digital items they wanted to get right away. Kwedit also encouraged those who could not pay now or later, to pass their newly acquired financial commitment on to someone else – like a parent or a more financially secure relative, using the 'Pass the Duck' option. After making a set down payment, users of BNLP, a short-term financing alternative, agree to pay for their goods or services in installments. In recent years, BNLP has gained much popularity, with major FinTech companies such as Klarna and others adopting BNPL as their business model. Regulators, however, have expressed some concerns about BNPL's rising popularity. For instance, the British government said in February 2021 that BNPL would be subject to Financial Conduct Authority (FCA) regulation after concluding that there was "a high risk" of harm to customers. Similarly, the US credit rating agency Equifax announced it would start recording BNPL plans that allow customers to make multiple payments as such plans make it more difficult to assess consumers' true financial capabilities and risk. The American Consumer Financial Protection Bureau (CFPB) also asked split-payment services for more information on their installment plans in late 2021, expressing concerns about consumers, and even the US credit rating bureau Equifax announced it would start recording BNPL plans that allow shoppers to make multiple payments, as such plans make it more difficult to assess consumers' real financial abilities and risk. (Packin, N. G., 2022, notes 226-233). But Kwedit's business model was not problematic just because of BNLP-related issues. In fact, the commitments made by children to Kwedit quickly turned into unenforceable promises, with no real consequences because users did not really have to pay anything – they were only incentivized to do so. In this way, apps like Kwedit basically made kids understand that it is okay to buy things one cannot afford, assuming that person might be able to pay for his or her purchases in the future, and if not, then no harm done. Indeed, Kwedit's financial lesson made children learn, firsthand, that it is okay to take on increasing levels of credit and debt, but not honor those financial commitments, and that is a horrible lesson (Packin, N. G., 2022, notes 226-233). Lastly, Kwedit's business model is designed in a manner that is manipulative to children – causing them to spend more – almost oppositely from the conclusions of the Marshmallow Test, which is one of the most well-known studies in social science, and examines children's impulsive reactions. In the Marshmallow Test, Stanford University graduate students gave youngsters a marshmallow, and told them that they could have another one if they could wait 15 minutes after finishing the first, and then left the room. (Mischel, W., Shoda, Y. & Rodriguzez, M. L., 1989, p 933). It is believed that children's ability to maintain their composure long enough to double their reward is a sign of future success in academic studies and later in their professional careers. Particularly, according to the study, those who resisted temptation in their adolescence were more socially adept, more forceful, and better able to handle life's setbacks. They took initiative, were self-reliant and self-assured. trustworthy and dependable, and they sought challenges rather than giving up in the face of adversity. The psychological profiles of those who struggled to maintain self-control during the Marshmallow Test were more problematic. They were more prone to avoid social situations in adolescence, be obstinate, indecisive, quickly irritated by difficulties, believe they are bad or unworthy, become frozen by stress, and be distrustful and angry of not receiving enough. (Goleman, D., 1995, p. 81-82). Therefore, while there is some disagreement regarding the study's conclusions, many people view passing the test as an indication of a promising future. (Oldfather, C.M., 2020, p. 226).

Fearful of being left behind by their FinTech competitors, financial services providers and banks slowly but surely started offering financial services and products to children. Among those are Fidelity Investments, which in 2021 shared its plan to give 13- to 17-year-olds debit cards, savings accounts, and even access to an investment service that would allow young teens to trade US-listed stocks, mutual funds, and ETFs (with their parents' supervision). Another big traditional financial institution that has started offering such digital financial services to children is Capitol One bank, which started offering children's bank accounts, as well as Bank of America, which began marketing bank accounts to children. (Packin, N., 2022).

Finally, the rise of DeFi made some commercial entities begin to comprehend the novel new business models and revenue prospects that lay in blockchain and digital assets, such as non-fungible tokens (NFTs). Briefly described, NFTs are digital assets that represent real-world objects such as art, music, in-game items and videos, but their legal status is not quite clear or as intuitive to most users yet. (Moringiello J.M. & Odinet, C.K., 2022; Frye, B.L., 2022). GameFi, a video game platform underpinned by blockchain technology and decentralized financial components, represents an example for one of these new business models. recognizing the revenue potential inherent in the innovative product—and which further has evolved into a growingly likeable idea in the gaming and blockchain industries. Ownership of many NFTs and related virtual items, including skins, characters, objects, and even parts of the game itself, is possible with GameFi. Additionally, some games award players with virtual coins in the form of game points, which have value only within the context of the game, while other games award players with genuine cryptocurrencies. This latter group of games, which has been dubbed "play-to-earn" (P2E), operates on a model that financializes everything. (Farrington, R., 2021; Yadav, O., 2022). Blockchain-enabled games that put the player first by changing the paradigm and enabling them to better understand the utility and worth of the assets they gained via gameplay and in-game purchases are what define this genre. Yet these games are also manipulative by design. First, experts believe that "regular gaming could go the way of the dinosaur due to the play-to-earn gaming model. After all, there are opportunities for parents to create a wallet and allow their children or teenagers to play these games in the future, which would give them the opportunity to do things they could not do after playing on an Xbox. For example, they could earn money to spend on real-world items, save for college, or save for the future." (Farrington, R., 2021). Second, there are ethical and legal concerns, which are impacted by this P2E trend, ranging from issues such as child labor, to rules regarding who should pay taxes on game labor and to what governments, to contractual law and violation of platforms' terms of service, to even developmental and educational aspects such as children's exposure to adult content like M-rated video games and privacy law issues. Then, last but not least, many digital games that are designed for children are based on the concept of loot boxes – "randomized virtual items that players can buy or earn through game play". Paid loot boxes have a significant financial impact on revenue streams and consumers, including the "pay-to-progress” and “pay-to-win” scenarios, where children players find themselves in “grinding gameplay loops unless they buy loot boxes.” Especially, as many of these children do not fully understand the cost of loot box transactions, and are susceptible to marketing tactics that lure them to buy more loot boxes or engage in problematic digital media use. (FTC, 2019).

But the fact that financial apps, such as Kwedit, or digital games, such as P2E loot box based games, are manipulative by nature should not be surprising. (Packin, N.G. 2020, p 361–62). It has already been several decades since the political scientist, Langdon Winner, published his controversial thesis about how technology is always created, by design, with a specific agenda. Winner's most famous example of this focused on the segregationist agenda embodied in the design of the New York States' bridges over parkways on Long Island, and in particular their low height, which was intended to prevent public buses from passing. “One consequence was to limit access of racial minorities and low-income groups to Jones Beach, Moses' widely acclaimed Public Park.” Winner cautioned, however, that negative consequences of specific technological designs can also be unintentional, like the failure to offer accommodations for disabled people, that has been the result of a “longstanding neglect.” (Winner, L., 1986, p 19-39). Digital apps and games, much like bridges, can be, and typically are designed in some manipulative way; and with children becoming more and more comfortable using their smart devices, spending time downloading apps, and toying with different online games, the notion of offering them FinTech and DeFi financial apps and games is becoming increasingly socially acceptable. The impact of these digital apps and games that are often manipulative by design, however, is problematic, and lawmakers should be aware of some key policy implications and issues that require their attentions, as further discussed in the next section.

Three: Policy Implications

Among the most important issues that require legislative attention are the following substantive challenges.

First, children have limited legal, economic, and social rights because of the presumptively justifiable paternalistic approach that society adopted toward them long ago. After all, children are minors and have legal guardians that handle all their matters, particularly their financial ones. The popular explanation for this is that children lack capabilities that are related to the justifiability of paternalism. Specifically, children do not have the same practical capabilities as adults do, and that limits their ability to make decisions and reason. Then, in turn, these lacking capabilities can lead to diminished legal power—most frequently noticed in the medical context where minors have less independent decision-making power—even when mature adults with the same level of capability might have decision-making abilities. (Godwin, S., 2020). Children's lack of legal capacity is also evident in the highly-researched area of children's mental and physical abilities. For instance, in many jurisdictions, children are not permitted to cross lights by themselves prior to reaching a certain age, given scientific studies that show that before age 14 most kids lack the ability to properly understand the risks entailed in crossing a busy intersection. (O'Neal, E. E. et al., 2018, p 18). Further, according to US contract law, which developed from English law, minors can enter into contractual agreements, but differently from mature adults they can choose to void the contract and avoid having to perform, or honor it. (Barnes, W. R., 2017, p 438-43). Given some of the issues associated both with children's judgement and the ability to cancel or avoid their contractual obligations, there are clearly challenges and complexities that arise with children investing, trading and using financial services and products that require careful regulatory attention.

Second, FinTech apps and games can expose and educate people, including children, about the value of money, investing, and even trading and the associated risks. However, such apps and games' ability to do so is largely connected to the gamification features incorporated in their systems. In recent years, digital gamified learning has become a popular instructional tool that is broadly used in educational environments. But like any tool, gamification has its advantages and disadvantages, especially in connection with finance and when used to target younger audiences. Indeed, as mentioned above, "gamified" investment apps such as Robinhood, which use behavioral psychology to encourage recurrent and often maladaptive trading activity received much public and media criticism, and rightfully so. One of the effects of gamifying the financial markets was a dramatic increase in retail investor participation, as many young first-time investors found such highly gamified financial apps to be frictionless and fun, and failed to appreciate that the stock market is a challenging place to earn easy money in, and that losing is never fun. (Li, Y., 2021).

Third, interactive "game-like" elements like point scoring, peer competitions, and game rules make children more obsessed with both online gaming and other game-like activities. E-Sports wagers are one of these connected "new hobbies" that appeal to kids, teens, and emerging adults inherently and can lead to gambling addictions. Additionally, similar to casinos, social media apps are also designed to make users lose track of time. However, unlike casinos, which do not have clocks or windows to divert users, social media apps use videos that start automatically and content feeds that can scroll indefinitely in an effort to keep kids glued to their smart devices. Put in more concrete, scientific terms, digital games can and do function like stimulants (think caffeine or cocaine) or "hard drugs" for children. This is the result of the dopamine released by the stimulation of electronics that hits youngsters especially virulently as their cerebral cortexes are not fully developed and do not yet enable them to feel satisfied with small doses or to properly self-regulate (Packin, N. G., 2021). Fourth, the idea that early financial education will assist young individuals to comprehend the seriousness of money is directly contradicted by the fact that digitally gamifying investing makes finance feel less serious, not more serious to children. In fact, gamification oversimplifies investing to the point where playing leads to inexperienced investors getting into serious trouble. Indeed, according to recent research, social media is the most popular outlet for investment research for young retail investors, who often browse TikTok and YouTube videos under trading-related hashtags looking for fellow app users tips.

Fifth, while social influence has always been instrumental in marketing, decision-making, and even economic behavior, the recent years' rise of the online social influence industry and its popularity have been extreme and very significant. This includes the growing involvement of celebrities and social influencers in the stock market, ranging from TikTok videos, to Roaring Kitty's call on Reddit to hold or buy stocks during the Gamestop 2021 meme stock saga, and even Matt Damon's ads to buy cryptocurrencies. However, children and emerging adults' financial choices are especially prone to the influence and manipulation of outside parties. Particularly, as they try to "keep up with the Joneses" and are especially concerned about their reputation, popularity and outside image. (Packin, N. G., 2021). Because of this, child-targeted advertising has become a multibillion-dollar industry in the U.S., with $4.2 billion spent on marketing efforts focused on children in 2018 alone. (Packin, N. G., 2022).

Finally, parents are already struggling to keep up with supervising their children's online activities. Enabling children to use digital financial apps will require much more monitoring effort because there are so many different things that parents need to be on the lookout for. For example, children can be overly generous with gifting their friends; they can borrow excessive amounts of money from friends; they can be taken advantage of; and they can attempt to appear richer than they are. Staying on top of their children's financial decision-making is difficult even for tech savvy or helicopter parents because of rapid technological innovations. (Packin, N. G., 2021).

Four: Around the World

The rise of FinTech digital apps and games for children that offer them saving, trading, earning, and investing services and possibilities is a concerning global trend, but it is one that for the most part, regulators and scholars have thus far largely ignored. But not everyone. Asian regulators, for example, have appreciated the importance of some of these issues—specifically expressing concerns about children's screen time and digital exposure as well as the GameFi trend. Jurisdictions in these regions—such as China, South Korea, and Japan—have crafted laws aimed at monetizing game tokens, which are already on the books.

China, one of the biggest global markets for gaming, has the strictest prohibition on children's digital exposure. The Chinese government set strict limitations on how long minors can play online video games. Chinese children and teenagers are therefore barred from online gaming on school days, and limited to one hour a day on weekend and holiday evenings, under government rules. (Buckley, C., 2021). Additionally, it has strict rules regarding GameFi, which is basically not allowed by Chinese law as it deals with virtual currency businesses such as crypto wallets, exchange, and trading of tokens. Indeed, in September 2021, the People's Bank of China (PBOC), China's central bank, banned all cryptocurrency transactions. The central bank cited the impact of cryptocurrencies on the environment and in facilitating financial crime in addition to posing a growing risk to China's financial system owing to their highly volatile and speculative characteristics. (Shin, F., 2022). Consequentially, all of China's tech giants have signed a self-regulatory pledge to prohibit speculation around NFTs. (Reynolds, S., 2022). Likewise, in Korea, particularly noteworthy is Article 32 of the Gaming Industry Promotion Act, which specifically bans game currency from being converted into cash, as the government is concerned about dangerous forms of games that are essentially gambling. (Reynolds, S., 2022). Similarly, Korea also has a form of soft web censoring on what the state deems illegal or subversive materials, and the Korean Game Rating and Administration Committee has already blocked the distribution of P2E games Infinite Breakthrough and Three Kingdoms Reverse from digital app stores by withholding their rating classification. The regulators sent an official request to Apple and Google asking them to block any additional registration of P2E games from their app stores, partly due to Article 28 of the Gaming Industry Promotion Act, which is problematic for the emergent industry as it forbids speculative acts, gambling and free gifts. (Reynolds, S., 2022). In Japan, P2E might not be permitted as well because most of the in-game actions would likely be considered gambling. Especially, as some games' mechanism could be viewed as something that would be regulated by Japan's Consumer Affairs Agency's Improper Premiums and Misleading Representations Act (IPMR). (Reynolds, S., 2022). Likewise, in the UK, legislators have enacted the Age Appropriate Design Code, which sets standards for digital services dealing with children's data. The UK legislation introduced major changes regarding children safety and issues related to it. For instance, the law forced the digital platform YouTube to disable its autoplay feature, and both TikTok and Instagram had stopped the ability for unknown adults to send minors direct messages. (Hirneisen, M., 2022).

American legislators have also attempted to advance legal initiatives on some of the issues discussed. However, these initiatives focused solely on the negative impact of social media on children and did not consider or address the economics of digital platforms, games and apps offered to children. These initiatives included four main directions of action. First, President Biden threatened in his 2022 State of the Union address that big tech companies were conducting "national experiments" on children and vowed to hold social media platforms accountable for their harm. (Ghaffary, 2022). Second, federal lawmakers have questioned and scrutinized senior tech executives about child safety. (Romo, V., 2021). Third, state attorneys general have been investigating Tech companies about their platforms, apps and games' design, which can have potentially harmful impacts on children. (McKinnon, J.D., 2022). Lastly, attempting to address the harmful effect that digital platforms, apps and games have on minors, some state legislators started advancing bills that could help minimize these harmful effects. (Deighton, K., 2022).

Conclusion:

The FinTech revolution has brought many advantages to the lives of financial consumers. However, the issue of children as potential investors and financial consumers, being exposed to digital engagement practices is a complicated and concerning one. Regulators must be aware of the challenges and complications involved with enabling children to save, invest, trade, sell, and transact via digital financial services. Particularly, as in most countries, technology is way ahead of the regulation, and the law does not have a readymade theory for trading off these children-related concerns. These issues also underscore the urgent need for scholarship situating these practices in theory and doctrine.

References

1. FINRA, (2019). The State Of U.S. Financial Capability: The 2018 National Financial Capability Study. 1, 2.
2. Bethune, S. & Brownawell, A. (2015). American Psychological Association Survey Shows Money Stress Weighing on Americans' Health Nationwide, *American Phycological Association*. https://www.apa.org/news/press/releases/2015/02/money-stress?utm_content=buffer187d9&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer
3. Packin, N. G. (Forthcoming 2022). *Hastings Law Journal*, Introduction.
4. Northwestern Mutual. (2018). 2018 Planning & Progress Study, Money: The Leading Source Of Happiness..And Stress. 3. The slideshow can be found under "Money and Emotions" at https://news.northwesternmutual.com/planning-and-progress-2018.
5. Coughlan, S. (2019). Pisa tests: UK rises in international school rankings. *BBC News*. 03 December. https://www.bbc.com/news/education-50563833.
6. Johnson Hess, A. (2020, May 14). US students scored behind Estonia and Poland on this financial literacy exam—try 2 questions for yourself. *CNBC*. Retrieved from https://www.cnbc.com/2020/05/14/us-students-scored-behind-estonia-on-this-financial-literacy-exam.html.
7. Stoltman, A. & Edwards, B. P. (2017, November 15). *Finra Governance Review: Public Governors Should Protect The Public Interest*. PIABA. https://piaba.org/piaba-newsroom/report-finra-governance-review-public-governors-should-protect-public-interest.
8. Pierce, T. & Williams, A. (2021, April 28). *Large Number of Americans Reported Financial Anxiety and Stress Even Before the Pandemic*. FINRA. https://www.finra.org/media-center/newsreleases/2021/large-number-americans-reported-financial-anxiety-and-stress-even.
9. Willis, L. E. (2008). Against Financial-Literacy Education. *Iowa Law Review*, 94, 197.
10. Elliehausen, G., Lundquist, E. C., Staten, M. E. (2007). The Impact of Credit Counseling on Subsequent Borrower Behavior. *Journal of Consumer Affairs*, 41, 2.
11. Jackson, H. E., & Anderson, S. A. (2007). Can States Tax National Banks to Educate Consumers About Predatory Lending Practices?. *Harvard Journal of Law & Public Policy*, 30, 844, n.51.
12. Unicef. (2018, June 15). *Every Fourth Child in Preschool Age Owns a Digital Device*. https://www.unicef.org/serbia/en/press-releases/every-fourth-child-preschool-age-owns-digital-device.
13. Hansen, S. (2021, May 18). *Investment Giant Fidelity Will Let Your Teen Trade Stocks—For Free*. Forbes. https://www.forbes.com/sites/sarahhansen/2021/05/18/investment-giant-fidelity-will-let-your-teen-trade-stocks-for-free/?sh=719b18884fe4.
14. Capital One. (n.d.). *Kids Savings Account*. https://www.capitalone.com/bank/savings-accounts/kids-savings-account/#id_accountdetails.
15. Bank of America. (n.d.). *Child Savings Accounts*. https://www.bankofamerica.com/deposits/savings/child-savings-accounts.
16. Haverstock, E. (2021, April 27). *With Debit Cards and Investing for Kids, Fintech Startup Greenlight Doubles Valuation to $2.3 Billion*. Forbes. https://www.forbes.com/sites/elizahaverstock/2021/04/27/with-debit-cards-and-investing-for-kids-fintech-startup-greenlight-doubles-valuation-to-23-billion/?sh=32c386d93aad.
17. Chandler, S. (2022, February 13). *Blockchain Games in 2022: Play-to-Earn, Gamification, Interoperability and Major Publishers*. Cryptonews. https://cryptonews.com/exclusives/blockchain-games-2022-play-earn-gamification-interoperability-major-publishers.htm.
18. Farrington, R. (2021, December 13). *Play-To-Earn Gaming Is Driving NFT And Crypto Growth*. Forbes. https://www.forbes.com/sites/robertfarrington/2021/12/13/play-to-earn-gaming-is-driving-nft-and-crypto-growth/?sh=600e1e7fc2dc.
19. Yadav, O. (2022, February 9). *What Is GameFi and Can You Really Earn Money Playing Video Games?*. MakeTechEasier. https://www.maketecheasier.com/what-is-gamefi/.
20. Thompson, C. (2021, May 12). The Untold Story of the NFT Boom. *The New York Times*. https://www.nytimes.com/2021/05/12/magazine/nft-art-crypto.html?searchResultPosition=1.
21. Magnuson, W. (2018) Regulating Fintech. *Vanderbilt Law Review*, 71, 1167.
22. Bain, B. & Schmidt, R. (2021). Gensler Targets Broker "Gamification" After Trading Tumult, *Bloomberg*.
23. U.S. House Committee on Financial Services. (2021, May 06). *Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part III* [video]. YouTube. https://www.youtube.com/watch?v=vX2X8xxHEns.
24. Lee, A. H. (2021, May 21). *Leveraging Regulatory Cooperation to Protect America's Investors: Remarks at the 2021 Section 19(d) Conference*. U.S. Securities and Exchange Commission. https://www.sec.gov/news/speech/lee-2021-section-19d-conference.
25. Seal, D. (2021, November 6). SEC's Roisman Wary Of Playing Into "Gamification" Fears. *Law360*.

26. Verlaine, J. A. & Banerji, G. (2021, January 29). Keith Gill Drove the Gamestop Reddit Mania. He Talked to the Journal. *Wall Street Journal*. https://www.wsj.com/articles/keith-gill-drove-the-gamestop-reddit-mania-he-talked-to-the-journal-11611931696.
27. Fitzgerald, M. (2021, March 31). Robinhood Gets Rid Of Confetti Feature Amid Scrutiny Over Gamification Of Investing. *CNBC*. Retrieved from https://www.cnbc.com/2021/03/31/robinhood-gets-rid-of-confetti-feature-amid-scrutiny-over-gamification.html.
28. Massa, A. & Alloway, T. (2021). Robinhood's Role in the 'Gamification' of Investing. *Bloomberg*. https://www.bloomberg.com/news/articles/2020-12-19/robinhood-s-role-in-the-gamification-of-investing-quicktake
29. Popper, N. (2020, July 9). Robinhood Has Lured Young Traders, Sometimes With Devastating Results. *The New York Times*. https://www.nytimes.com/2020/07/08/technology/robinhood-risky-trading.html.
30. Levintova, H. (2021, April 29). *Robinhood Promises Free Trades. Did Alex Kearns Pay With His Life?*. MotherJones. https://www.motherjones.com/politics/2021/04/robinhood-gamestop-free-trades-alex-kearns/.
31. Ann, M. (2022, May 3). *Banking Giant Truist Acquires Fintech Startup Long Game In Effort To Reach Younger Demographic*. TechCrunch. https://techcrunch.com/2022/05/03/banking-giant-truist-acquires-fintech-startup-long-game-in-effort-to-reach-younger-demographic/.
32. Buss, E. (2009). What the Law Should (and Should Not) Learn from Child Development Research, 38 *Hofstra Law Review*, 38, 18-19.
33. Buss, E. (2020). The Law's Role in Raising Children. *Ohio Northern University Law Review*, 46, 267.
34. Children's Online Privacy Protection Act (COPPA), Pub. L. No. 106-70, 112 Stat. 2681 (1998) (codified as amended at 15 U.S.C. §§ 6501-06 (2018)).
35. Haber, E. (2020). The Internet of Children: Protecting Children's Privacy in A Hyper-Connected World. *University of Illinois Law Review*, 2020, 1224.
36. Haber, E. (2019). Toying with Privacy: Regulating the Internet of Toys. *Ohio State Law Journal*, 80, 399.
37. Watson, C. F. (2021). Protecting Children in the Frontier of Surveillance Capitalism. *Richmond Journal of Law & Technology*, 27, 43.
38. Fowler, G. A. (2022, June 9). Your kids' apps are spying on them. Apple and Google just look the other way. Here's how we stop it. *The Washington Post*. https://www.washingtonpost.com/technology/2022/06/09/apps-kids-privacy/.
39. Kastenholz, C. (2021, May 17). *Gen Z And The Rise Of Social Commerce*. Forbes. https://www.forbes.com/sites/forbesagencycouncil/2021/05/17/gen-z-and-the-rise-of-social-commerce/?sh=78b5c0ba251d.
40. Guttentag, M. S. (2013). Protection from What? Investor Protection and the Jobs Act. *University of California, Davis Business Law Journal*, 13, 242.
41. HARRIS POLL, 2019 CONSUMER FINANCIAL LITERACY SURVEY (2019). The study can be downloaded here: https://www.nfcc.org/resources/client-impact-and-research/2019-consumer-financial-literacy-survey/.
42. HARRIS POLL, 2020 CONSUMER FINANCIAL LITERACY SURVEY at, 7 (2020). The study can be downloaded here: https://www.nfcc.org/resources/client-impact-and-research/2020-consumer-financial-literacy-survey/.
43. Locke, T. (2021, February 8). Mark Cuban on Dogecoin: No Intrinsic Value but 'I Bought a Few Dollars Worth for My Son'—It's 'Educational for Him'. *CNBC*. Retrieved from https://www.msn.com/en-us/money/companies/mark-cuban-on-dogecoin-no-intrinsic-value-but-i-bought-a-few-dollars-worth-for-my-son%E2%80%93its-educational-for-him/ar-BB1dvrUI.
44. Hoffman, J. (2022, June 18). *Jay-Z's Bitcoin Academy Is Far From a Hit*. Vanity Fair. https://www.vanityfair.com/style/2022/06/jay-z-bitcoin-academy-is-far-from-a-hit.
45. Bethune, S. & Brownawell, A. (2015). American Psychological Association Survey Shows Money Stress Weighing on Americans' Health Nationwide. *American Phycological Association*. https://www.apa.org/news/press/releases/2015/02/money-stress?utm_content=buffer187d9&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer.
46. Oldfather, C. M. (2020). The Inconspicuous Dhs: The Supreme Court, Celebrity Culture, and Justice David H. Souter. Mississippi Law Journal, 90, 226.
47. Haverstock, E. (2021, April 27). *With Debit Cards and Investing for Kids, Fintech Startup Greenlight Doubles Valuation to $2.3 Billion*. Forbes. https://www.forbes.com/sites/elizahaverstock/2021/04/27/with-debit-cards-and-investing-for-kids-fintech-startup-greenlight-doubles-valuation-to-23-billion/?sh=32c386d93aad.

48. Furnell, A. (2020, June 11). What We're Beginning to Understand About Preschool Kids and Their Digital Devices, *ABC*. Retrieved from https://www.abc.net.au/news/2020-06-12/pre-school-kids-digital-devices-internet-tech-safety/12338772.
49. Bergmann, C., Dimitrova, N., Alaslani, K. et al. (2022). Young children's screen time during the first COVID-19 lockdown in 12 countries. *Scientific Reports*, 12, 2015. https://doi.org/10.1038/s41598-022-05840-5.
50. Mischel, W., Shoda, Y., Rodriguez, M. L. (1989). Delay of Gratification in Children. *Science*, 244, 933.
51. Goleman, D. (1996). *Emotional Intelligence: Why it Can Matter more than IQ*.
52. Packin, N. G. (2020). Consumer Finance and Ai: The Death of Second Opinions?. *New York University Journal of Legislation & Public Policy*, 22, 361–62.
53. Winner, L. (1986). *The Whale and The Reactor: A Search For Limits In An Age of High Technology*, 19-39.
54. Godwin, S. (2020). Children's Capacities and Paternalism. *The Journal of Ethics*, 24, 307. https://link.springer.com/article/10.1007/s10892-020-09327-1.
55. O'Neal, E. E. (2018). Changes in Perception—Action Turning Over Long Time Scales: How Children and Adults Perceive and Act on Dynamic Accordances When Crossing Roads. *Journal of Experimental Psychology: Human Perception and Performance*, 44, 18. https://doi.apa.org/record/2017-17488-001?doi=1.
56. Barnes, W. R. (2017). Arrested Development: Rethinking the Contract Age of Majority for the Twenty-First Century Adolescent. *Maryland Law Review*, 76, 438-43.
57. Li, Y. (2021, December 22). Options Trading Activity Hits Record Powered By Retail Investors, But Most Are Playing A Losing Game. *CNBC*. Retrieved from https://www.cnbc.com/2021/12/22/options-trading-activity-hits-record-powered-by-retail-investors.html.
58. Packin, N. G. (2021, June 8). *Securities Trading For Children: Sound Investment Education Or An Early Gambling Addiction?*. Forbes. https://www.forbes.com/sites/nizangpackin/2021/06/08/securities-trading-for-children-sound-investment-education-or-an-early-gambling-addiction/?sh=5a4dd4ec56ee.
59. Marples, M. (2021, November 1). US Teens Use Screens More Than Seven Hours A Day On Average – And That's Not Including School Work. *CNN*. Retrieved from https://edition.cnn.com/2021/11/01/health/children-screen-time-increase-pandemic-study-wellness/index.html.
60. Moringiello, J. M. & Odinet, C. K. (forthcoming). The Property Law of Tokens. *Florida Law Review*. https://ssrn.com/abstract=3928901.
61. Frye, B.L. (forthcoming 2022). After Copyright: Owning NFTs in a Clout Economy. *Columbia Journal of Law & the Arts*. SSRN: https://ssrn.com/abstract=3971240.
62. Federal Trade Commission. (2019, August 7). *Inside the Game: Unlocking the Consumer Issues Surrounding Loot Boxes*. https://www.ftc.gov/news-events/events-calendar/inside-game-unlocking-consumer-issues-surrounding-loot-boxes.
63. Buckley, C. (2021, August 30). China Tightens Limits for Young Online Gamers and Bans School Night Play. *The New York Times*. https://www.nytimes.com/2021/08/30/business/media/china-online-games.html#:~:text=China's%20strict%20limits%20on%20how,under%20government%20rules%20issued%20Monday.
64. Shin, F. (2021, January 31). What's Behind China's Cryptocurrency Ban?, *World Economic Forum*. https://www.weforum.org/agenda/2022/01/what-s-behind-china-s-cryptocurrency-ban/.
65. Reynolds, S. (2022, February 1). GameFi Faces Regulatory Headwinds in Major Asian Markets, *CoinDesk*. https://www.coindesk.com/policy/2022/02/01/gamefi-faces-regulatory-headwinds-in-major-asian-markets/.
66. Hirneisen, M. (2022, April 20). California bill would require greater online protections for minors. *The Center Square*. https://www.thecentersquare.com/california/california-bill-would-require-greater-online-protections-for-minors/article_79fec192-c0b1-11ec-91da-af572ae2c059.html.
67. Ghaffary, S. (2022, March 1). Biden Threatens Big Tech Over Its "National Experiment" On Children. *Vox*. https://www.vox.com/recode/2022/3/1/22957507/biden-state-of-the-union-social-media-mental-health-children-accountability-frances-haugen.
68. Romo, V. (2021, December 8). 4 Takeaways From Senators' Grilling Of Instagram's CEO About Kids And Safety. *NPR*. https://www.npr.org/2021/12/08/1062576576/instagrams-ceo-adam-mosseri-hears-senators-brush-aside-his-promises-to-self-poli.
69. McKinnon, J.D. (2022, March 2). TikTok Faces Scrutiny in State Attorneys General Probe of Online Harms to Children. *Wall Street Journal*. https://www.wsj.com/articles/tiktok-faces-scrutiny-in-state-attorneys-general-probe-of-online-harms-to-children-11646251698
70. Deighton, K. (2022, February 18). Silicon Valley Faces Pressure to Redesign Children's Online Experience. *Wall Street Journal*. https://www.wsj.com/articles/silicon-valley-faces-pressure-to-redesign-childrens-online-experience-11645227819.