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Playing (with) the markets: Gamification and playfulness in brokerage platforms

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Abstract

In early 2021, millions of amateur traders managed to turn the direction of the markets against established Wall Street funds by heavily investing in GameStop stock. The event led to a proliferation of discourses on the role of brokerage platforms in the gamification of trading. Swimming against the current, the present paper reviews the different lines of argumentation deployed by these commentators while calling into question their usage of the concept of gamification. It does so through a comparative interfacial analysis of three major brokerage platforms, showing that they all share common representations of the markets, which do not mobilise game-like elements. Faced with a lack of empirical evidence for the gamification hypothesis, we propose instead to explore the autotelic logics of play that emerge between the user(s) and the media object(s).

Keywords

Brokerage Platforms; eToro; DeGiro; Plus500; Gamification; Play; Playthings.

1. Introduction

On January 25 2021, a post on r/ WallStreetBets, one of Reddit's largest forums dedicated to "retail" trading (intended for individuals buying and selling stocks), has launched a community coordinated "short-squeeze" of the GameStop retail chain stock. The result was a novel power exerted over financial markets, including major financial loses incurred by established institutional actors who invested in GameStop losing value over time ("shorting"). On February 23rd 2021, the chairman of the European Securities and Markets Authorities (ESMA), Steven Maijoor, delivered a statement to the EU Parliament on the short squeeze and its ramifications, where he singled out gamification as one of the driving causes of the market run [1, p. 3]. His American counterpart, Gary Glenser from the U.S. Securities and Exchange Commission **(**SEC), would quickly follow suit during the congressional hearings around the event. Glenser presented seven factors leading to heightened market volatility, with "gamification and user experience" being on top of the list [2]. Here and throughout most of the section, the phenomenon seems to be understood primarily as an interfacial feature (e.g. [3]), in what Deterding names the "nudging" rhetoric of gamification.

The events of January 2021 revealed structural deficiencies in the regulation of online brokerages in both sides of the Atlantic, prompting action from the European Commission [4], the American Congress [2] and the self-regulatory association of American brokers [5]. Game-like elements in mass available trading software were at the core of this regulatory drive [6]. In this section we review the two main lines of argument deployed to criticise the supposed gamification of trading, namely that these platforms encourage financial behaviours standing against the best interests of inexperienced traders (*consumer welfare)*; and that the higher trading volume from retail users significantly dilutes the markets' capacity for price-discovery and liquidity allocation (*market quality*).

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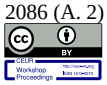

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In their extensive review of the FinTech discourses on gamification [7] show that they hinge on a *generational perspective* that sees game-like elements as crucial to include millennials in the financial systems. The argument goes like this: the coming of age of those born between 1980 and 2000 was characterised by both the 2008 Global Financial Crisis and the massive development of digital technologies [8]. Millennials are the first "digital natives" while also sharing a distrust of traditional financial services. Gamification is presented as an answer to this conundrum, using the logics of games to appeal to the rational pleasure-seeking impulsions cultivated by digital platforms, and directing that energy into a financial sector [7, p. 10]. These discourses present gamification as an effective method to foster financial literacy and inclusion, necessary to achieve full citizenship within the neoliberal paradigm [9]. Far from being a mere sales pitch, this perspective was embraced by political and legal institutions, that have actively encouraged the development of FinTech platforms (REFS).

A more critical approach accepts that gamification will increase financial inclusion, but warn that it can come at the cost of the users' best interests. The entire democratising drive is premised on including those who were previously uncatered to by traditional financial institutions [10], which also means that they tend to be unsophisticated investors with little knowledge of the markets. The inclusion of features like personalised recommendation algorithms or push notifications encourage users to trade extensively, reacting to the stimuli put forward by the platform and engaging in trading strategies that are very unlikely to yield benefits in the long run [11, 12]. Thus ethusiastic trading without professional knowledge and tools produces the opposite outcome for novel traders [13, 14]. At the same time, excessive trading disproportionately benefits the platform services, who obtain a rent through each trade that they intermediate. It is therefore in their best interest to develop gamified features that increase user engagement [15]. This perspective postulates that rather than fulfilling their duty of care towards novice investors, trading platforms cynically encourage them to engage in behaviours contrary to their own interests through a series of gamified nudges.

The consumer-welfare argument certainly is the most compelling, particularly when considering the stories of novice investors losing everything through a series of bad deals (REFS). However, a more economically oriented line of argument has also flourished over the last year. The number of retail investors has been on the rise since 2012, a dynamic further accelerated by the COVID-19 pandemic. As of 2020, even before the GameStop Short Squeeze drove massive attention to these services, retail investors were already moving 20% of the total U.S. equities trading volume [16]. The economical critique considers their (gamified) actions as "noise" [17], which do not reflect coherent strategies. When retail traders start to command a significant part of the daily volume, their noise can affect the markets' capacity to discover prices and allocate capital. According to legal scholar James Fallows Tierney [18, pp. 34-35],

> the combination of zero-commission trading and gamification may distort price discovery processes by increasing both price movement and volatility in the stocks most popular among retail investors. […] Gamification practices can capture retail investors' attention and thereby induce trading in stocks for reasons—like the payoff that the intermediary receives from generating this order flow— that are unrelated to the "value" the investment offers.

The market-quality argument against the gamification of trading uses similar evidence than the customer welfare one but pointing at wider ramifications. "Noise" trades are conceptualised as both harmful for discrete individuals, and actively hindering the markets' social function. An appealing interface might look enticing, but it could wreak havoc on our market-based society.

The recent explosion of research and regulatory endeavours on gamified trading proves beyond doubt that this is a salient issue in Western economies. However, much of the work relies on the American day-trading platform Robinhood as the main object of study. While the Californian platform has certainly experienced considerable success since the mid-2010s, it remains based on the United States and has failed to expand to other markets (REF). In Europe, a number of different platforms have emerged, with offers better

adapted to EU regulations, both in terms of offer[2] and customer protection. These platforms were actively involved in events such as the GameStop Short Squeeze, which makes it even more puzzling that the head of the ESMA only mentioned Robinhood by name in the statement that opened this section [1]. It is also worth mentioning that Robinhood's User Experience Design (UX) contains some of the most explicit gamified elements, such as free stocks and a slot machine simulator, which are largely absent from the majority of services. Perhaps more importantly, Robinhood's business model is based on Payment For Order Flow (PFOF), an approach that allows the platform to redirect the trades being made on the app to third-parties for execution. While some European services, like the German TradeRepublic (REF), use PFOF, it is significantly less present in the EU than in America. It is illegal in some member countries, such as the Netherlands [21] and the European Commission has indicated that it will ban it in all the Union soon [22]. Thus, putting too much emphasis on Robinhood as the only case study risks limiting our understanding of gamified trading beyond this specific platform, particularly when considering the overall FinTech promise to "democratise finance" [23].

On a more substantial level, the current literature tends to focus too much on UX design rather than posing deeper questions about the nature of games and play as reflected in broader approaches to gamification. This choice can be explained in practical terms: understanding trading as entertainment [24] is considerably more challenging for regulators than seeing it as a profit-seeking venture [18, pp. 21-22]. Yet, these considerations still leave us with a blind spot when it comes to defining the grammars of play mobilised by these platforms. As [6, p. 725] briefly mention when arguing against regulation that exclusively focus on software affordances: "games in general are not identified by the presence of particular features or elements, but by a Wittgensteinian "family resemblance" to other games". While we do not fully share their analytical approach, we do agree that definitions of gamification relying on normative interpretations of software design choices are both scholarly shallow and easy to circumvent.

While pro-gamification perspectives have been met with approval in professional sectors [7], the recent development of critical perspectives seems to indicate that *the times they are a-changing*. The extensive growth of retail trading in the last years can be indicative of further financial inclusion, but its price may have been too high. Unsuspecting traders have lost huge quantities of money, and market devices have been put under pressure, during an already challenging economic environment due to the pandemic. However, for these critiques to land with further strength, more diverse case studies must be put forward and sophisticated understandings of play are needed.

2. Methodology

To analyse the presence of game-like elements in trading platforms, we applied a walkthrough approach to eToro, DeGiro and Plus500, prominent European retail trading platforms chosen based on popularity and complexity. From the three, eToro is by far the largest, with over 20 million users across five continents [25], DeGiro and Plus500 have more modest userbases, counting 630.000 [26] and 430.00 [27] respectively, at the time of writing. Still, these numbers position them as some of the most popular platforms in the entire field. Out of the three, DeGiro is the most complex service, requiring users to have some financial knowledge before investing and presenting itself as a allowing individual customers to access the same operating logics as professionals [28]. Plus500, by contrast, aims at providing "simplified, universal access to financial markets" [27, p. 9], by exclusively focusing on a particular product: Contracts For Difference (CFDs). eToro stands somewhere in the middle of the two, offering a large range of products to their clients, and championing a social media inspired aesthetic.

Originally developed in the field of Human Computer Interaction to test usability, walkthroughs have recently been reconceptualised by new media scholars seeking methodologies that allow in-depth engagements with apps [26, p. 10]. Despite their relative novelty, several distinct approaches have already been developed (e.g., [29]); here we decided to follow the post-phenomenological approach mapped out by [30, p. 3] James Ash, Ben Anderson, Rachel Gordon and Paul Langley. This

[2] Perhaps the most salient example is the widespread adoption of Contracts For Difference (CFDs), a type of derivative product allowing traders to bet on the course of a particular stock without owning the underlying asset [19], and the possibility of trading in Forex [20].

version of the method stresses the ways in which "interfaces modulate user action", focusing on the different units that compose the interface as a whole. By doing so, we were able to interrogate the brokerage platforms' interfaces as "assemblages of objects that are positioned and spaced in relation to one another in order to transduce qualities for both other objects in the interface and the user engaging with that interface" [31, p. 31]. Rather than analysing an interface as a complete and finished system, it stresses the relationality of its parts, and how they are individually leveraged to generate a response from the user.

As part of the walkthrough methodology, one of the authors traded daily on all three platforms throughout February and early March 2021. They constituted an investment portfolio based around markets available in all three platforms and moved them around to test the different interfacial configurations made available by the platform[3]. Rather than trying to emulate what an average user would do, they set out to explore the interface without taking into consideration any given trading strategy, instead focusing on the units mobilised by the interface at each time. Since our goal was to investigate the common denominators present in all platforms, we did not pay particular attention to features specific to each service, like the capacity of making public posts on eToro, or DeGiro's combined orders. This is consistent with [32, p. 8]'s strategy to focus on certain aspects of the interfacial experience while accepting that others might not be part of the final research output. In using the platforms, we sought out specific interfacial elements that conformed (or not) with previously outlined understandings of gamification, namely: interactive elements that increase engagement based on extrinsic motivations. Particularly, we examined how the amalgamation of design features generate high-level affordances, "the kinds of dynamics and conditions enabled by technical devices, platforms and media [...] the kinds of communicative practices and habits they enable or constrain" [33, p. 245). We will argue here that the high-level affordances of brokerage platforms are destined to generate *legibility* and reduce *friction.*

3. Legibility and Friction in Retail Trading

Despite the understandable differences in commercial positioning and brand identity, eToro, DeGiro and Plus500 share a core approach to trading that is premised on their similar business model. As closed platforms, their goal is to develop an interfacial experience that multiplies transactions, which necessarily requires a heavy, yet indirect, management of both information and user interaction [34, p. 22]. Our research showed that these two factors were central to the user experience with the platform yet had little if any connection to game-like elements. Instead, they combined highly visual elements, easily available texts and graphics, pop-ups that take little time to interact with, and tacit fillings of information. The amalgamation of these features generates two crucial features. On the one hand, the markets become legible even for the less financially literate user; on the other, the potential frictions [31] emerging at the moment of putting cash on the line are systemically reduced.

The most salient interfacial element of all three platforms were their spectacular displays of dynamic pricing, meaning the modulation of the "commercial value of a product or service based on perceived market conditions" [35, p. 4]. Each platform developed a similar approach to price display, as exemplified by fig.1. Users are constantly subjected to a very visual arrangement of information, in which price variations are identified through green or red flashes, building on traditional trading floors visuals. It is easy to gain a sense of the general direction of a market through a quick glance to the screen, and the use of vivid colours leaves no room for misunderstanding. This approach to price variation has two main advantages. It directs the user's attentions to a couple of factors that are crucial for their engagement with the platform, namely the prices at which they can buy or sell positions, and the changes of the market on a given timeframe. By constantly updating prices, they provide a sense of inclusion in a high-speed world where things are constantly changing. It is common wisdom that investing in the financial markets is a matter of speed and timing [36]. The visual exaggeration of market shifts gives users

[3] Out of privacy concerns, the screenshots of eToro and Plus500 reproduced on this piece were taken in the platform's demo mode, which allows user to trade with an inexistent currency. DeGiro does not have this function, so the amounts traded where hidden when necessary.

the sense that they are active agents in the interconnected world of international finance.

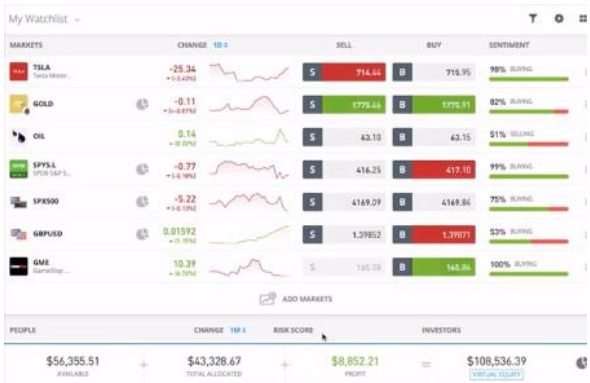

Figure 1: Price variations on the watchlist screen of eToro

The initial visual inclusion is then completed by the platforms' complementary offer of financial news to all their users. Each one of them have a page devoted to each available security, providing general data about its performance. These market profiles contain basic information, including their price, variations on different time frames and, if they are related to a company, their market cap. Popular securities often have their own news aggregator, that collects news articles on the security in real time. These small reports offer a condensed overlook into the behaviour of a stock, which are both easier to understand than complex technical profiles, and considerably easier to access, since it only requires two clicks to go form the home screen to a security's page. The information offered by the platforms cannot be described as pathbreaking in any meaningful way: anybody with an internet connection can find the same data on websites like Yahoo Finance, The Motley Fool or MarketWatch. Their direct integration within the interface, however, is crucial to lower the threshold to interact with financial information. At the same time, the organisation of information shows the priorities of the platforms: as brokerages, they are mainly interested in pushing the users to trade. Information is thus structured around securities, rather than providing a sense of the macro-trends in the markets, as more advanced software like the Bloomberg Professional Services would do. By adding a news-aggregator feature to their activity as brokerages, these services are fully leveraging the possibilities of the platform structure, integrating different, formerly distinct, elements into one experience.

The spectacular display of pricing variations and the easily-accessible information on securities are part of the high-level affordance that we call "legibility". One of the main challenges that brokerage platforms face is the intrinsic complexity of financial markets. As critical perspectives on finance have noted time and time again (e.g. [37]), the alienating nature of financial information derives both from the intrinsic complexity of an international infrastructure and from an ideological drive to keep the markets' inner workings as complex as possible. Without necessarily affording more clarity into those inner workings, brokerage platforms need to reduce that alienation. If we were to follow the gamification hypothesis, this reduction would entail the usage of game-like elements. However, in reality, they generate legibility through visual exaggerations of market trends and easily-available financial information, all of which are displayed in the familial environment of a platform. Legibility does not emerge from game elements; it emerges from carefully curated access to information.

The second element that brokerage platforms need to manage is friction. After [32, p. 3], we understand friction as "bodily and technical obstacles or hesitancies that interrupt, slow or stop a user from completing a task within a digital interface, such as choosing a service or buying a product". This friction is particularly present during thresholds, the "necessary moment or point in interfaces that a designer needs to encourage the user to cross or move beyond. Always involving some kind of movement, thresholds are occasions of discontinuity within an interface" [31, p. 6]. If generating legibility as a high-level affordance is necessary for brokerage platforms to get users to interact with the financial markets, reducing friction to a minimum is fundamental to get them to trade. As mentioned in above, the business model of these services is based on exploiting the spread, the more users trade, the more revenue is generated for the platforms. Behavioural economists have pointed out (e.g. [11], [24], [38]) that users of brokerage platforms tend to trade considerably more than other agents; we argue that this is due to the interfacial reduction of friction.

Entering a trade is the most obvious example of a threshold. To reduce potential hesitancy, the three platforms decided to use a pop-up system whereby the object enabling trading appears superimposed to the screen in which it was opened (fig. 2). eToro and Plus500 go as far as to automatically propose a certain number of stocks

(known as "position") to the users, algorithmically designed to fit their profile. Some basic variables are included in these screens, such as the possibility to automatically close a position in case of loses or earnings surpassing a certain amount. Once the user has entered the values that they would like to purchase or sale, they only have to click on a big – distinctly coloured - button to execute the trade. Users are not able to decipher from any of these screens who they are trading with and how the positions they bought will become theirs. The use of pop-ups and the underlying presence of other screens when the deals commence present the central activity of the platform - trading - as a relatively minor activity. Far from being the central interfacial experience, as one could expect, it is presented as a formality that is not meant to cost too much time, implicitly assuming that users already know what they want when they open a trading window. By doing so, the platforms reduce friction at a core moment of engagement (committing one's money to the market) and integrate this crucial aspect into the overall flow of the interface.

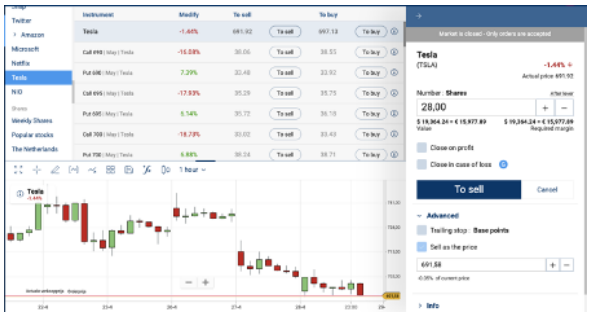

Figure 2: Trading screen opened to buy a position on Tesla, on the right side of the interface, in the Plus500 desktop version.

The same streamlined approach characterises the deposit of funds. All platforms accept several forms of payment, including PayPal, iDeal (regional Dutch e-payment service), bank transfer and credit card wiring, and they all have predetermined amounts that can be automatically charged. Plus500 automatically suggested to deposit 500€, while eToro prefilled the form for the value of 1000€; DeGiro did not have a prefilled form, but had buttons to add 1000€, 2000€, 5000€ and 10000€. This is particularly interesting when considering that DeGiro, as opposed to the other two, does not require users to deposit a minimal amount to trade: while it encourages newcomers to invest up to 10000€, the same users could access the same functions with as little as 20€ or even 1€. Depositing money is the biggest threshold for retail trading platforms, the moment in which users decide to put their cash on the line. One could think that these screens would be the most detailed ones, but as fig. 3 shows, they are some of the most understated, with bare minimal elements. Once again, the specifics of the transaction are rendered invisible by the interface, and users are only required to acquiesce or slightly modify parameters that have already been chosen for them.

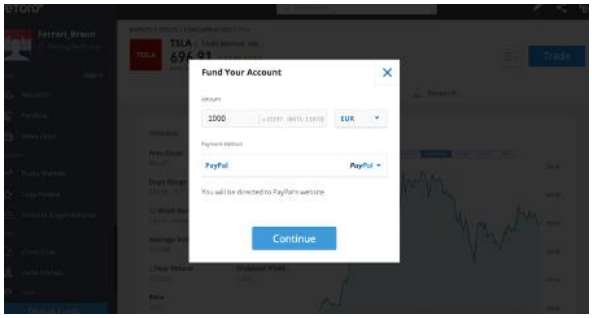

Figure 3: Deposit screen in the eToro desktop version.

By generating legibility and reducing friction, brokerage platforms create an interfacial regime in which anybody with a passing knowledge of finance can engage with the markets. This drive to popularise access to finance, removing knowledge and operational barriers, is at the core of the FinTech business model [37]. However, as opposed to what the proliferation of discourses on the gamification of trading may led to believe, game-like elements are altogether absent from the core interfacial of these platforms. Confronted with a lack of empirical evidence, the validity of these discourses is called into question, forcing us to consider a different approach to their playfulness.

4. Conclusion

The GameStop Short-Squeeze highlighted the role of brokerage platforms in amateur trading. Hardly a week has gone by in 2021 without a new type of financial scandal containing a conspicuous element of playfulness. Heated trading of stock in companies like AMC Entertainment or BlackBerry among retail investors [40], the phenomenon of so-called "shitcoins" [41], or the exponential appreciation of Bored Apes Non-Fungible Tokens [42], all seemingly combine into a series of "gameful" interactions with the financial markets. At the same time, a continuous

critique has been levied by industry and academics alike regarding the hazards of such practices to both amateur investors (*consumer welfare*) and the established financial flows as a whole (*market quality*) Yet, as our comparative research of eToro, DeGiro and Plus500 shows, rather than gamefulness per se, the apps excel at the management of the legibility of financial markets, through the friction (slowing down or speeding up) certain aspects of the trading experience.

While gamification seems like a popular (and somewhat populist) explanation of the apps' success, the resulting picture is more complex. Instead, the aforementioned apps allow for a form of collective power exertion of the financial markets by presenting retail traders with the information and capacities up until very recently reserved for major institutional players only. If any, instead of providing extrinsic rewards contingent on the apps logic, the retail traders "level up" by "playing" the markets correctly.

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