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An empirical approach assessing the impact of financial product innovation towards investors' risk adjusted return: An event study technique

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Abstract: The purpose of this study is to explore new financial product's impact on the behaviour of individual investors. To analyze investors' risk and return expectations, this article investigates trading volumes before and after the introduction of financial product innovation. An event research technique was used to gather data from the National Stock Exchange. Data was analyzed using descriptive statistics and the Sharpe ratio approach, which were provided by different investors. The research results highlight that individual investors' overreaction behaviour is brought out by financial product innovation. Furthermore, the study's results imply that rising trading volumes are not entirely explained by updated risk-adjusted returns and that new financial products lead to excessive trading by investors and lowering returns. Higher trading volumes are not explained by better risk-adjusted returns. Young investors often respond irrationally to information offered by financial advisors, resulting in short-term gains at the expense of long-term gains. The study demonstrates that the development of innovative financial products does not always result in investors' long-term prosperity. Worse outcomes and excessive trading could follow from it. The paper concludes by providing various real-world implications that the benefits and drawbacks of innovative financial products should be spelled out in detail by financial institutions and representatives. This research contributes to the implementation of individual investors' overreaction behaviour that is brought out by financial product innovation. It highlights that higher trading volumes are not explained by better risk-adjusted returns.

Keywords: financial product innovation; returns; risk adjusted returns; structured financial product; trading volumes

1. Introduction

The introduction of new financial products and instruments has been pivotal in shaping modern trade volumes, dispersing risks more equitably, and providing enhanced accessibility for investors (Chen et al., 2020). The creation of new financial products was acknowledged as a driving factor behind trading volumes that spread risks and repaid more fairly and was also viewed as readily safe (Chaudhry et al., 2020). Fintech innovation has been critical in various circumstances and is predicted to continue to be so (Dabbeeru and Rao, 2021). Financial product innovation is a dynamic and significant phenomenon that must be regularly assessed in order to determine its positive and negative influence on the trading behaviour of investors (Budish et al., 2019).

The creative aspect of a financial product contributes to both increased earnings and decreased risk. Financial product innovation has become a vital 'competitive

sword’ for stockbroking companies, helping them distinguish themselves from their rivals and enhancing their ability to provide answers to their customers’ needs (investors) (Arun and Kamath, 2015). Almost unanimously, academics agreed that financial product innovation over the last several decades has contributed significantly toward expanding the pool of available credit for individual investors, businesses, and the federal government (Khraisha and Arthur, 2018). As a result of the development of new financial products, underlying hazards such as market and interest rate risk and credit and liquidity risk have been less widely disseminated (Crouhy et al., 2014; Lumpkin, 2010; Sinha, 2012). It has long been observed that new financial products are often developed in the wake of economic crises and shortages. Innovation in financial products has a direct influence on the long-term profitability of the financial markets by increasing the rewards received by the financial agents who promote them.

New opportunities for the most innovative and savvy financial organizations have opened with artificial intelligence (AI), distributed ledger technology and open standards.

Historically, new financial products emerge following economic crises, aiming to enhance long-term profitability by boosting rewards for financial intermediaries. Yet, the complexities introduced by advancements like AI and distributed ledger technology challenge investors, pushing them to make costly information-gathering efforts, which can hinder their analytic and decision-making abilities (Frame and White, 2014; Baranga, 2017). This can lead to pre- and post-contractual opportunism and the risk of suboptimal outcomes for uninformed investors (Blundell-Wignall, 2007). Some of these innovations have been enlisted below (Global Finance Magazine - Best Financial Innovations 2023, 2023) in **Table 1**.

Table 1. Top financial innovations, 2023.

Innovation	Company	Year
InfoNina—AI-powered conversational system with a speech analysis platform	Alior Bank	Early 2021
Georgian Speech Technologies—Natural Language Understanding tool	Bank of Georgia	March 2023
Camelot Shorter Tenor	Citibanamex	June 2023
Digital transformation program	Bank ABC	Early 2022
Renewable energy blockchain trading platform	CTBC Bank	September 2022
Compliance Aware Token Framework (CATF)	Securrency	November 2022
Robotic process automation (RPA)	Banka Kombetare Tregtare Kosove	August 2022
Broker 2.0 project	Eurasian Bank (Kazakhstan)	Mid 2022
Advisor Match	Merrill Wealth Management	September 2022
Payment Manager	Bank of Georgia	Mid 2023
CRDB Bank’s tech-talent-as-a-service program	CRDB Bank	2022

Current and future investors are stretched to make costly attempts to acquire information that may not be immediately advantageous for the essential abilities of analytic, interpretation, selection, and decision-making connected to buy. Many academics have noted this phenomenon (Frame and White, 2014). Current and future investors are stretched to make costly attempts to acquire information that may not be immediately advantageous for the essential abilities of analytic, interpretation, selection, and decision-making connected to buy. Many academics have noted this phenomenon (Baranga, 2017). As a result, the danger of pre and post-contractual opportunism by financial intermediaries toward investors is unavoidable in the invention of financial products. This is directly connected to the informational loss of the latter. Financial innovation, despite its long-term profitability, increases the likelihood of uninformed and suboptimal results (Blundell-Wignall, 2007). Most of the academic works of literature reveal that the crisis started in 2007–2008 has been blamed on financial product innovation that has gone amiss. The financial boom before this crisis developed new and complex structured financial products such as credit default swaps, collateralized debt obligation derivatives (Budish et al., 2019). The major problem of this kind of structured financial products was that those often inaccurately priced and not transparent to the ultimate investors.

Because of this hindrance, the question remains associated with structured financial products that could be seen as financial innovations? The introduction of structured financial products indeed concedes investors to handle their financing consumption decisions better (Parpaleix et al., 2019). The prospects to invest in new investment avenues for individual investors, and to choose different risk returns profile, develop the new markets for investors (Budish et al., 2019). Structured financial products reduced transaction costs because of entirely new baskets of investments packaged into single structured financial products. Technological upgradation like speedy Internet connections for households' investors has also added towards the expansion of the structured financial products market. One another benefit of a structured financial product is that the commission is offered at a lesser rate by financial agents in order to increase trade volumes for that particular product (Yao et al., 2018). Information irregularity between financial intermediaries and private investors might also be the driver of the innovation of structured financial products. It argued that even though these structured financial products have seen as momentary positive effect on the business of the issuing financial instruments, it is not apparent whether the same applies to investors who invest in these instruments, it could be feasible that individual investors generally trade excessively, pay higher commissions and are finally in worse extent (Tufano, 2003). Also, there are instances found that investors who trade through online software or other online platforms for trading, trade excessively (Odean, 1999). He marks that overreacting trading behavior can be unfavorable for an investor because anticipated trading returns are inadequate to negate the costs of trading (Parpaleix et al., 2019). Other authors also explain in support of this that a process innovation such as Internet use can, in some way, increase investor's overreacting trading behavior and trading volume, respectively, the same might apply to financial product innovations as well (Frame and White, 2014).

Economic and financial crises are most often considered to be a major setback for developed and developing nations alike because it erodes significant gains made

at economic growth and development. The 2008–2009 global economic and financial and, recently, the 2016 global slow growth heralded the restriction of major sources of internal and external finance needed to augment investment and boost growth, particularly for developing nations (Hinson et al., 2019; Tidjani, 2020). According to da Cunha et al. (2024) extreme climatic events have been observed more frequently than has become a concern all over the world. Though assessing the readiness of Governance, Risk, Compliance (GRC) innovation in disaster management through risk management mitigation, supporting infrastructure, and developing an integrated GRC implementation development plan was highlighted (Supratikta et al., 2024). Nevertheless, these unfavourable economic conditions present opportunities of disruptive natures to help developed and emerging economies create economic shock absorbers in two key areas. (Demir et al., 2020; Frost, 2020).

First, these crises have generated disruptive forces and reforms of the international financial architecture and the greater awareness of need to increase financing options or alternative for investment projects (Eguren-Martin et al., 2020). The global economic crisis of 2008 exposed the weaknesses of the traditional financial institutions and consequently led to the rise of informal financial institutions and financial start-ups (FinTech) to meet the fast-growing financial needs of the private sectors, particularly small and medium-sized enterprises (SMEs) and or micro-entrepreneurs. According to World Economic Forum (2017), these new entrant into the financial system are challenging the system, promising to swiftly redesign how financial services are structured, provisioned, and consumed.

Another consequent disruptive outcome of the global economic crises, especially for developing economies, is the diversification of export markets from natural commodities to commodities that support growth and thus reduce vulnerability to external shock (Al-Mansour and Al-Ajmi, 2020). According to Anand and Mantrala (2019) and Chen et al. (2017), these commodities are disruptive innovations produced by SMEs or micro-entrepreneurs. This is possible because micro-entrepreneurs tend to benefit over their economic size rivals due to ease of adjusting and withstand these economic conditions because of their flexible features (Dalitso and Peter, 2000; Ernst and Haar, 2019; Sykes et al., 2016). However, it is worthy to note that young micro-entrepreneurs are driving force behind this disruption due to the trend of transition of young people from informal entrepreneurship.

Disruptive financial innovations are propelled by new technology, new rules and changes in economic development like economic behaviours. According to Frost (2020), the impetus behind financial innovation is motivated by the maximisation of profit within a free market. While bank loans offer moderate returns for traditional financial institutions and is quite adequate for low to moderate micro-entrepreneurs, alternative financial innovations alter this conventional risk sharing mechanism (OECD, 2018). These instruments aside traditional financing options consist of multiple and competing financing options for micro-entrepreneurs, including asset-based financing, rotating savings and credit associations (ROSCAs), peer-to-peer lending and crowdfunding (debt and equity). However, it is important to note that not all are suitable and of interest to all micro-entrepreneurs. It therefore depends on the determinants of their financing options which includes size, stage in the business life cycle, risk-return profile, management structure and financial skills.

2. Theoretical framework

2.1. The definition and origin of financial innovations

The role of innovations in the economic development is indisputable as shown in **Figure 1**. The general definition of innovations explains that they appear when new ideas, solutions and instruments are implemented in order to change the conditions of business entity and to improve its situation. The application of innovations increases the competitiveness of a business entity and creates value for its owners (Dabic et al., 2011; Hejduk et al., 2010). The sustainable growth of the modern business entity is impossible without the proper innovation management accompanied by the knowledge, information, reputation and trust management. At the beginning, the term “innovation” was used to describe the changes in the technological solutions, creating new combinations of productive means, generating the above-the-average rates of return, and thus enhancing the dynamic development of the overall economy (Targalski, 2006).

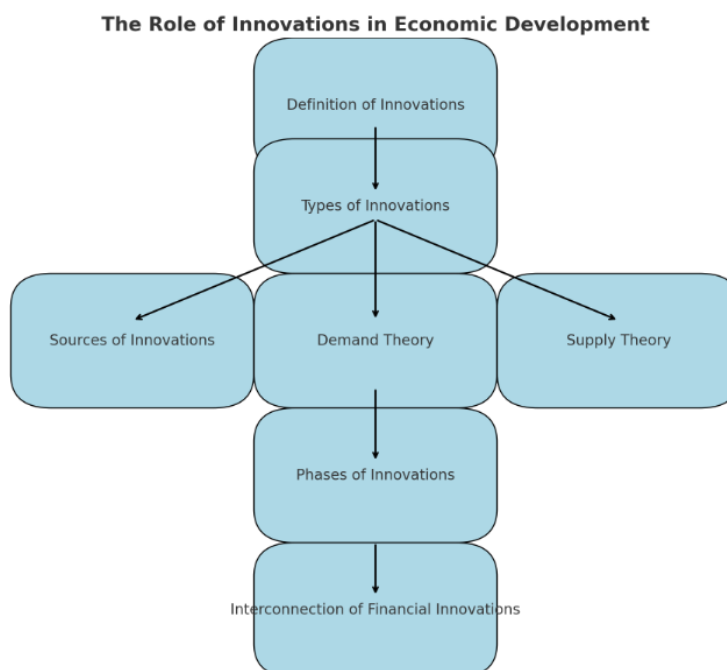


Figure 1. The role of innovations in economic development.

The traditional approach to technological innovations, introduced by Schumpeter, distinguish the following groups of innovations: (1) new products, (2) new methods of production, (3) opening new markets, (4) new sources of supply of raw materials, (5) new organization forms and business structures and (6) new methods of management (Dabic et al., 2011). Based on this approach, the OECD methodology was developed focusing on four groups of innovations: (1) product, (2) process, (3) marketing and (4) business organization (OECD, 2005). The new developments in these four categories are treated as innovations, if they are perceived as new for the entity implementing them, which means that these solutions can be already known and applied in other entities or organizations (Anderloni and Bongini, 2009). When the term “innovation” is defined, one can try to find the reasons for implementing new

developments. The sources of innovations can be analyzed from two perspectives, described either by the demand theory or by the supply theory of innovation. According to the demand theory, the innovations are created as the response to the demand of business entities that want to acquire competitive advantage in their business environment (this type of new developments are called the demand-driven innovations). However, this demand can be influenced either by the internal needs of the business entity aiming at improvement in its activity or by the changes in its environment requiring the proper adjustment in its business strategy.

The second approach stresses the role of the supply side, as innovations are firstly created by the innovation providers and then they are implemented in the business entities (the end-users of innovations). This category of new solutions is called the supply-driven innovations, and they are achieved as a result of the process consisting of three phases: (1) the creativity phase (invention), (2) the innovation phase and (3) the diffusion phase (realized either by imitation or by commercialization of innovative solutions) (Dabic et al., 2011). The presented approaches to the theory of technological innovations can be adopted to the theory of financial innovations; however, the specific features of the latter must be considered (Stradomski, 2006). The financial innovations are not a new phenomenon, as they have been accompanying the technological innovations from the very beginning (Michalopoulos et al., 2009). It is commonly known that financial and technological innovations are bound together, and they evolve together over time (see **Figure 2**). As on the one side, the financial innovations provide mechanism to finance innovative technological projects when traditional sources of funds are unavailable due to high investment risk. And on the other hand, the technological and economic progress resulting in the higher complexity of business processes and new types of risk forces the financial system and financial markets to adopt to the changes, to be modernized according to the new requirements of the business entities and to the challenges of the modern world. This leads to the conclusion that without financial innovations, the technological and economic development would slow down, and the wealth of nations would be lower. At the same time, the application of the financial innovations would be limited without the demand arising from the technical progress.

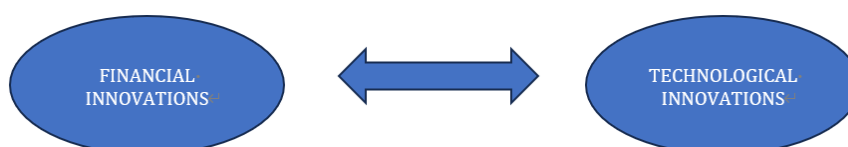


Figure 2. The interaction between financial and technological innovations.

The financial innovations have had a long history of evolution. We can simplify it and say that any financial instruments (besides traditional shares and straight bonds), any financial institutions (besides traditional banks) and any financial markets (besides the traditional markets for the straight bonds and shares), for a certain period of time, can be classified as financial innovations. In the 17th and the 18th century the new financial instruments – debt contracts together with high liquid markets were introduced to gather capital required to finance the oceanic expedition and trading voyage. Then, in the 19th century the investment banks together with the new

accounting methods were established to evaluate the profitability of railroad companies and to provide them sources of funds. Next, in the 20th century, the private equity companies emerged to analyze and finance high-tech investment project. At the beginning of the 21st century, the new form of investment companies are evolving - the pharmaceutical corporations analyzing and funding the bio-tech innovative solutions (Michalopoulos et al., 2009). These are only a few examples of the new financial developments and their evolution, proving to be essential for the technological and economic progress.

As there are no unified definitions of the financial innovations, as in the case of the technological ones, the systematization of this term is required. In most of the applied definitions, the financial innovations are presented in the narrow meaning, as mainly the product innovations are described (Al-Kaber, 2010; Anderloni and Bongini, 2009; Fabozzi and Modigliani, 2003; Frame and White, 2014). By the analysis of these definitions, the main features of the product financial innovations can be listed as follows: 1) they can be entirely new solutions or just traditional instruments in which new elements of construction have been introduced improving their liquidity and increasing the number of their potential applications as they are better suited to the circumstances of the time, 2) they can be used as substitutes to the traditional financial instruments improving the financial situation of the business entities using them, 3) they cannot be easily assigned to one particular segment of the financial market, 4) they can be used to hedge against the intensive volatility of the market parameters, 5) they can be used in a form of complex instruments including several simple, traditional financial instruments, 6) they can be used in a form of new financial processes or techniques or new strategies that primary use these new products, It is worth adding that if any financial instruments other than traditional shares and straight bonds, can be regarded as the financial innovations, these new developments can be divided into two categories: (1) equity-linked innovations and (2) debt-linked innovations.

It is proposed that new financial products lead to excessive trading volumes, ultimately reducing the returns for individual investors. Neoclassical economists suggest that individual investors frequently err when processing new information, making them prone to herd behavior. Their research indicates that factors like market volatility, short-term momentum, and long-term recovery are often the result of investor overreaction rather than being rooted in market fundamentals or economic downturns (Zavolokina et al., 2016).

In addition to this, investors often aimed attention on relative, despite absolute returns from their investment decisions (Chen et al., 2020). This concern with relative performance may direct these investors to invest their money in riskier assets that turn over their portfolios frequently and continue to hold on to losing stocks for too long. In support of this, investors tend to overreact when provided knowledge on new financial product innovations, resulting in transient momentum and volatility that is contrary to what market fundamentals would expect, say researchers (Budish et al., 2019). In several studies, academics have shown that individual investors engage in excessive trading, with some rebalancing their portfolios as much as three times a year. This results in a significant underperformance in the market and exorbitant trading charges for these individuals since they trade often. This group of investors relies on

the interpretation of a financial advisor and incorporates fresh knowledge into their intuitive views (Khraisha and Arthur, 2018).

Only a few empirical research have used an event study technique to examine the overreaction trading behaviour of individual investors in relation to commercial production innovation. One area of research that Frame and White (2014) Product innovations that improve society's well-being are emphasised. Research by the academics and researchers previously cited, as well as in this work, helps to fill up the knowledge gap. Fundamentally, the issue is: Does the introduction of a new structured financial product or financial product innovation improve or harm the financial well-being of individual investors? Two interrelated issues were carefully examined to ascertain the overarching goal. First, does the introduction of new financial products affect individual investors' trading volume? What impact does financial product innovation have on individual investors' returns and returns after adjusting for risk?

Additionally, investors who engage in excessive trading as a result of the launch of new financial products are described in this research (Beck, 2003). The first-time trader trades a unique financial instrument at a given point in time. Individual investors' trade volumes may be examined to see how financial instruments affect them. In the event study method, trade volume returns and risk-adjusted returns before and after the event are studied.

3. Methodology

An event research technique was used to investigate if individual investors' trading activity changed before and after the launch of a financial product. In order to conduct an event study, it is necessary to first identify the most relevant event, which we refer to as the event of interest (Strahilevitz et al., 2011). A financial product is characterised as a financial product for the first time if a person trades it for the first time (derivative instrument). When an investor's event date is set (for example, 1 April 2019 for investor 'A', and 31 March 2021 for investor 'B'), the event window is specified. There is mention in this study of a 365-day event window. To properly compare 365 days of pre- and post-event data, the day of the event was omitted. To study the impact of a new financial product on trading volume, a longer event window is constructed for each individual investor. This study's primary goal is to examine aberrant returns based on abnormal trading volume, which may be estimated using the formulae below:

$$AR_{ij} = R_{ij} - E(R_{ij})$$

where:

AR_{ij} = The abnormal trading returns for investor i and period t ;

R_{ij} = The actual return for investor i and period t ; and;

$E(R_{ij})$ = The expected return for investor i and period t .

An adaptation of Mackinlay's (1997) standardised mean model technique is employed in this research, as seen below:

$$R_{st} = \frac{\overline{R_{dt}} - R_f}{\sigma_{di}}$$

R_{st} = The individual investor's Sharpe ratio i ;

$\overline{R_{di}}$ = Individual investor’s daily round trip return i;

σ_{di} = the individual investor’s standard deviation of round-trip return i;

R_f = Individual investor’s risk-free profit potential i.

Pre- and post-event Sharpe ratios are computed. Sharpe ratios were then compared at the significance level. To sum up, this research studies the overreaction trading behaviour by measuring cumulative average trading returns, as described below:

$$CATR_t = CATR_{t-1} + AAR_t$$

$CATR_t$ = at t , Cumulative the average anomalous returns for the period;

$CATR_{t-1}$ = At time $t - 1$, the cumulative average anomalous returns;

AAR_t = For time t , the average abnormal return.

4. Results and discussion

An additional layer of authenticity was added by cross-checking the data of 10,675 investors obtained from several Indian brokerage firms with that of the country’s top stock market regulator, the Securities Exchange Board of India. There are events from 1 April 2019, to 31 March 2021, included in the database as a whole. Compilation of two files has been completed. One file provides demographic data on investors, while the other contains information on their positions. Unique identifier numbers for each investors are included in the demographic statistics file together with other personal information such as gender and employment. Second, the original position file contains all of the transactions of derivatives of investors from 2016 to 2021, as well as the information on each investor’s portfolios (Sinha, 2012).

In the event study of individual investors’ trading behavior around a financial product launch, mediating variables explain how the launch influences trading activity. For instance, investor sentiment may increase due to positive media coverage, leading to higher trading volumes. Conversely, moderating variables affect the strength of this relationship, such as investor demographics (e.g., age or experience) and market conditions (bullish or bearish). Younger investors might respond more actively to new products, while overall market sentiment can enhance or diminish the impact of the launch on trading behavior, highlighting the complexities in investor responses.

Table 2. Descriptive statistics of the investor’s sample.

	Panel 1	Panel2	Pane 3
Sample Size			
Number of investors	10,675	-	-
Demographics statistics of investors			
Percentage of male investors	-	96%	-
Average Age	-	38(37)	-
Investor portfolios			
% of investors who trade stocks first before moving on to structured products	-	-	96.4%
The average size of a individual’s investment portfolio	-	-	₹41,006 (₹21,916)

Table 2 provides descriptive information for the study population. Some 10,675 investors were taken into account. A look at the demographics of these investors reveals that 96% of them are male. In comparison to the original data, the analysis has improved by 7% percentage points. There is a three-year gap between the average age and the median, which is 38 (median = 37). For the most part, investors do not use structured financial instruments to enter the stock market for the first time ($n = 386$, 3.6%).

Data utilised in this research may be found in the table. Retrieval of information from the position file and the demographic database In India, brokerage firms supply this data. Information gleaned from the position file and the demographic file. This data is made available by Indian brokerage firms. Each of the 10,675 investors had a 730-day evaluation period spanning from April 2014 to March 2021. For a total of 10,675 investors, detailed information is readily available. Information about the portfolios of 10,664 investors may be found. in parentheses, Medians stated.

A total of 1.4 million transactions were examined (**Table 3**), with 11% of them being trading in structured financial products and 89% being trades in other financial instruments such as stock trades, mutual fund investments, and government securities.

Table 3. Examination of transactions.

Transactions Examined	Traded in Structured Financial Products	Traded in other Financial Instruments
14,00,000	1,54,000 (11%)	12,46,000 (89%)

Table 4. Descriptive statistics of different types of transactions and structured financial products.

	Structured financial product trades	Other trades	Total
Panel I: Totals			
Number of trades	186,166 (8%)	2,104,406(92%)	2,290,576
Volume of trades (in ₹)	699M (7%)	9306M (93%)	10,004M
Volume of trades (in shares)	222M (4%)	4948M (96%)	4947M
Commissions (in ₹)	2.8M (8%)	29.8M (92 %)	32.4M
Panel 2: Averages			
Number of trades	18	196	214
The volume of trades (in ₹)	3749	4426	4366
Volume of trades (in shares)	1184	2245	2172
Holding period (round trips, in days)	19	28	27

Statistical data on structured financial product transactions and all other trades included in this research are shown in **Table 4**. A total of 730 days have been allocated to each investor in the research. A typical student makes 18 transactions of a structured financial instrument and 196 additional trades throughout this course (Barber and Odean, 2013). A trade in a structured financial instrument occurs around every 12th transaction. Structured financial products have an average round-trip holding length

of 19 days, whereas regular stock trades have a round-trip holding period of 27 days. Trades in structured financial products tend to be more rapid than those in unstructured financial products (Sinha, 2012).

The location file’s data is summarised in a table. Each of the 10,675 investors had a review period of 730 days from April 2014 to March 2021. In parentheses represent percentages of the entire information.

Financial derivatives, including futures and options, are the most often utilised structured financial product type, since they are highly speculative instruments that are wiped out when they reach a certain floor or maximum (Blach, 2011). The stock market often deals with derivative items. In India, these derivative structured products are based on the NSE index. Unlike traditional investments, these new financial instruments may be purchased at a discount or a premium to the current price of underlying assets like stocks or indices. For a discount, an investor must give up some of the underlying’s potential gains.

It can be seen that most trades executed in 2019 (439,862) followed by 2020 (2,130,610) and 2021 (2,546,982). However, these numbers are interpreted with caution as the numbers do heavily depend on the distribution of the events. In the original data set, which includes 26 million trades (approximately) and 106,839,778 (approx.) structured financial product trades (6.87%), the number of structured financial product trades reach the highest point in 2014 (7,356,242) followed by 2019 (4,824,174) and 2021 (2,546,982).

It is necessary to assess individual investors’ return on investment before and after the event to meet their first aim (Li and Li, 2021). Pre-event and post-event round visits are clearly separated in the research by only taking into account round trips that drop before to and after the introduction of financial products. Round trips between 2 April 2019 and 1 April 2020 (before event phase) and 3 April 2020 (after event phase) are only considered for individual investor events that occur on 31 March 2021. The purchase and sell orders must be fulfilled within the specified time frame. It is only if investor A buys and sells an investment on the same day that the round trip is counted.

Table 5. Daily round trip annualised sharpe ratios before and after the occurrence.

Event Window	Average daily round trip return	Average standard deviation	Annualized Sharpe ratio
Pre-event	0.002	0.098	0.061
Post-event	0.0006	0.148	-0.424
Sample Size	10,675		

In the empirical research, the information in the table is laid out in detail. Using the position file, this information was extracted. In the following table, data collected from April 2014 to March 2021 is summarised. the total number of investors included in this study is indicated by the letter “N”. “Round trip returns for all 10,675 investors, totaling 271,868 round trips before to the individual events, and 373,245 round travels after the individual events are shown in **Table 4**”.

Pre- and post-event annualised Sharpe ratios for 10,675 investors are estimated in **Table 5**. Pre-event daily round-trip returns are on average 0.2 percent greater than post-event daily round trip returns of 0.06 percent. As a result, the initial negative

impact of financial product innovation may be seen in the lower standard deviations before and after the event (0.098 vs. 0.148). Investors post-event take on greater risk but get lower returns, according to the study. Before the occurrence, the pre-event Sharp ratio for round trip returns is 0.061 percent. Investing in risk-free assets like government securities, bonds, and Treasury bills yields returns that are somewhat greater than zero, as shown by the slightly higher number. Even risk-free securities aren't even able to beat investors after the event, according to the annualised returns Sharpe ratio (Luisa Anderloni et al., 2009). Sharpe ratios before and after the event of financial product innovation were compared to see whether investors had inferior risk-adjusted returns after the event. For the null hypothesis, a difference of one percent is significant if it is less than or equal to zero. Investors' risk-adjusted trading results have declined after financial product innovation was introduced.

Finally, one might infer that investors trade more and pay more commissions after introducing a financial product but cannot counterbalance this with better returns or stronger risk-adjusted returns due to the introduction of these new financial products. Finally, after trading in structured financial instruments, investors find themselves in a precarious position.

Table 6. Investors who buy stock before buying a derivative financial instrument.

	Stock traders before traders of derivatives	Investors that don't trade equities before trading derivatives
<i>N</i> (number observations)	10,289	386
Volume of Cumulative anomalous trading	75,679*	-72,775
Volume (in ₹)	(1.71)	(-0.39)
Cumulative abnormal trading	64,845***	-97,212
Volume (in shares)	(6.43)	(-0.42)
Volume of cumulative anomalous trading	16.29***	23.99***
Volume (in number of trades)	(14.83)	(3.21)

Significant level at 1% or less (***), 5% or less (**), and 10% or less (*).

Table 6 summarises data from the demographic and position files. The t test is in parenthesis. Left column shows results for investors that trade equities before trading new financial instruments. These investors trade structured financial items as well as equities. The right column shows outcomes for investors (individuals) who do not trade stocks first (Tufano, 2003). Beginner investors may employ structured financial instruments to trade on the stock market. Investors who trade shares before the new financial instrument will be rewarded. It's -72775, hardly remarkable. Cumulative share trading is also negative (-97212). This is a significant mean for abnormal trading volume over several trades. So, the benefits of excessive trading are enormous. Individuals who do not trade equities first see different results.

5. Conclusion

This study analyses the trading volume and performance of individual investors to post the introduction of a financial product. Derivative instruments that are

considered to be a structured financial product, which is amongst the most popular regularly traded structured financial product of individual investors in India (Beck, 2003). It was used as in manifest of financial product innovation in this paper. With the help of an event study approach, where an event described in detail as the first time an individual investor trades a structured financial product, the behavior of individual investors pre and the post-financial product is analyzed. This paper hypothesis that derivative instruments as a structured financial product are a driver of overreacting trading behavior and thereby leads to lower long-term returns. Moreover, it also describes the attributes of individual investors that are explicitly inclined towards overreacting trading habits (Barber and Odean, 2013). This study shows that new financial products lead to excessive trading by investors, lowering returns. Higher trading volumes are not explained by better risk-adjusted returns. The research uses descriptive data to demonstrate that young investors incur risks and trade too aggressively.

A few studies have been published on financial product innovation. This is one of the few papers that examine the influence of financial product innovation on individual investor overreaction. It shows that financial product innovation does not inevitably translate into long-term success for investors. It may lead to excessive trading and worse results. It has several practical ramifications. Financial institutions and agents should clearly describe the advantages and disadvantages of new products.

6. Future scope

New novel instruments should also be studied in terms of their influence on portfolio risk. Also, it would be interesting to see whether financial adviser suggestions reduce investors' reactive trading behaviour when financial products are introduced. This study also looks at how the new financial product affects individual investors. To better understand the influence of financial innovation on trade volumes and long-term profitability, future study should include financial institutions.

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