

FINANCIAL DERIVATIVES AND ITS IMPACT ON STOCK MARKET

Shashank Aggarwal

College of Vocational Studies, Delhi University, New Delhi, India

ABSTRACT

When it comes to the modern financial system, derivatives are a must-have. Over the last several decades, the role of derivatives markets in the financial industry has grown substantially. Shares, stock market indices, interest rates, commodities, and currencies are all examples of underlying assets that may be used to calculate the value of derivative contracts. The establishment of qualitative models of development and the financial market is being prompted by the emergence of a new, more mobile legal environment and the transformational structures of investors. Secondary data gathered from a wide range of online sources serve as the primary foundation for this investigation. Prices for the S&P CNX Nifty index as of market close were obtained from the NSE's website.

KEY WORDS *Financial Market, Derivatives, Stock option, financial instrument, Stock future*

INTRODUCTION

These days, the financial markets couldn't function without the use of derivatives, a kind of derivative financial instrument. The derivatives market is a very busy and well-liked sector in India. It is abundantly evident that all market participants in the currency markets, commodities markets, and stock markets incur substantial risk due to price volatility regarding items traded on these markets. Derivatives have the potential to increase the effectiveness of a market via price discovery, liquidity, and the transfer of risk in a financial system. In addition, investors and corporations use derivatives for risk mitigation and management. Due to the unfamiliarity and complexity of derivatives trading, investors are wary of the market and have different opinions on how it should be approached.

Over the last several decades, the role of derivatives markets in the financial industry has grown substantially. Numerous exchanges see heavy volume from traders engaged in futures and options. More than \$2.5 trillion each day and expanding at roughly 14% annually, derivatives trading is currently the biggest industry in the world. On a daily basis, derivatives are traded on and off the counter among financial institutions. Securities, capital investment projects, and executive incentive and reward programmed all make use of derivatives. Derivatives are a crucial part of today's market, and every financial professional should have a firm grasp of how they work.

One of the most versatile tools is a derivative. To derive is where we get the term derivative from. The fact that it needs to be interpreted as such shows that it has no intrinsic worth. Shares, stock

market indices, interest rates, commodities, and currencies are all examples of underlying assets that may be used to calculate the value of derivative contracts. In a derivative contract, the underlying acts as a label. The value of a derivative fluctuates in tandem with changes in the underlying asset. Derivatives have no value unless they are based on an underlying asset. As an example, a gold futures contracts worth is based on the worth of gold. The price of gold on the spot or cash market is what determines the price of derivatives. The primary goal of these products is to mitigate financial risks by providing commitments to future prices in the event of unfavorable fluctuations in future prices.

The process of international market globalization was implemented gradually. Traditional notions of the stock market's operation and evolution must be rethought in light of the advent of e-commerce technology for financial derivatives on stock exchanges, especially electronic stock exchanges. The establishment of qualitative models of development and the financial market is being triggered by the emergence of a new, more mobile legal environment and the transformational structures of investors. The worldwide financial system and the economy as a whole rely heavily on the global derivatives market. Derivatives are widely used by modern enterprises as a method of risk management and price stability assurance. By facilitating more accurate asset pricing, derivatives help the economy expand and the market function more effectively. There is a need for new financial derivatives and trade regulations to support the complex mechanics and principles of today's global stock markets. Increased competition, new trading platforms, and other kinds of exchange-based trading have resulted in a dramatic shift in the consolidation process. The manager is motivated to succeed in order to avoid bankruptcy and maintain his job when competition is high.

A stock market, also known as an equity market or share market, is the collection of individuals who buy and sell stocks, also known as shares, which represent ownership stakes in corporations. These securities may be listed on a public stock exchange or only traded privately, such as shares of private corporations that are offered to investors through equity crowdfunding platforms. An investing strategy is typically present when making an investment. Global stock market indices serve as reliable economic indicators for both the world's economies and those of individual nations. The three indexes that investors and the media in the United States pay the most attention to are the S&P 500, Dow Jones Industrial Average, and Nasdaq Composite. The United States equities market is made up of these three indices and almost 5,000 additional ones.

One kind of financial instrument is the derivative, which takes the form of a contract and derives its value from that of an underlying asset. Derivatives may be traded on regulated exchanges or informally "over the counter." In order to mitigate the default risk of the parties involved in a derivatives exchange transaction, a clearinghouse is often used as a counter party. Through the OTC market, derivatives are privately negotiated and tailored to the exact needs of the counterparties. Derivatives trading on exchanges has been existed since at least the 1500s, when records began to be kept. However, there has been a recent surge in the number of exchanges of this kind being established all over the globe. Although most derivatives exchanges may be found

in developed nations, the evolution of the global market points to rising prospects and demand in developing nations. According to turnover figures, practically all derivatives trade on exchanges in developed nations, but in developing markets, they are traded almost equally on OTC and exchange markets.

OTC derivatives, and credit default swaps in particular, were named as one of eight key causes of the financial crisis and ensuing Great Recession by the U.S. Financial Crisis Inquiry Commission (FCIC). The FCIC found that leverage, or the use of borrowed money to make investments, was a major contributor to the financial system's problems. Many people wrongly blame derivatives for the disruptions brought on by excessive leverage. AIG's dominance in the CDS market, which specialises in insurance against the failure of mortgage-backed assets, was built in large part due to the lack of regulatory monitoring.

Regulatory shifts in the United States and other key markets cloud the future of derivatives. The Financial Crisis Inquiry Report was not released until May 2011, five months after the Dodd-Frank Wall Street Reform and Consumer Protection Act was signed into law in July 2010. The lack of disclosure and the absence of capital and collateral requirements in some OTC derivatives markets were the primary foci of the initiative. The CFTC and the SEC were given jurisdiction to oversee swap derivatives under Title VII of Dodd-Frank, often known as the Wall Street Transparency and Accountability Act. The "security-based swaps" market has been assigned to the SEC's jurisdiction. Other Dodd-Frank titles dealt with the wider problems of company interdependence and risk concentrations in the derivatives markets.

LITERATURE REVIEW

Wanying Huang et.al (2021) Opportunities for growth in the financial derivatives industry have increased with the broader financial sector. However, firms must utilize financial derivatives properly and responsibly since possibilities and problems coexist. This study takes a hybrid approach, analyzing both theory and practice, to introduce financial derivatives and their many forms, dangers, processes, and common uses. Not only could the reader execute in-depth simulations based on case studies, but they could also read in-depth explanations of the theoretical foundation to get insight into the trading procedures and profitability mechanisms of various important derivatives. In-depth study and analysis led to the conclusion that businesses should make deliberate investments in technological infrastructure, human capital, and derivatives in order to mitigate risk and maximize shareholder value. To begin with, businesses that use derivatives should focus on hedging rather than speculating at will. This paper's study aims to pave the way for established businesses to successfully use derivatives in order to mitigate risk and contribute to the further growth of the financial derivatives market.

Toopalli Sirisha et.al (2021) The derivatives market is crucial to the growth of any economy. The primary goal of this research is to examine how financial derivatives affect underlying market volatility (futures and options). There has been a dramatic rise in the prevalence and usage of financial derivatives in recent years. Because of its unprecedented global expansion, this is now

often referred to as the derivatives revolution. The derivatives market has developed and expanded substantially more in India. Derivative. Futures and options are the focus of this essay, and the Indian stock market is used as a case study. Goal of this article is to advise readers on how to maximize their returns in the derivatives markets.

Diego Lema et.al (2019) This research investigates the correlation between the evolution of derivative markets and rising living standards. In light of the fact that sample sizes are too small for a thorough econometric examination, it seeks to verify these connections experimentally by using established statistical correlation methods. It examines data from both established and developing economies over the longest time period available to see whether there was a fundamental break during the 2008-2009 recession. Positive correlations between derivatives and economic development have been found in previous research, most notably via the channels of investment and international commerce. In the case of industrialized nations, another generalization is that growth and derivatives have a concave relationship.

Tvss Swathi (2021) The derivatives market may be crucial to a country's economic growth. The purpose of this research is to examine how the volatility of financial derivatives relates to the underlying market (futures and options). As of late, financial derivatives have become the norm rather than the exception in the business of making money. Because of its unprecedented global expansion, this is now often referred to as the derivatives revolution. The derivatives market has developed and expanded substantially more in India. Futures and options are the focus of this essay, and the Indian stock market is used as a case study. Goal of this article is to advise readers on how to maximize their returns in the derivatives markets.

George Abuselidze et.al (2022) The Ukraine stock market for financial derivatives is still in its early stages of development. It is crucial to determine the best approach for incorporating international best practices into domestic policy. The first step toward achieving fiscal and economic security is strengthening the foundation of laws that govern them. Consolidating stock markets is the next step in the process of integrating the domestic stock market for financial derivatives. Risks associated with introducing foreign expertise to the Ukrainian stock market must be carefully considered before any action is taken. Following the recommendations of this study will facilitate the full globalization of the Ukrainian stock market for financial derivatives. The article defines the role of derivatives in the market economy and describes the many kinds of derivatives. Some of the most important tendencies in international derivatives trading are discussed. The article focuses on the Ukrainian derivatives market and its current status and organizational strategies for growth. Today's commodities and financial markets are dominated by price risk. The fast shifts and unpredictability of modern business are a direct result of the globalization of commodities and financial markets. Current market conditions make derivatives markets useful tools for mitigating price risk in a free market economy. Thus, the current condition and future forecast of the derivatives market in Ukraine must be taken into account.

RESEARCH METHODOLOGY

Study Period: Index Futures were introduced on June 12, 2000, Index Options on June 4, 2019, Stock Futures on July 2, 2019, and Stock Options on November 9, 2019, all via the NSE. As a result, the whole-time frame is split into two parts: the preservatives era and the post-derivatives era.

Sample: Since the S&P CNX Nifty Index is a significant proxy for the Indian Stock Market and accounts for around two-thirds of market turnover, it has been the focus of this research. Futures and Options are the two most important types of derivatives that are of interest to the research team. Options are broken down into two distinct types, index options and stock options, while futures may be broken down into two distinct types, stock futures and chosen index futures.

Data collection: Secondary data gathered from a wide range of online sources serve as the primary foundation for this investigation. Prices for the S&P CNX Nifty index as of market close were obtained from the NSE's website. Monthly SEBI bulletins were mined for information on NSE derivatives trading volume.

Measurement of volatility: A common metric for gauging market volatility is the standard deviation of return rates. Rates of return have been calculated by using the logarithmic difference in prices between two-time intervals. One possible symbolic expression of this is as follows: $rt = \log_e(\text{points}_{t+1} - \text{points}_t) / \text{points}_t = \log_e(\text{deficiency}_{t+1} / \text{deficiency}_t)$ where p and p_{t-1} are the end-of-period prices for the two-time intervals, and \log_e is the natural logarithm. The logarithmic difference is represented as a % for ease of comparison with the intuitive concept of a percentage change, and it is symmetrical for both positive and negative changes.

Statistical tools: The current investigation made use of paired t-test statistical methods.



Chart:1 Publicly listed shares

Primary and secondary stock markets are two different categories. Please be aware that it only deals in shares, whereas the stock market deals in bonds, derivatives, and foreign exchange, and

that both markets operate in different ways. The Nasdaq and New York Stock Exchange are the two leading US stock exchanges (NYSE).

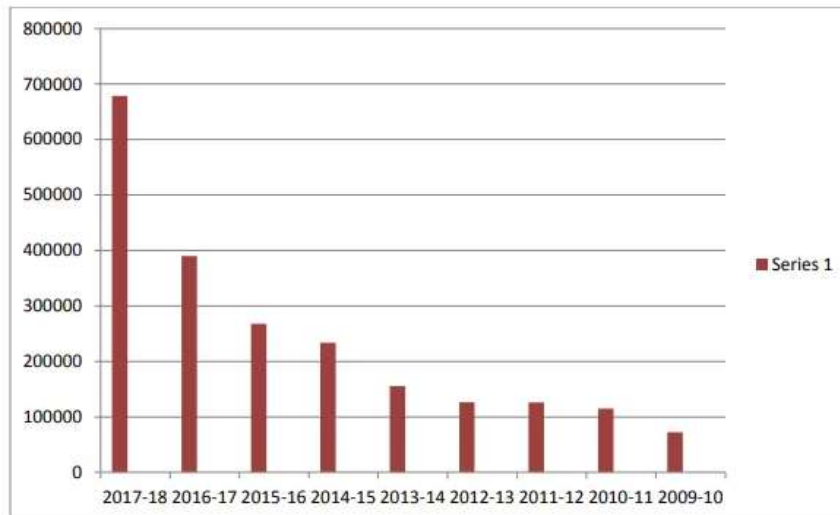


Chart: 2 growths in derivative market in FO segment

In the above chart, we can see the continued growth of the derivative market in the FO industry. The sum rose from \$72.392.07 billion in 2010 to \$678.588.45 billion in 2018. This increase is encouraging news for India's economy.

Derivatives can be exchanged on an exchange or over the counter (OTC). The term "exchange" refers to the officially recognized stock exchange where securities are exchanged and participants are subject to a certain set of rules. In contrast, the OTC market is a dealer-oriented, disorganized market where trading takes place over the phone, by email, etc.

DATA ANALYSIS

India's Derivatives Market Investors have access to a wide range of derivative products on the Indian stock market, which they may trade for a number of purposes. A trader may do this by opening positions in the derivatives market to offset any losses in the underlying or Spot market. Almost all Indians who employ derivatives call themselves "hedgers," and the legislation there strictly regulates their usage for risk management. One other reason people trade derivatives is for speculative purposes. To be effective, markets need the involvement of both hedgers and speculators, but in reality, it may be impossible to tell which motivation was driving a given deal.

Table 1: Trends in turnover in derivatives at NSE (Rs. in Crore)

Year	Index Future	Stock Futures	Index Options	Stock Options	Turnover	Growth Rate (%)
June 2010 to March 2011	2365	NA*	NA*	NA*	2365	
2011-12	21482	51516	3766	25163	101927	4209.80
2012-13	43951	286532	9248	100134	439865	331.55
2013-14	554462	1305949	52823	217212	2130446	384.34
2014-15	772174	1484067	121954	168858	2547053	19.55
2015-16	1513791	2791721	338469	180270	4824251	89.40
2016-17	2539575	3830972	791912	193811	7356270	52.48
2017-18	3820667	7548563	1362111	359136	13090477	77.94
2018-19	3570111	3479642	3731501	229226	11010480	-15.89

Source: Data collected from various monthly bulletins of SEBI

***Note:** Data was not available as Stock Futures, Index Option and Stock Options introduced on 9 November 2011, 4 June 2011 and 2 July 2011 respectively.

Turnover in the derivatives market is seen in Table 1. Even a quick look at it reveals the expanding derivatives industry in India. Turnover grew at a rate of more than 300% per year in 2012–13 and 2013–14, but has since fallen below 100% per year and became negative in 2018–19.

Stock Futures trading activity is shown to have consistently been more active than that of other markets. It's important to remember that Stock Future was the derivative product introduced to the market last, after the other three derivatives had already been made available to investors. The graph also shows that Index Futures follow a path that is similar to but not identical to that of Stock Futures, and that trading volume for the other two derivatives products is far lower than that of the first two.

Interpretation of results

Standard deviation values for the NSE have decreased with the introduction of the Index Future, as seen in Table 2, which compares volatility of the S&P CNX Nifty before and after the Index Future was introduced. Volatility, for example, was 2.48, 2.68, and 2.47 before Index Future was introduced, but just 1.6, 1.43, and 1.62 thereafter. Graph 2 also reveals this pattern.

Table 2: S&P CNX Nifty volatility pre and post index future

	VBIIF*	VAIIF**
1 month	2.48	1.6
2 months	2.68	1.43
3 months	2.47	1.62
6 months	2.19	1.49
1 year	2.04	1.63
2 years	1.91	1.37
3 years	1.83	1.48

Pre-Index Future period (01/04/95- 11/06/00)	1.74	
Post Index Future period (13/06/00-31/03/08)		1.54
Post Index Future period (13/06/00-31/03/09)		1.70

Source: Calculated from the data taken from NSE website for said period VBIF*-Volatility before introduction of Index Future

VAIF- Volatility after introduction of Index Future

Table 3: Paired samples t- test

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
VBIF- VAIF	0.6475	0.3417	0.1208	5.359	8	0.001

Source: Calculated from the data based on Table 2

The t-test was used to further validate these results, which showed that the true value was greater than the tabulated one ($5.359 > 2.365$). Both the Hoi and Hoj null hypotheses were found to be false, leading to the adoption of the alternative hypothesis. It demonstrates that the stock market's volatility increased after the introduction of Index Future, and it also shows that the volatility before the event was higher than the volatility after it.

Table 4: S&P CNX Nifty volatility pre and post index option

	VBIO [^]	VAIO ^{^^}
1 month	1.21	1.19
2 months	2.12	0.95
3 months	1.98	1.51
6 months	1.81	1.34
1 year	1.96	1.21
2 years	1.88	1.27
3 years	1.88	1.34
Pre-Index Option period (01/04/95-03/06/01)	1.73	
Post Index Option period (05/06/01-31/03/08)		1.51
Post index option period (05/06/01-31/03/09)		1.69

Source: Calculated from the data taken from NSE website for said period VBIO[^] Volatility before introduction of Index Options VAIO^{^^} Volatility after introduction of Index Options

The descriptive data of the S&P CNX Nifty's volatility before and after the Index Option period are shown in Table 4. Volatility measures 1.73 between 1 April 2015 and 3 June 2016 and 1.51 between 5 June 2016 and 31 March 2008. The data show that once Index Option was implemented, the standard deviation (a measure of volatility) decreased from 1.73 to 1.51. The graph's conclusion, which is corroborated by t-tests, is that pre-period volatility is always higher than post-period volatility.

Table 5: Paired samples test

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
VBIIO-VAIIO	0.5313	0.3439	0.1216	4.369	8	0.003

Source: Calculated from the data based on Table 4

Table 6: S&P CNX Nifty volatility pre and post stock option

	VBISO ^s	VAISO ^{ss}
1 month	1.28	0.77
2 months	1.57	1.59
3 months	1.99	1.48
6 months	1.71	1.37
1 year	1.67	1.2
2 years	1.9	1.46
3 years	1.85	1.34
Pre-Stock Option period (01/04/95-01/07/01)	1.73	
Post Stock Option period (03/07/01-31/03/08)		1.51
Post Stock Option period (03/07/01-31/03/09)		1.70

Source: Calculated from the data taken from NSE website for said period VBISO^s Volatility before introduction of Stock Options

VAISO^{ss} Volatility after introduction of Stock Options

The same holds true for Index Options, where the observed value is higher than the predicted one: (4.369 > 2.365). As a result, we may say that the alternative hypothesis is true and the null hypotheses are false (Hoi and Hoj). The research shows that the stock market's volatility increased before and after the introduction of Index Options.

Standard deviation values for the NSE have decreased when the Stock Option was introduced, as demonstrated in table 6 from an examination of the volatility of the S&P CNX Nifty both before and after its implementation. Volatility levels for one month, two months, three months, one year, two years, and three years all decrease when comparing the pre- and post-Stock Option eras. After the Stock Option era ended in March 2008, the cumulative value of volatility likewise decreased from the pre-Stock Option period. Even though there was an improvement in value for the time period ending in March 2009, it is still below the value for the time period when stock options were introduced. Graph 4 shows the same pattern.

Table 7: Paired samples test

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
VBISO-VAISO	0.3725	0.1887	6.670E-02	5.585	8	0.001

Source: Calculated from the data based on Table 6

The t-test provides further statistical confirmation of these results, showing that the real value is greater than the table value (i.e., $5.585 > 2.365$). This resulted in the alternative hypothesis being accepted and the null hypothesis (H_0 and H_{0j}) being rejected. The stock market's volatility has increased since the introduction of stock options, yet it is still lower than it was before the event.

S&P CNX Nifty Volatility Pre and Post Stock Future Descriptive Statistics are shown in Table 8. Volatility decreased from 1.72 (Standard Deviation) between 1 April 1995 and 8 November 2001 to 1.51 (Standard Deviation) between 10 November 2001 and 31 March 2008. The next chart further illustrates this pattern, showing that the level of volatility just before an occurrence tends to be higher than the level of volatility immediately after.

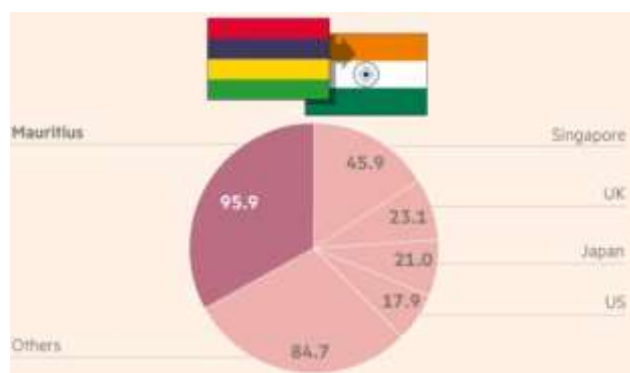
Table 8: Paired samples test

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
VBISF-VAISF	0.3955	0.1924	6.804E-02	5.813	8	0.001

Source: Calculated from the data based on Table 8

T-tests corroborate the findings for Stock Future, finding that the real value is greater than the table value, i.e. ($5.513 > 2.365$), just as they do for Index Futures, Index Options, and Stock Options. Acceptance of the AH and rejection of both NHs were deduced from the results (H_0 and H_{0j}).

Chart 3 India S Stock Markets Vs Foreign Stock Markets



The tiny Indian Ocean nation of Mauritius has been by far the largest source of funding as foreign direct investment into India has increased over the past ten years. The island nation's

disproportionate impact on India's economy is due to a 1983 bilateral tax agreement that exempts corporations with headquarters in Mauritius from capital gains tax on investments made in India.

The tax loophole has been eagerly adopted by foreign investors from private equity firms to multinational corporations like GlaxoSmithKline, who have invested tens of billions of dollars into India through subsidiaries in Mauritius. But now that New Delhi is waging a campaign to close this and other loopholes in its tax code, they should prepare for big bills from India's tax authorities. Concerns over whether the shift may affect foreign demand for Indian stocks, which are currently trading at their best levels in more than a year, are also being raised.

IMPACTS ON THE U.S. ECONOMY

Before the crash that started six years ago, derivatives were widely used because of the potential profits they offered to a wide range of firms and investors. Over-the-counter (OTC) derivatives, and credit derivatives in particular, came under fire during the crisis and its aftermath for contributing to a rise in counterparty risk and the near collapse of the financial system. As a result, substantial regulatory reform has been implemented to improve visibility and lessen systemic danger. The value of derivative goods in industry has to be evaluated more thoroughly. Why do so many banks and non-financial companies employ these instruments if, as some claim, they are so detrimental to their operations? However, the beneficial influence that most of these instruments have had on economic development in the United States over the last decade, mostly via risk reduction, has been lost in the drama surrounding derivatives.

Table 9. Statistics for the analyzed economies 2012-2019

Variable	Notation	Average	Standard Deviation	Minimum	Maximum
Gross domestic product	pib	7.05E+12	6.04E+12	5.00E+11	1.85E+13
Gross domestic product per capita	pibper	23724.66	17007.23	2256.89	54629.5
Volume of derivatives markets	der	1.06E+09	1.05E+09	612272	3.44E+09

FEDERAL RESEARCH AND PRODUCTIVITY

Carol Corrido, Senior Advisor and Research Director in Economics at the Conference Board, claims that several studies analysed the overall impacts of government R&D from the 1950s through the 1970s, but that there have been fewer such studies in more recent decades. She spoke about the "30,000-foot view" of contemporary study into the relationship between R&D and output. She also brought out an important upcoming shift in US national accounts. Starting in 2013, money spent on research and development will be seen as an investment rather than an intermediate cost. Therefore, it follows that public and private R&D efforts will contribute to a rise in national saving and GDP.

It is claimed by Corrido that the total amount spent on research and development in the United States has remained unchanged as a share of GDP since the 1980s. Since 1959, the private sector has increased its funding of research and development at a faster rate than the governmental sector, and this trend has continued, with the two sectors seeing about equal growth since roughly 2001. Companies spent \$269.6 billion on research and development in 2007, with the government spending \$117 billion, universities spending \$10.6 billion, and nonprofits spending \$8.4 billion.

During the 1990s and 2000s, Corrido analysed research and development (R&D) budgets in eight distinct sectors. When the R&D intensity of each sector corresponded with Total Driver Productivity (TFP) estimates, as it did during the 1990s, R&D may be considered as the only factor driving productivity growth. Data from the 1990s also shows that the federally subsidized computer R&D sector surpassed its competitors. Since this looked so extraordinary, Corrido decided to disregard it and instead concentrate on the other seven industries in search of more general trends. Except for technology, however, R&D seemed to be the sole reason for productivity gains in the 1990s.

INDIRECT ECONOMIC BENEFITS OF RESEARCH

Government research spending is becoming more and more justifiable in terms of the economic gains, including job creation. However, Bruce Weinberg, professor of economics and public administration at Ohio State University, noted that even some scientists disagree with the practical benefits of research and that there is little widely used methodology for calculating these benefits.

On "indirect benefits," Weinberg concentrated. These were referred to by him as the "productivity spillover benefits," which extend beyond specific goods or processes that emerge from research. Examples include more productive workers with greater training, fixes for industrial issues, new infrastructure, or innovation clusters. Even if these spillover benefits end up being less significant than the direct gains, they are nevertheless significant and increasingly influence the debate over the costs and advantages of research.

The creation of jobs is one approach to calculate the economic advantages of research, but Weinberg pointed out that "this raises deep fundamental and practical challenges." If a job earns \$50,000 a year, for instance, the worth of the employment to an individual is actually \$50,000 less than what the employee would have been making at another job. Additionally, people may switch from other industries to science as salaries rise, which would transfer jobs from one area to another rather than creating new ones.

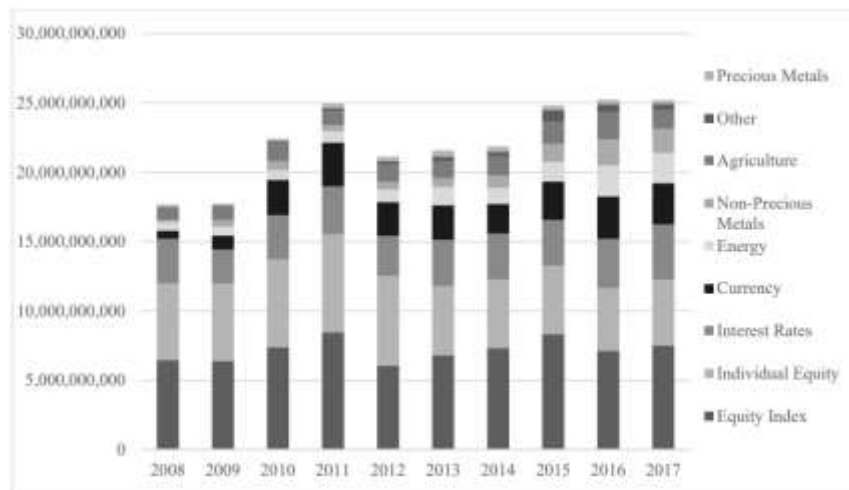


Chart 4: Annual volume of exchange-traded futures and options by category.

Weinberg recommended focusing on results instead, such as pay or productivity, in areas with higher science and research activity. He said that it should be calculated whether research results in more productive industries in regional economies.

Weinberg correlated economic measures with research measurement in specific cities. When more research is conducted in a city, are earnings and employment better? he questioned. He also examined innovation indicators like the number of patents in scientifically advanced cities.

CONCLUSION

Due to the unfamiliarity and complexity of derivatives trading, investors are wary of the market and have different opinions on how it should be approached. Derivatives are a crucial part of today's market, and every financial professional should have a firm grasp of how they work. In a derivative contract, the underlying acts as a label. The value of a derivative fluctuates in tandem with changes in the underlying asset. There is a need for new financial derivatives and trade regulations to support the complex mechanics and principles of today's global stock markets. The S&P CNX Nifty Index is analyzed as a stand-in for the stock market. India's Derivatives Market Investors have access to a wide range of derivative products on the Indian stock market, which they may trade for a number of purposes. Prior to the introduction of derivatives, the following time periods existed: Index Futures: April 1995–June 2000; Stock Futures: April 1995–November 2001; Index Options: April 1995–June 2001; Stock Options: April 1995–July 2001. The second segment covers the years after the aforementioned categories stopped using derivatives and ended in March of 2009.

REFERENCES

1. Wanying Huang et.al (2021) Financial Derivatives and Their Application in Enterprises
2. Toopalli Sirisha et.al (2021) A Study on the Derivatives Market in India

3. Diego Lema et.al (2019) Derivatives and Economic Growth: Links and Evidence the Impact of the Financial Derivatives on the Real Economy, ISSN: 2314-3738
4. Tvss Swathi (2021) A Study of Derivative Market in India, ISSN no:0886-9367
5. George Abuselidze et.al (2022) Global Financial Derivatives Market Development and Trading on the Example of Ukraine
6. Yogesh Maheshwari (2012) Equity Derivatives Introduction and Stock Market Efficiency, *Journal of Management Research* vol. 12, no. 3, December 2012, pp. 141- 152
7. Vashishtha, S. Kumar, "development of financial derivatives market in India-a case study", www.eurojournals.com (accessed on 20 February, 2014)
8. Ameer and Rashid (2011) A Survey on the Usage of Derivatives and Their Effect on Cost of Equity Capital, *Journal of Derivatives*; Fall 2011; 19, 1; abi/inform global pg. 56
9. F. G. Kalani's and N. T. Milongas, "Analyzing the Impact of Futures Trading on Spot Price Volatility: Evidence from the Spot Electricity Market in France and Germany, *Energy Economics*, vol. 36, pp. 454–463, 2013.
10. R. Gahlot and S. K. Dutta, Impact of Futures Trading on Stock Market: A Study of Brick Countries, *Study in Economies and Finance*, emerald group, vol. 29, pp. 118-132, 2012.
11. D. Sahu, Effect of Equity Derivatives Trading on Spot Market Volatility in India: An Empirical Exploration, *European Journal of Business and Management*, vol. 4, no. 11, 2012.
12. R. Singla, Effects of Derivatives on the Volatility in the Indian Stock Market, *Abhinav Journal, National Monthly Journal of Research in Commerce and Management*, vol. 1, Issue 4, pp. 78-82, 2012.
13. G. Kaur, Impact of Derivatives Trading on Market Volatility and Liquidity," *International Journal of Research in Commerce and Management*, vol. 2, issue 3, no. 1, 2011.
14. P. Sakthivel and B. Kamiah, "The Effect of Derivative Trading on Volatility of Underlying Stocks: Evidence from the NSE," *Indian Journal of Economics and Business*, vol. 10, issue 4, 2011.
15. Kabir and Ikram, Role of Financial Derivatives and its Impact on Indian Capital Market: A Case Study of National Stock Exchange (NSE) since 2000, *South Asian Journal of Marketing and Management Research*, vol, 2, no. 4, 2012.