



**H.R. COLLEGE**  
of Commerce & Economics



VOL.3 ISSUE 4

SEPTEMBER 2021

# FINNACLE



**Retail Banking**



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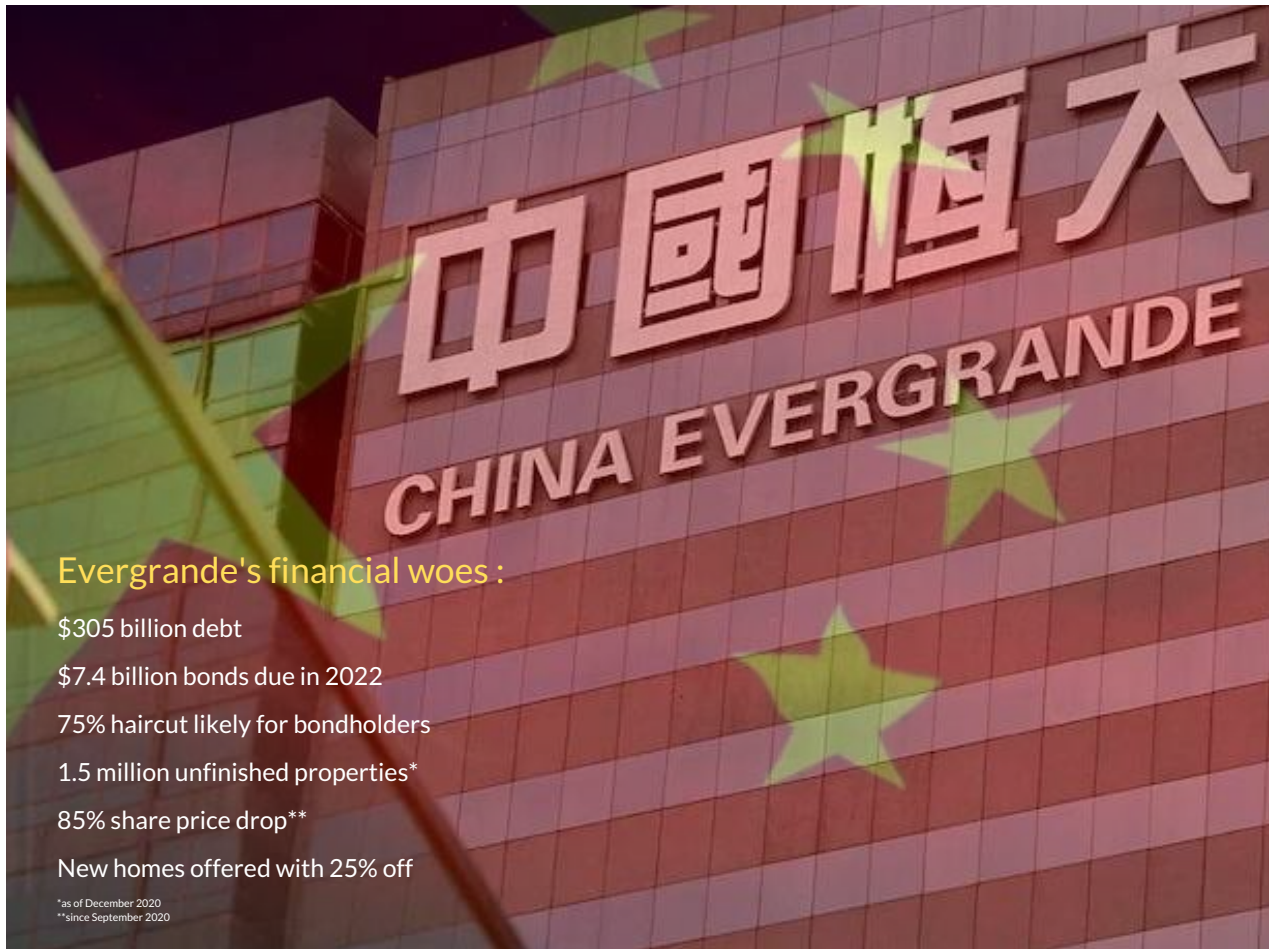
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### Evergrande's financial woes :

\$305 billion debt

\$7.4 billion bonds due in 2022

75% haircut likely for bondholders

1.5 million unfinished properties\*

85% share price drop\*\*

New homes offered with 25% off

\*as of December 2020

\*\*since September 2020

# Is the EVERGRANDE crisis China's LEHMAN moment?

READ TIME: 3 MINS

Global financial markets have been on high alert as cash-strapped Chinese property giant Evergrande is facing several key problems. Some investors are even comparing it to the Lehman Brothers' collapse in 2008 which led to a global financial crisis. As the company struggles to meet its debt obligations, it has started to repay some investors in its wealth management business with property!

## What is Evergrande?

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Businessman Hui Ka Yan founded Evergrande, formerly known as the Hengda Group, in 1996 in Guangzhou, southern China. Evergrande Real Estate currently owns more than 1,300 projects in more than 280 cities across China. Its businesses range from wealth management, making electric cars and food and drink manufacturing. It even owns one of country's biggest football teams - Guangzhou FC.

## How did it run into trouble?

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There were two immediate triggers that precipitated the crisis at Evergrande. Chinese regulators kicked off probes into the high borrowings of property developers. To counter that, Evergrande tried selling off some of its business. But a progressive slowing down of China's property market and tapering demand for new houses crimped cash flows. The two factors combined to precipitate the cash crunch at Evergrande which is now struggling under a \$300 billion liabilities burden.

## Is there a way to move forward?

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The central or provincial governments or state-owned enterprises could step in with some sort of lifeline or forced restructuring. Beijing was said to have instructed authorities in Guangdong to map out a plan to manage the firm's debt problems, including coordinating with potential buyers of its assets. Regulators in September signed off on a proposal to let Evergrande renegotiate payment deadlines with banks and other creditors, paving the way for another temporary reprieve.

## How did the global markets react?


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Global markets fell 2-3% after the Evergrande news broke out but since have been on a recovery path as many analysts believe that if the company is unable to pay its debts, there will be tremors in the foreign financial markets but it will be temporary.

## Are there implications for India?

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If the slowdown problem rises in China then Yuan can depreciate which may have a domino effect on other Asian currencies like Rupee that may lead to some FII's outflow in the near term. The metals and chemicals sector will remain vulnerable to any negative development in China as it will affect global growth as China has become a net importer of steel and chemicals. If we talk about the real estate sector then the Indian real estate sector is completely different from China and the Indian real estate sector market is seeing a strong recovery but we can expect near term volatility due to Chinese problems.



### What lies ahead?

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The demise of the company is expected. If handled well, however, the process could inject momentum into Xi's reform of the Chinese economy.

In the event of defaults, China's banking system can reportedly absorb it, as it has an annual profit of 1.9 trillion yuan (approx. \$294 bn) and reserves of 5.4 trillion yuan (approx. \$835 bn) against bad loans.

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**Sources:** BBC, CNBC,  
 EconomicTimes

# Mullah Abdul Ghani Baradar

READ TIME : 3 MINS

Mullah Abdul Ghani Baradar is an Afghan political and religious leader who is currently the acting first deputy prime minister of the Islamic Emirate of Afghanistan. He is known by the honorific Mullah. He is the co-founder of the Taliban along with Mullah Muhammad Omar, the first Amir. He belongs to the Popalzai Pashtun tribe and is among the original members of the Taliban. Currently, he heads the Taliban's political office.



MULLAH ABDUL GHANI BARADAR

### Early Life

Mullah Abdul Ghani Baradar was born into an influential Pushtun tribe of Weetmak in the Yatimak village of Deh Rawood District in Uruzgan Province of the Kingdom of Afghanistan in 1968, as per Interpol. His name means 'brother' and was conferred by Mullah Omar himself as a mark of affection.

In his youth, Baradar fought with mujahideen guerrillas against Soviet troops and the Afghan government. He set up a madrassa in Maiwand, Kandahar with his former commander and brother-in-law Mohammad Omar. This was after the Russians withdrew in 1989 and the country fell into civil war between rival warlords.

Baradar, a highly effective strategist, was a key architect of the Taliban sweeping to power in 1996. Baradar held a host of key posts, including that of the deputy minister of defence during the Taliban's first political stint. Between 1996 and 2001, Mullah Abdul Ghani Baradar played a crucial role as the deputy minister of defence. Reports say Baradar does not have a good relationship with Pakistan and apparently he still nurses much resentment against Pakistan for his imprisonment.



### Where was Mullah Abdul Ghani Baradar all these years?

After 2001, Mullah Abdul Ghani Baradar left Afghanistan and this August was the first time he returned to his country. In 2010, he was arrested in Pakistan and was released after US intervention. Baradar spent eight years in captivity and was released when the Trump Administration started talks with the Taliban in 2018.



### **Baradar's first speech after Kabul takeover:**

"It was never expected that we will have victory in Afghanistan. Now comes the test. We must meet the challenge of serving and securing our nation, and giving it a stable life going forward," he said after the Taliban captured Kabul." Mullah Abdul Ghani Baradar is internationally known. Baradar led the Taliban's negotiation team in Qatar which culminated in the 2020 peace agreement. Mullah Abdul Ghani Baradar met Mike Pompeo, spoke with Donald Trump in the process of the deal. Baradar also met Chinese Foreign Minister Wang Yi. Mullah Abdul Ghani Baradar has been named among the 100 most influential people of 2021 by TIME magazine. Mullah Baradar has been listed as the most influential under the category of leaders which also includes US President Joe Biden and Chinese President Xi Jinping.

The Taliban leader who is considered more moderate has been described as a 'charismatic military leader' and a 'deeply pious figure' by TIME magazine. Baradar is considered to be a quiet, secretive man who rarely gives public statements.

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**Sources:**

**Wikipedia, DNA India, Hindustan Times, Economic Times**



# WHY IS THERE A PUSH FOR ASSET MONETIZATION?

READ TIME: 3 MINS

Government revenue sources have been a buzzing topic ever since the pandemic hit. With the recent years being rough on every sector, the importance of asset monetization as a part of government revenue, rose to its epitome and a push of asset monetisation is being realised. We know your mind is popping up with all sorts of questions. What is asset monetization? Why do we need it and what is its valuation?

With that, let's get into it. Asset monetization is a process that helps the government to create new sources of revenue by unlocking the economic value\* of unutilised or underutilised public assets. At its core, Asset Monetization serves two very important purposes:

- Unlocking value from public investments in infrastructure projects.
- It taps private sector efficiencies as it is a shift from privatization to structured contractual frameworks.

All of this, brings us to the National Monetization Pipeline (NMP), which is unlocking the investments in brownfield\* projects by engaging the private sector, transferring to them revenue rights but not ownership. A major advantage of NMP to investors is assets which are de-risked from execution risks providing a balanced of profile assets. Let's gain some insight into this: In case of roads the Government could transfer the rights to toll & maintain the asset to a private entity.

It works through an agreement working out the toll fee corresponding to the period in which the rights are transferred. In return the private entity may be asked to commit cash up front.

So, how does the valuation of assets derived under NMP go about? There are 4 ways: Market Approach, Capex Approach, Book Value Approach and Enterprise Value Approach.

1. Market Approach: Indicative value is determined based on the comparable market transactions for the identified asset classes.
2. Capex Approach: Considered for those asset classes that may be monetised through PPP-based models . In the absence of the asset monetisation transaction, the government would have to incur the outlay towards augmentation of the brownfield\* asset.
3. Book Value Approach: This is employed in case of asset classes where information on comparable market transactions or estimated capex investment is unavailable.
4. Enterprise Value Approach: This approach is considered for assets where information on the existing revenue stream is available / be reasonably projected.

So, is the National Monetization Pipeline beneficial to the economy? Economists believe that scarce assets are better managed by the private sector than by the government. The government believes that leasing out public assets to private investors will free capital that is stuck in assets. Analysts say that the government has now through NMP found the right model for infrastructure development. Following, is the sector wise breakdown of the Asset Monetization Program:

The government will raise ₹88,000 crore this year by leasing infrastructure assets of CG ministries & state-run companies under ₹6 trillion NMP it unveiled on Monday. Top 5 sectors by value under the monetization programme are roads (27%), railways (25%), power (15%), oil & gas pipelines (8%) & telecom (6%).



So, what lies ahead? Asset monetization is not new. However, the National Monetization Pipeline is new. Even though NMP is not something to worry about, the question is about the readiness of the country. NMP holds the key to value creation in infrastructure. However, it must not let the government distinguish between tycoons & other private investors.

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**Writer:** Jhalak Thakur

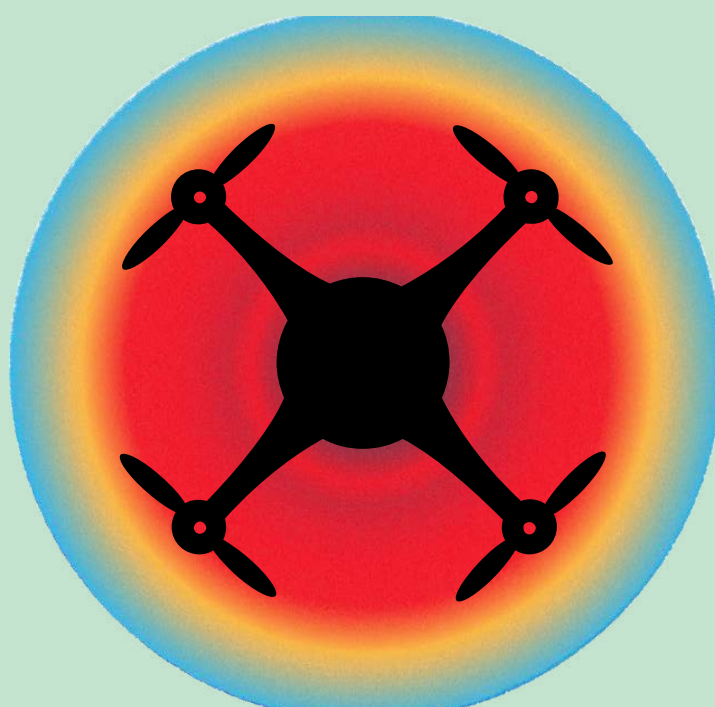
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**Article Designer:** Bhavika Jeswani

**Sources:** Business Standard,  
Financial Express, Civils Daily,  
Live Mint

# KEY HIGHLIGHTS OF DRONE RULES 2021

READ TIME : 3 MINS



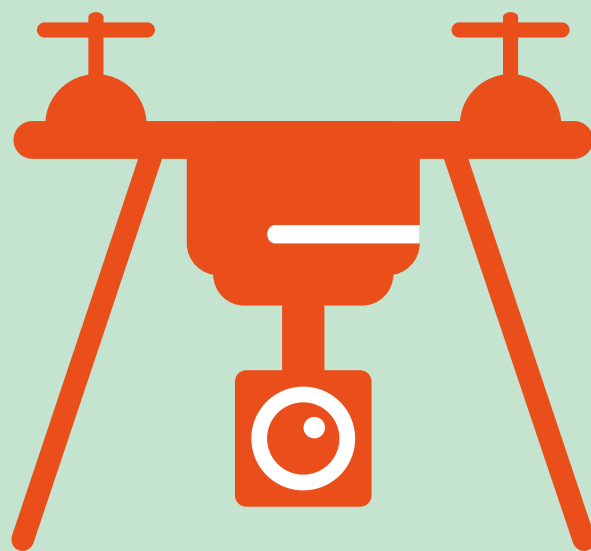
The Ministry of Civil Aviation notified the Drone Rules 2021 on 25th August 2021. The Drone Rules supersede the erstwhile Unmanned Aircraft System Rules 2021 and has significantly reduced the approvals, compliance requirements and entry barriers for drone operators in India.

The UAS has been classified into three categories i.e., airplanes, rotorcrafts and hybrid UAS, respectively. They have been sub-categorised into remotely piloted aircraft system, model remotely piloted aircraft system, and autonomous UAS. There also is a further sub-classification based on 'maximum all-up weight including payload. A type certificate is mandatory to operate UAS in India, which can be obtained by making an application on the digital sky platform along with requisite fee and details. These Rules also propose acceptance of approvals granted by certain foreign regulators.

It is mandatory for the owners of UAS to install certain safety features such as 'No Permission - No Take off' hardware and firmware, real-time tracking beacons, geo-fencing capabilities, etc. The Drone Rules classifies the airspace into three colour-coded zones i.e. green zone, yellow zone, and red zone. Prior permission is required for UAS operations in the red and yellow zone. The Central Government will publish an interactive map segregating the colour-coded zones. Interactive nature of these maps will enable the UAS pilots to plot their proposed flight plan to identify the zone within which it falls in order to assess whether they need to obtain prior approval.

As regular updates are made on the airspace maps, a remote pilot is required to mandatorily verify the Digital Sky Platform for any notification or restriction applicable to UAS. All the data uploaded on the Digital Sky Platform can be accessed by the relevant authorities. UAS operations should be carried out in a way that does not endanger the safety and security of any person or property. Additionally, there are restrictions on carrying certain types of goods. Any accident should be reported within 48 hours. UAS operators cannot violate the right of way of a manned aircraft and are required to remain clear of all manned aircrafts. Any person operating UAS must hold a valid remote pilot license.

The applicant must meet the eligibility criteria, complete the training program and clear the tests conducted by the remote pilot training organisation. There are certain exemptions for the purposes of research, development and testing which can only take place within a green zone and within the premises of the person where such research, development and testing are being carried out or an open area under such person's control. The provisions under the Motor Vehicles Act 1988 will apply to the third-party insurance of UAS and compensation in case of damage to life or property caused by such UAS.



## Significance of new drone rules:

The new liberalised regime for civilian drones marks a clear shift in policy by the government to allow operations and use of drones while at the same time ensuring security from rogue drones through the anti-rogue drone framework that was announced in 2019. Startups, end-users, and other stakeholders as being restrictive in nature as they involved considerable paperwork, required permissions for every drone flight and very few “free to fly” green zones were available thus the government replace the same with the liberalised Drone Rules, 2021.



Unmanned Aircraft Systems (UAS), offer tremendous benefits to almost all sectors of the economy like – agriculture, mining, infrastructure, surveillance, emergency response, transportation, geo-spatial mapping, defence, and law enforcement, etc. Drones can be significant creators of employment and economic growth due to their reach, versatility, and ease of use, especially in India’s remote and inaccessible areas. In view of its traditional strengths in innovation, information technology, frugal engineering and huge domestic demand, India has the potential to be a global drone hub by 2030.

## Registration of personal drones in India:



One must register the drones, pilots and owners followed by the obtaining of UNI and UAOP License. The pilot must go through the necessary training in order to fly the drone. For every flight, users will be required to ask for permission to fly on a mobile app and an automated process permits or denies the request instantly. To prevent unauthorized flights and to ensure public safety, any drone without a digital permit to fly will simply not take off. The unmanned traffic management platform operates as a traffic regulator in the drone airspace and coordinates closely with the defence and civilian air traffic controllers to ensure that drones remain on the approved flight paths. The Digital Sky Platform is the unmanned traffic management platform that implements “no permission, no takeoff”.



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**Sources:**  
[uavcoach.com](http://uavcoach.com), [rupooneair.com](http://rupooneair.com)

# The Road Ahead For Retail Banking in India

READ TIME: 3 MINS

From retail and mobile banking, to neobank startups, technology has its hand in seemingly every aspect of the banking industry; and, the influence of technology will continue to launch banking into a digitized future. In the current business environment, the Indian banking industry is putting strategic emphasis on retail banking products to ensure profitability and lasting customer relationships.



## The big change in Retail Banking:

Indian high net worth individuals and foreign nationals can open foreign currency accounts in any freely convertible currency with banks operating units at Gujarat International Finance Tec-City, popularly known as GIFT City. This is going to herald a big-bang change in the conservative Indian banking sector, say senior bankers. Any Indian and foreign national, with a minimum net worth of \$1 million, can open foreign currency accounts in any freely convertible currency at IFSC Banking Units (IBUs). The foreign currency accounts in India will help foreign nationals and entities make interest arbitrage as savings/current accounts in foreign countries barely carry any interest. On the flip side, it will be a cheap source of deposits for Indian banks (with 2-3% interest rate). It may also help ease the credit crunch in the domestic market.



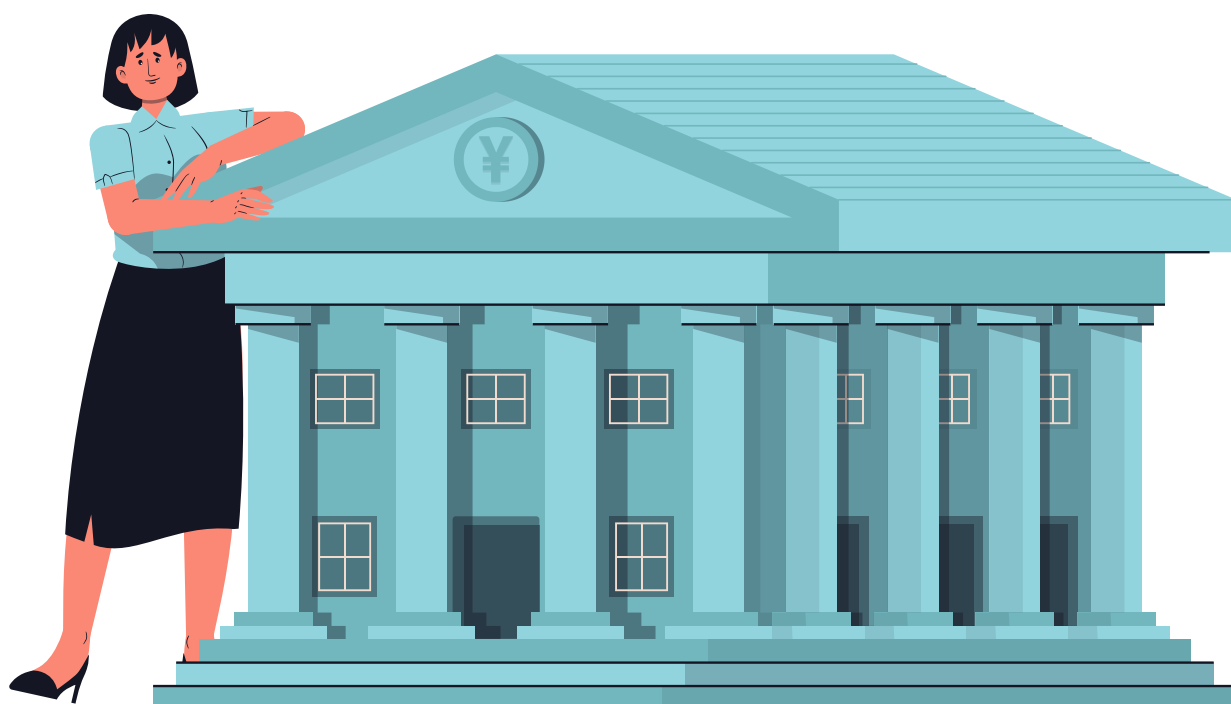
## Some changes/ strategies:

The retail banking industry has massive opportunities in a growing economy like India such as:

<b>ADOPTING TECHNOLOGY</b>	Artificial Intelligence, Machine learning and Deep-learning will be employed as decision - making tools to judge the behavioural aspects of customers. And also risk can be analyzed by AI by checking the credit worthiness of the Borrower Block chain technology will enable revisiting of processes, procedures and internal controls, to create an effective and robust sustainable structure.
<b>ADOPTING ESG APPROACH</b>	Green and Sustainable Banking with an endeavour to allocate resources towards avenues that lead to Environment, Social, and Governance objectives, in line with international standards.
<b>THE STRATEGY OF FOCUSING ON “NET INTEREST MARGIN”</b>	as a tool of gauging efficiency is important. This will entail an effective business orientation with an eye on profitability through efficient resource management and strong monitoring and recovery mechanisms
<b>PERSONALIZATION</b>	The bank’s database stores customers’ demographic and financial information. This data helps banks in creating innovative personalized products for various segments and categories of customers belonging to different regions. Some areas where the banks are launching new and personalized products are mutual funds, insurance, car loans, and securities, etc.
<b>MULTIPLE DELIVERY AND CONTACT CHANNELS</b>	Customers prefer multiple means of communication to contact their banks. Therefore, banks should provide high-quality service channels like mobile banking, internet banking, web chat services, telephone banking, etc.

## Conclusion:

In conclusion there is going to be a massive paradigm shift in terms of product development and technological innovation in coherence with law and regulation.



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**Sources:** enterprise edges,  
business insider,  
enterslice, resurgent india

# The Role of Finance in Sustainable Development

READ TIME: 3 MINS



Over the last few years, sustainable development has taken a CenterStage in formulating government policies and business strategies. From the Paris Climate Accords to the issuance of greens instruments, countries and corporates globally have pivoted towards incorporating sustainability values in every aspect of their operation. Finance has historically been one of the most vital elements in effecting any change. For the successful promotion of this critical shift, the role of finance cannot be overstated.

Finance as a function holds the power to affect and integrate change due to its globally integrated ecosystem. For example, over the past decade, renewable energy gradually improved financial feasibility to become economically viable. The opportunity attracted enormous investments (leading to lower financing costs), incentives from government entities (direct impact on the bottom line), and long-term value creation (since it's RENEWable!). As of today, renewable energy is a \$600 Billion industry. Such examples clearly outline the potential cascading benefits of the finance industry.

Since the bottom line is the core objective of any business, the financial materiality of sustainability practices is essential to determine change. Financial materiality refers to the impact of practices/policies on business performance. It could be due to cash flows generated or costs incurred (primarily, external financing costs) by the business.



Finance can affect the adoption of sustainability practices at multiple junctures in the ecosystem. One of the core catalysts has been funding for initiatives to incentivize investments in this area. Recently, ESG investing has gained a lot of popularity amongst investors globally. According to a Bloomberg report, ESG assets account for \$30.6 trillion of the Global AUM and may hit \$53 trillion by 2025, accounting for a third of global AUM. Green instruments have also witnessed exponential growth over the past decade, reaching \$1 Trillion in cumulative issuance in Dec 2020. One of the popular instruments is the Green bond.



They have originated from around 67 nations and multiple supranational institutions. Impact Investing is another prominent example. Such trends highlight the change in investor attitude towards the sustainability challenges and their expectations from companies. Businesses are motivated to leverage this opportunity for easier access to capital. They could also engage in the redeployment of capital towards activities that are better aligned with the investor's demands. Adoption of transformative and innovative ways becomes essential for survival as well as building the correct consumer perception.

Similarly, for higher cash flow generation, institutions encourage investments in environmentally friendly technologies and innovations. Carbon Credit trading is a highly effective tool introduced to stimulate faster adoption. Being an electric car manufacturer and contributor to the green energy ecosystem, Tesla makes around \$350-450 million in revenue every quarter by selling carbon credits. This additional revenue (~7% of total revenue) has been extremely crucial to keeping Tesla profitable in a few quarters. Another approach could be focusing on the financial risks posed due to social and environmental risks. For example - due to extreme weather conditions, claims led to the most expensive year for many European insurance companies in 2019. An integrated financial risk management approach would collectively benefit every player.

We have entered a new era where the focus has shifted from the sole aim of maximizing profits or increasing shareholder value. Organizations are adapting to operate within social and environmental constraints owing to sustainability awareness and concerns. They stand to gain from the short-term and long-term financial benefits that generate positive value for society. Organizations that fail to address them would put their existence at risk. Every user and supplier of finance in the entire value chain has the potential to contribute effectively to address contemporary challenges. This nexus can not only facilitate but also accelerate robust solutions.



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**Article Designer: Suhani Agarwal**

**Sources: Bloomberg,  
Statista, ClimateBonds**

# Deep Tech

*A look at how it could change the future  
For the field of technology, change is the only constant. Scientific discoveries and rigorous technological advancements are paving the way for the future. A decade or two ago, something like Blockchain was incomprehensible and today every Tom, Dick, and Harry knows as well as offers “expertise” regarding cryptocurrency. Similarly, Blockchain, AI, Quantum computing, and other such technologies were something that could not be classified into an umbrella industry but now we have an industry for them-- Deep Tech*



## WHAT IS DEEP TECH?

Deep tech or deep technology refers to a class of businesses that develop new offerings based on tangible engineering innovation or scientific discoveries and advances. The fundamental focus of this industry is to invent

novel solutions to society's most pressing problems like chronic illnesses, climate change, food production, and the production of clean energy. Thus, the businesses in this industry most commonly operate in areas such as; agriculture, life sciences, chemistry, aerospace, green energy, etc.

## WHAT MAKES DEEP TECH DIFFERENT?

By its very nature, deep tech cannot be confined to one sector, as a result, aerospace technologies can likely be used to monitor crop conditions or an AI advance applied to the production of clean energy or monitoring of a patient.

Moreover, deep tech startups often need significant amounts of long-term funding as well as extensive research. Ordinarily, startups in this industry own patents and other intellectual property, making it very perplexing for their competitors to imitate their products. However, deep tech businesses garner commercial success steadily because it takes days to achieve real market adoption.




WHAT IS DEEP TECH?


## THE SEVEN FIELDS OF DEEP TECH





In line with a study by BCG and Hello Tomorrow, there are seven up-and-coming fields of deep tech that are very pertinent today. They are as follows:


- 
 • **Advanced Materials-** Photovoltaic films and biodegradable plastic are very common exemplars of advanced materials. Such materials are new or modified versions of pre-existing synthetic or biobased materials.





- 
 • **Artificial Intelligence-** Voice assistants, medical imagery analysis, big-time data analysis are all sure-shot signs that machines can be programmed to perform any task that a human would do.

- 
 • **Biotechnology-** Biotechnology is influencing the current system through genetic manipulation of microorganisms for the development of medicines and vaccines, as well as genetically modified seeds that are more resistant to climate change and pests.

- 
 • **Blockchain-** In its very essence, blockchain is an open ledger that can record verified transactions between two parties efficiently and permanently. Cryptocurrency exists due to this area of technology.

- 
 • **Robotics and Drones-** Deep technology has paved the way to develop more self-sufficient, intelligent robots; helping humans in more hazardous and intense environments.

- 
 • **Photonics and Electronics-** The field of photonics involves the use of lasers, optics, fibre-optics, and electro-optical devices in numerous technology-driven sectors like alternate energy, manufacturing, telecommunication etc. On the other hand, the discipline of electronics focuses on mobilizing electrons to produce electricity.

- 
 • **Quantum Computing-** Quantum computers are a lifesaver when the users need to find something particular in a large database. Typically, quantum computing is used in areas of cybersecurity, financial modeling, cleaner batteries, even AI.

## DAWN OF THE INDIAN DEEP TECH ECOSYSTEM

In the last odd decade, India has accelerated technologically as the tech startup ecosystem has exponentially grown and rooted itself in the economy. In our country, deep tech is also at the centre of the next big wave of information revolution.

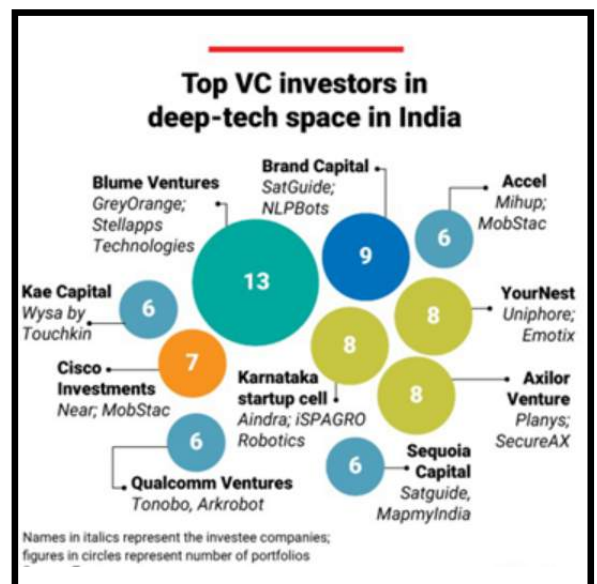
Investors have amplified the amount of capital invested in the case of companies at their growth stage because most scientific risks have been removed, and the initial product-market fit has been achieved in developed economies. There are certain deep tech focused VC funds, for instance, Blume Ventures, YourNest, Bharat Innovation Fund, Qualcomm Ventures etc.

That have been financially supporting ventures across the nation. Due to the presence of far more specialist funds that do not only chase B2C firms but dabble with B2B firms as well, deep tech startups have been able to garner more attention and money. According to The National Association of Software and Service Companies (NASSCOM), in 2020 India had 2,100 deep tech startups. Deep tech is seeing increased adoption across multiple sectors like industrial, healthcare, automotive, and spacetech. Uniphore, Emotix, GreyOrange, Entropik Technologies, Bankbazaar are some of the very well-known Indian deep tech startups.



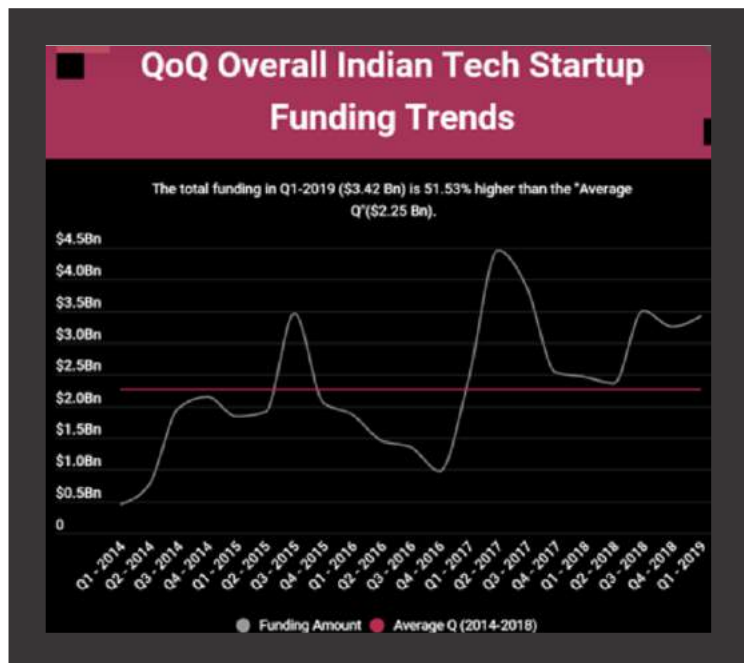
Deep tech is moulding the future of the global economy. It has an undefeated sense of purpose-to directly or indirectly respond to the major challenges endured by our planet and the society. In accordance with BCG experts, deep tech innovations will shape the future civilisations. It will continue to have a profound impact on almost all the important segments of the economy like the automotive industry, robotics, smart homes, smart cities, healthcare, fintech, agritech, edtech, energy efficiency. The pandemic has further necessitated access to smart automation and

hands-free tech thus, every industry of the economy is waiting to be radicalised by such technologies. The Deep Tech Investment Paradox report calls for a new investor model (and ecosystem) and estimates that deep tech investments could exceed \$200 billion by 2025 if it is mobilized into action. Deep tech will certainly make what was once impossible, possible.





## THE CHALLENGES FACED BY THE DEEP TECH INDUSTRY



- The major impediment of the industry is **funding** as deep tech startups require more capital than general tech startups thus, it becomes difficult for such ventures to commercially scale their innovation. Often investors also fail to analyze the potential value of new technologies due to lack of expertise in unseen technologies and algorithms.
- Secondly, it requires **concerted R&D** to develop practical business applications and bring them from the lab to the consumer market.

- Another big barrier encountered by the industry is the **marketing of the product**. Firms find it difficult to obtain adequate market information, furthermore, it becomes very strenuous to educate the market about the technologies, as a result making the promotional process more complex.
- In addition, in the business environment, **commercialization** may be hampered by a lack of matching business infrastructure and human talents. Since this technology is new to the market, training partners and determining the methods of distribution also pose a challenge.
- Commercialization of deep tech may be faced with **legal and industrial bottlenecks** if the tech results in environmental pollution or it violates certain industrial or cultural rules. For instance, biotech startups in Asia face many challenges from the government due to strict regulations, as this technology raises concerns over biosafety, food safety and ethics.




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**Editor - Krish Subramaniam**  
**Article Designer- Prachi Ramchandani**

**Sources: Academy, Dq India, Proplex.**

# Breaking Down the Binomial Model to Value an Option

READ TIME: 3 MINS

Option Value	=	\$ 50.00	\$ 52.00	\$ 54.08	\$ 56.24
			\$ 48.00	\$ 49.66	\$ 51.89
				\$ 46.08	\$ 47.92
					\$ 44.24
Time Step:		0 (Today)	1	2	3

 Investopedia

## WHAT IS A BINOMIAL OPTION PRICE MODEL?

The binomial option pricing model is an options valuation method developed in 1979. The model is intuitive and is used more frequently in practice than the well-known Black-Scholes model.

The model is a way for investors to evaluate options — the right to buy or sell specific securities at specified prices — over time.

## THE BASICS

When you toss a coin, you have an equal probability of getting heads/tails. Similarly, in a binomial option pricing model says there are two possible outcomes in every iteration. Of course, unlike in a coin toss, the probabilities in each iteration of the binomial options pricing model are not set at 50/50 – the probabilities can change in every time period based on new information. The model assumes that the price of the stock can either go up or down. In order to value, the investor needs to be acquainted with the current price of the stock, strike price of the option and also the expiration day of the option.

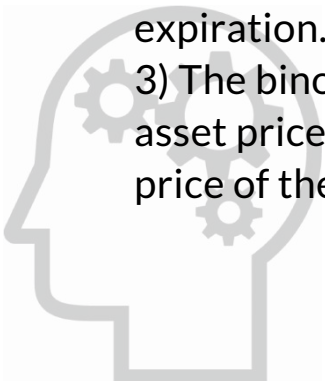
## AN EXAMPLE

Let us assume that the current price of Stock A is Rs.1000. The strike price is also Rs.1000. The expiration is after a month. The investor is confident that the price at the end of the month will either rise to Rs.1200 or fall to Rs.800. The investors feels that there is a 55% probability of the price going to Rs.1200 and a 45% probability of the price going to Rs.800. The investor will use this information in the binomial options pricing model to find out what the current value of the option should be.

## ADVANTAGES AND DISADVANTAGES OF THE MODEL

### ADVANTAGES

- 1) The model is mathematically simple to calculate.
- 2) The model is useful for options where the holders have a right to exercise at any time until expiration.
- 3) The binomial model provides a multi-period view of the underlying asset price as well as the price of the option.



## DISADVANTAGES

- 1) The most significant limitation of the model is the inherent necessity to predict future prices.
- 2) A notable disadvantage is that the computational complexity rises a lot in multi-period models.

While both the Black-Scholes model and the binomial model can be used to value options, the binomial model has a broader range of applications, is more intuitive, and is easier to use.

## GLOSSARY

- 1) Black Scholes model :- The Black-Scholes model, aka the Black-Scholes-Merton (BSM) model, is a differential equation widely used to price options contracts.
- 2) Strike price of an option :- The strike price of an option is a fixed price at which the owner of the option can buy, or sell, the underlying security or commodity.

**Sources :- Investopedia,  
Magnimetrics**

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# Commonwealth Fusion Systems

READ TIME: 3 MINS



**Commonwealth Fusion Systems** is an American firm that uses the ARC tokamak technology to build a compact fusion power plant. To tackle climate change, CFS intends to commercialise fusion, a safe and practically endless source of "clean energy."

Yes, this may be the Breakthrough in Clean Energy space, the energy innovation investment fund founded by Jeff Bezos and Bill Gates is funding the startup. so we may be looking at something that is gonna change the world, but how does this technology work well keep reading and you will find out and believe me it's legendary!

## About the Company

To meet our expanding energy demands and battle climate change, the world requires a fundamentally new source of sustainable energy. Scientists have been researching fusion for decades and have made great progress, but it has yet to realise its commercial potential. However, with the realisation that successfully deployed fusion power will revolutionise the world's energy environment, its potential has continued to stimulate attention.

CFS is on track to commercialise fusion energy technology. CFS is a spin-off from MIT that blends the Plasma Science and Fusion Center's decades of research expertise with the business sector's creativity and speed. CFS is in a unique position to provide the quickest route to commercial fusion energy.

CFS is dedicated to collaborating with world-class research and technology wherever it can be found. Our Open Innovation programme, which involves continuing collaborations with US National Labs, academic institutions, startups, and Fortune-500 firms, is marked by excellence in partnerships and a high level of transparency. Our doors are open, and we have a clear technical roadmap to commercial fusion, considerable contractual and financial experience, and a track record of execution. but when there are new forms of renewable energy available then why fusion?



## Why fusion?

Nuclear fusion is at the heart of Commonwealth Fusion Systems. It is the process in which two atoms collide and fuse to form a single heavier atom, releasing energy. It is the source of the sun's energy.

The benefits of fusion are numerous:- **Clean Energy:** The majority of energy consumed across the world is produced by burning carbon-based materials, which releases gases into the atmosphere, warming the earth.

Other clean energies are essentially constrained – wind energy, for example, is dependent on the wind blowing while solar energy is dependent on the sun shining.

The biggest advantage it offers is that Reactors can be placed near population centres or cities because they are generally safe, which helps with infrastructure. We don't actually want another disaster like Chernobyl. On the other hand, fusion has one big problem: With the present technology, fusion slurps all the energy it creates to sustain the reaction, leaving no "net energy" to power other things.



## The Fusion solution

The condition of matter plasma is highly delicate. The fusion reaction will halt if it is stopped. As a result, scientists created the tokamak, a gadget that employs magnetic fields to securely confine a doughnut of plasma inside a container.

Sorbom and his colleagues are working on creating better magnets for the tokamak. Greater and stronger magnets provide better plasma insulation, and the more effectively the plasma can be heated, the more energy can be created, finally resulting in net energy. Temperatures will be approximately 100 million degrees Celsius, or 180 million degrees Fahrenheit, in the devices that CFS is working on.

## Notable developments

Commonwealth Fusion Systems has received more than \$215 million to far, with the most recent investment round disclosed in May. Commonwealth Fusion Systems has received funding from Breakthrough Energy Ventures, a fund with investments from Bill Gates, Jeff Bezos, Ray Dalio, Richard Branson, Jack Ma, Michael Bloomberg, and others, as well as The Engine, a venture capital firm affiliated with MIT.

CFS HTS magnets will allow for much stronger magnetic fields and hence smaller tokamaks. Fusion power plants will offer several benefits over traditional power plants, including the fact that they are carbon-free, dispatchable, have an unlimited fuel source, and are fundamentally safer than other plants.

The world's strongest high-temperature superconducting (HTS) magnet, the crucial technology for a device that could unlock the road to clean commercial fusion energy for the globe, was successfully tested on September 8th by CFS and MIT's Plasma Science and Fusion Center PSFC.

The historic test, which took place at MIT's Plasma Science and Fusion Center, demonstrated that a magnet manufactured at scale can create a sustained magnetic field of more than 20 Tesla, which would allow CFS's small tokamak device, known as SPARC, to obtain net energy from fusion for the first time.





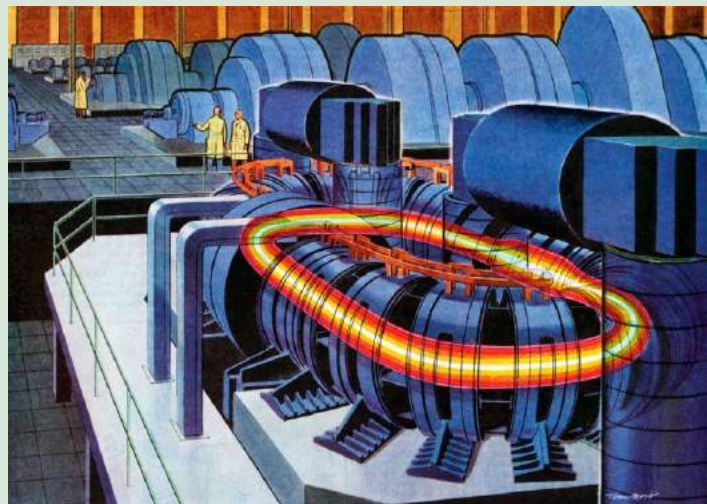
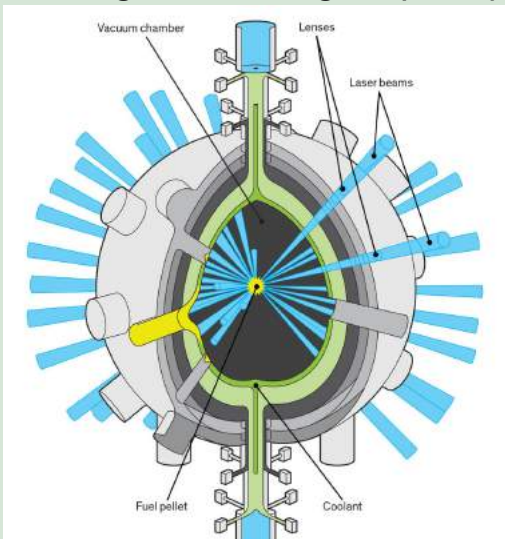
## What the future holds:

CFS claims that its present financing will last until 2021, but that it will seek extra money. According to CFS communications director Kristen Cullen, CFS will generate money by developing and building nuclear fusion power facilities for clients, which may start producing income this decade.

According to CFS, when fusion eventually replaces other power sources, it will be competitive in one of the world's major markets. CFS is also developing commercial uses for its magnet technology, such as MRI scanners and wind turbines.

For now, the company's next goal is to show off its magnet technology this summer, followed by the development of a SPARC, a machine that would show that CFS technology can create net energy, by 2025. CFS would then proceed to build ARC, the world's first grid-connected fusion power plant. CFS estimates that it will be able to produce fusion energy on the grid "in the early 2030s." Sorbom and the CFS team still have a lot of work to do before fusion can be commercialised on a wide scale. However, industry observers remain upbeat.

According to Holland, "fusion power provides an answer to global warming." "Getting it onto the grid quickly enough is the challenge."



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**Sources:** CNBC, CFS.energy, reuters, prnewswire, yahoo

# How small businesses are finding their way

READ TIME: 3 MINS

In India, e-commerce has changed the way people do business. From US\$ 46.2 billion in 2020, the Indian e-commerce sector is predicted to expand to US\$ 111.40 billion by 2025. A surge in internet and smartphone usage has sparked most of the industry's growth. The number of internet connections in India expanded dramatically to 782.86 million in April 2021, thanks to the 'Digital India' programme. 61 percent of all internet connections were made in metropolitan areas, with 97 percent of those connections being wireless.





After making a survey and taking opinions of various small business owners here are my findings. There has been a wide out cry amongst teens and college youth for financial independence and enterprise building. This is supported by the fact that the majority of businesses surveyed were less than 6 months old. And although the go to business to create online is selling a product there are a rare few services also coming up. 90% of all small businesses surveyed used social media as their main source of marketing and sale. This is helped by the introduction of business features on social media like facebook marketplace and instagram business accounts. Social media is no longer just a means for entertainment, it is now a platform for budding businesses. Small businesses prefer to keep stock of their product. And the go to a place to store the stock is their homes; this helps lower their own costs. There is a vast disparity between the business owners and consumers in the matter of payment, consumers prefer cash on delivery whereas business owners prefer online payment both consider their own opinions for their own safety.



The Indian logistics sector has been booming, due to which business owners have a wide range of logistics service providers to choose from. No definite majority was made during the survey leading me to believe that no one is superior from the rest but it must be noted that costs vary vastly from provider to provider. Online solutions provider shiprocket has made a great impact on the logistics sector, claiming to make logistics simple, easy and cost effective for the average business owner.

Although there is an outcry for independence, it is also seen that business owners would prefer professional guidance and help in matters of marketing, I.T., sales and more.

The small/home online business sector has blossomed due to factors such as covid and the high dependency of computers and web services. This relatively new sector can see much growth in the near future as business owners refine and master their skills and products



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**Sources: Survey,**  
<https://www.ibef.org/industry/ecommerce.aspx>

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