

# **Advanced Financial Instruments for Sustainable Business and Decentralized Markets**

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**Lecture 1, Week 1**

Hello and welcome to this specialization on Advanced Financial Instruments for Sustainable Business and Decentralized Markets at IIT Kanpur. Here, I am a Faculty of Finance and Accounting at Department of Management Sciences, DomS, IIT Kanpur, where I take courses in the areas of financial markets and banking for management and engineering students. I did my PhD from IM Lucknow, MBA from IIM Kozhikode and B.Tech from IIT, Roorkee. Previously, I have worked in the banking and financial services industry. This includes managerial and analytical roles in investment banking, large corporate banking and credit rating domains.

I have been engaged in several research and consultancy projects by government departments including Ministry of Corporate Affairs and Planning Department of Uttarakhand Government. I have also been involved in several faculty development programs at IIT Kanpur. My current research focuses on the area of financial markets, banking and cryptocurrency. My research articles have appeared in some of the leading international journals, including finance research letters, International Review of Economics and Finance, Applied Economics, and the Journal of Asset Management, among others.

In the domain of finance, the topics related to investing and risk management remain at the centre stage of interest for every human being. In fact, the practice of investing has been known to us for more than centuries now. However, with the rise of modern financial markets and advent of computers, the subject has considerably transformed over the past 40 years. So what motivated us to design the course? Financial services industry has evolved significantly over the last 20 years. While the fundamental concepts to investing and risk management with financial products remain the same, the speed and capacity are unrecognisable to what they were just 10 years ago.

Take for example trading in financial markets. Today, trading horizons have now reduced a million times. Previously, with the advent of electronic trading, we could execute a trade in few minutes. Contrast this to today. With the help of machine learning

algorithms, a more efficient and informed trade can be executed within a microsecond.

This has motivated academics, practitioners, and policymakers the world over to have a real look at the subject of investment in financial markets and risk management. This course aims to familiarise the students with three broad classes of instruments, including carbon markets, digital currencies, and ESG funds. More recently, with Paris Agreement, Kyoto Protocol, and UN demand for a sustainable economy, the interest of investors in sustainable financial instruments has increased considerably. Moreover, with the rise of cryptocurrencies, investors are also looking aggressively for decentralised digital instruments as a medium of exchange, investment and store of value. In this backdrop, central bank, digital currencies, carbon markets and ESG funds have emerged as key policy instruments to achieve these broad global economic objectives related to sustainable and digital economy.

Furthermore, the course also provides broad financial fundamentals such as risk, return framework, portfolio construction and financial risk management and also discusses the research methods to model this new age financial market data. We have a passion for financial markets, investment strategies, risk management, and the exciting role that technologies such as artificial intelligence and machine learning have played in the domain of finance. By the end of this specialisation, we hope to make you not only aware about these subjects but also help apply these concepts in our day-to-day life and business. We'll introduce the teaching assistants for this course. They have made valuable contributions in designing and structuring of the course.

Mr. Ravi Roshan Jha is a research scholar at Doms IIT Roorkee. He has completed his graduation from the University of Delhi and post graduation from Jamia Millia Islamia University. His areas of interest include climate finance, financial markets, and energy markets. Ms. Charu Wadhva is a research scholar at Doms IIT Roorkee.

She has completed her graduation from the University of Delhi and post-graduation from Jamia Millia Islamia University. Her areas of interest include climate finance, financial markets, market efficiency, and energy markets. Next, Ms. Lagan Jindal is a research scholar at Doms IIT Roorkee. She has one year of teaching experience in financial management and cost accounting.

She has completed her graduation and post graduation from the University of Delhi. Her areas of interest include mutual funds, sustainable finance, security analysis and portfolio management, and financial markets. Ms. Manisha Yadav is a research scholar at Doms IIT Roorkee. She has completed her post graduation from the Delhi School of Economics.

Her areas of interest include mutual funds, security analysis and portfolio management, financial markets, and cryptocurrencies. All the teaching assistants are an integral part of this course and they will be helping me in smooth flow and conduct of this course. Thank you.