

# **Certificate Program on Financial Markets and Modelling**

## **Meghnad Desai Academy of Economics (MDAE) in collaboration with Janki Devi Memorial College**

A 30 hours instructor led, live and interactive certificate program on Financial Markets and Modelling was conducted by Meghnad Desai Academy of Economics in collaboration with Janki Devi Memorial College. Mr. Vignesh Iyer, Principal Engineer at State Street Bank & visiting faculty at IIMs, NMIMS, SP Jain Mumbai was the resource person for the program. Dr. Shilpa Chaudhary, Assistant Professor, Department of Economics, Janki Devi Memorial College was the course coordinator.

The course content was covered over 12 sessions, the duration of each session being 2.5 hours. The program was conducted over the weekends. The objective of the program was to introduce beginners to the financial markets and modelling, to acquaint them with the synergies between various assets. Anyone interested in learning about financial products and modelling could join.

A total of 26 students registered and successfully completed the certificate program. Students were able to understand and learn about the financial market and synergies between various assets. Both theoretical frameworks as well as practical sessions were held. Knowledge about different types of financial products, instruments were disseminated. Interactions held on various topics ranging from different financial assets to understanding asset pricing, overview of risk and their management, different interest rate theories, debt and equity market, real estate market and all types of financial derivatives. In depth knowledge on these topics were shared. Session involved real life cases and examples which made students understand the concept with much more clarity. Practical classes on basic financial calculations, corporate valuations, portfolio modelling to assets pricing, duration and Monte Carlo methods were held. So, this entire program was a blend of theoretical and practical knowledge which will go a long way with students. Definitely money invested by students must have given more than 10 times a return. Amazing session!!!

The 30 hour long intensive online training was followed by 10 hours of project and assignment, so that the students could apply what they have learnt during the program giving them a better perspective of the subject.

# Session-Wise Course Curriculum

## Session 1

- Financial Markets and Players
  - Role of Governments in Financial Markets
  - Financial Institutions, Financial Intermediaries, and Asset Management Firms
  - Overview of Private Market Participants
  - Credit Rating Agencies and Their Role in Financial Markets
  - Depository Institutions: Activities and Characteristics
  - Central Banks
  - Insurance Companies
  - Investment Banking Firms

## Session 2

- Understanding Risks and Asset Pricing
  - Overview of Risks and Their Management
  - Properties and Pricing of Financial Assets
  - Return Distributions, Risk Measures, and Risk-Return Ratios
  - Portfolio Selection Theory
  - Asset Pricing Theories

## Session 3

- Interest Rates, Interest Rate Risk, and Credit Risk
  - The Theory of Interest Rates
  - The Structure of Interest Rates
- Primary and Secondary Markets

- Primary Markets
- Secondary Markets
- The Foreign Exchange Market

## Session 4

- Global Government Debt Markets
  - Sovereign Debt Markets
  - Subnational (Municipal) Government Debt Markets
- Corporate Funding Markets
  - The Structure and Trading Venues of the Equity Market
  - U.S. Common Stock Market: Pricing Efficiency, Trading, and Investment Strategies
  - Non-U.S. Equity Markets
  - Global Short-Term Funding and Investing Markets
  - Corporate Debt Markets
  - Market for Asset-Backed Securities
  - Financing Market for Small, Medium-Sized, and Entrepreneurial Enterprises

## Session 5

- Real Estate Markets
  - The Residential Mortgage Market
  - Residential Mortgage-Backed Securities Market
  - Commercial Real Estate Markets
- Collective Investment Vehicles and Financial Derivatives Markets
  - Market for Collective Investment Vehicles
  - Financial Futures Markets
  - Options Markets

- Pricing Futures and Options Contracts
- Applications of Futures and Options Contracts
- Over-the-Counter Interest Rate Derivatives: Forward Rate Agreements, Swaps, Caps, and Floors
- Market for Foreign Exchange Derivatives
- Market for Credit Risk Transfer Vehicles

## Session 6

- Basic Financial Calculations
  - PV and NPV
  - IRR and Loan tables
  - Future Value

## Session 7

- Corporate Valuation
  - Cash flows
  - WACC

## Session 8

- Portfolio Models
  - Introduction
  - Efficient Frontier
  - Variance Covariance Matrix

## Session 9

- Betas and Security Market Line
- Black-Litterman approach to Portfolio Optimization
- Event Studies

## Session 10

- Option Pricing Model
- Black Scholes Model

## Session 11

- Bonds
  - Durations
  - Convexity
  - Default Adjusted expected bond returns

## Session 12

- Monte Carlo Methods
  - Simulation of Stock Prices
  - VaR
  - Option Pricing

### List of students Enrolled

Name	Email id
Tanisha Bhatt	tanishabhatt12@gmail.com
Yash Agarwal	yagr99@gmail.com
Naveen Kumar	nk.cs.du@gmail.com
Yash Rawat	yr08199808@gmail.com
Neil Sharma	iamneilsharma13@gmail.com
Aparna Verma	aparna.19eco164@jdm.du.ac.in
Shivam Rajinder Kaushik	shivamkaushik90@gmail.com

Gargi Manral	gargimanral2001@gmail.com
Shubhangi Chaturvedi	chaturvedi.shubhangi1@gmail.com
Sanya Kumari	sanyakumari500@gmail.com
Srishti Simran	srishtisimran24@gmail.com
Soumya Sharma	ss.soumya05@gmail.com
Kashish Sachdeva	sachdevakashish75@gmail.com
Pratiksha Deshmukh	dpratiksha2001@gmail.com
Kritika	Nagalkritika@gmail.com
Khushi Jain	khushijainx1108@gmail.com
Aakansha Jain	jain.akansha26@gmail.com
Nikita	nikkiahlawat25@gmail.com
Jahnvi Bhateja	jahnvi.bhateja@gmail.com
Rashi Goyal	rashi.goyal2002@gmail.com
Aditi Tomar	aryanaditi6@gmail.com
Angaja Khankeryal	angaja.19eco1574@jdm.du.ac.in
Shuchita	shuchitaiv1963@gmail.com
Yashvi Jain	jainyashvi05@gmail.com
Rajasi Chakraborty	rajasi.20eco1091@jdm.du.ac.in
Abhishek Vijaygopal	abhishek.vijaygopal@gmail.com


University of Delhi | Certificate Program on Financial

meghnaddesaiacademy.knorish.com/page/certificate-program-on-financial-markets-and-modelling

Self Paced Courses | Economics Courses | Free Courses | Data Science Courses | Cart (0) | Login

# Presents

## Certificate Program on Financial markets and modeling



ENROLL NOW

30 Hours | Live Interactive | Starts 5th September, 2021 |  
Saturday-Sunday | Time 1:00 PM to 3:30 PM(IST)  
7 Day Money Back Guarantee

14:04 11-11-2021

University of Delhi | Overview - Meghnad Desai Acad

meghnaddesaiacademy.knorish.com/user/course/curriculum/0991bd46-8309-44a8-bdf1-c2c7873b4b7b

No Image | Continue watching

Content | Chat

### RECORDINGS

Total Chapters: 12

### Study Material

Total Chapters: 3

- Secondary Markets   
[Download - ancial Markets\).pptx](#)
- Over View Of Risks and Their Management   
[Download - ancial Markets\).pptx](#)
- The Theory Of Interest Rates   
[Download - ancial Markets\).pptx](#)

14:09 11-11-2021

← → ↻ meghnaddesaiaacademy.knorish.com/course/play/0991bd46-8309-44a8-bdf1-c2c7873b4b7b ☆ ⚙️ 🗄️ 🗨️ 👤

☰ Overview ⏪ Previous ⏩ Next 🗨️ Chat 👤

# Classification of Financial Markets

Classification by nature of claim: Debt market / Equity market

Classification by maturity of claim: Money market / Capital market

Classification by seasoning of claim: Primary market / Secondary market

Classification by immediate delivery or future delivery: Cash (spot) market / Derivatives market

Classification by organizational structure: Auction market / Over-the-counter market / Intermediated market

Classification by Region: Developed / Emerging / Frontier

Vignesh Iyer

University of Delhi Financial Markets & Modelli Janki Devi Memorial College - C

← → ↻ meghnaddesaiaacademy.knorish.com/course/play/0991bd46-8309-44a8-bdf1-c2c7873b4b7b ☆ ⚙️ 🗄️ 🗨️ 👤

☰ Overview ⏪ Previous ⏩ Next 🗨️ Chat 👤

European Central Bank - Wikipe us rate fed dot plot - Google Se Fed Maintains Dovish Stance; B

← → ↻ bondevalue.com/news/fed-maintains-dovish-stance-to-not-hike-rates-before-2024-dot-plot/

**BondEValue** Search by Issuer, ISIN or Guarantor TRACK Vignesh Iyer

**Latest Fed Dot Plot**

Implied Fed Funds Target Rate

Source: US Federal Reserve, Bloomberg

The FOMC in its [latest statement](#) kept rates unchanged and maintained its stance on inflation "to achieve inflation moderately above 2% some t 2% percent over time and longer-term inflation expectations remain well anchored at 2%." In the [Summary of Economic Projections \(SEPs\)](#), the F for growth, unemployment and inflation for 2021, 2022 and 2023. Besides, the dot plots also saw a change – 7 officials in the March meeting se December while 4 officials see a hike possibility next year vs. none in December. With that, the median Fed Funds Rate's projected path was ke recent inflation pick-up was termed "transient" by Fed chair Jay Powell. "I thought this was one of the best press conferences we've seen from P

REGISTER FOR A FR

🖥️ 📱

🔍 Type here to search

27°C 13:59 12-09-2021 ENG IN 📶 🔊

14:20 11-11-2021



University of Delhi Overview - Meghnad Desai Acad Janki Devi Memorial College - C

meghnadesaiacademy.knorish.com/user/course/curriculum/0991bd46-8309-44a8-bdf1-c2c7873b4b7b

Meghnad Desai Academy of Economics

# Financial Markets & Modelling

Progress (46%)

Continue watching

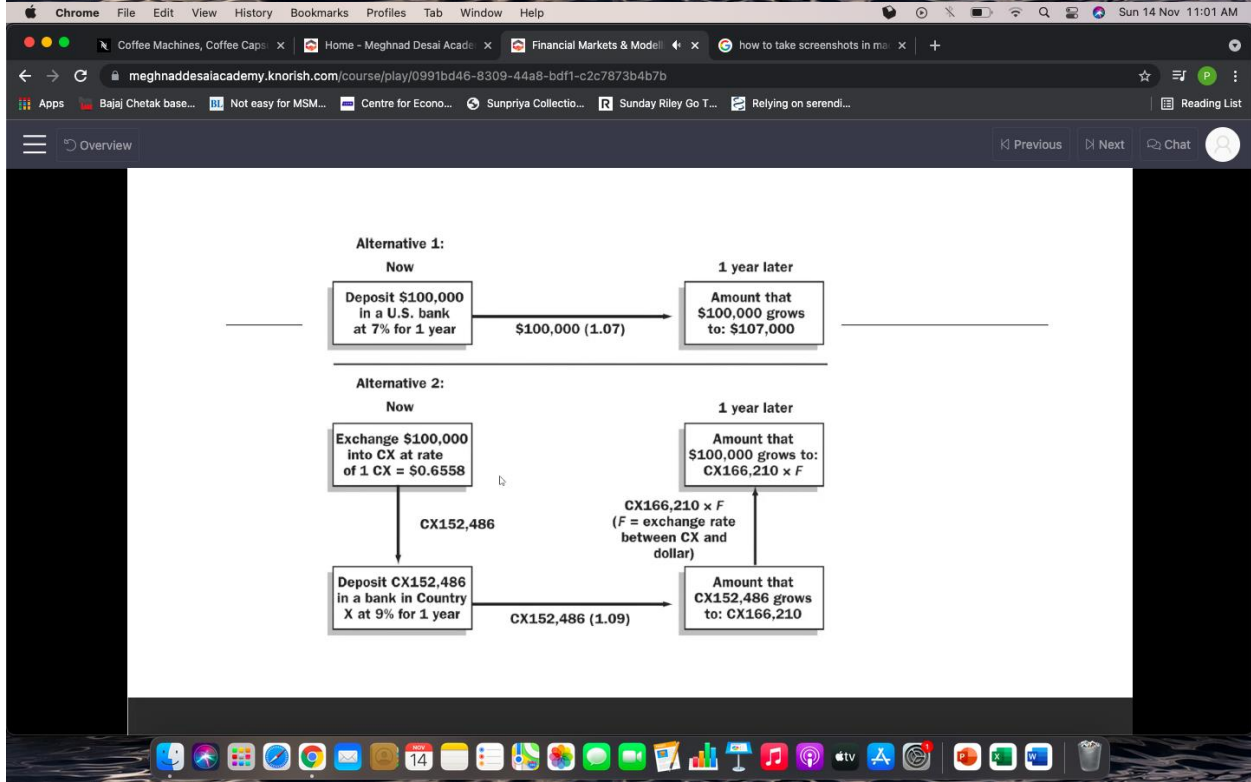
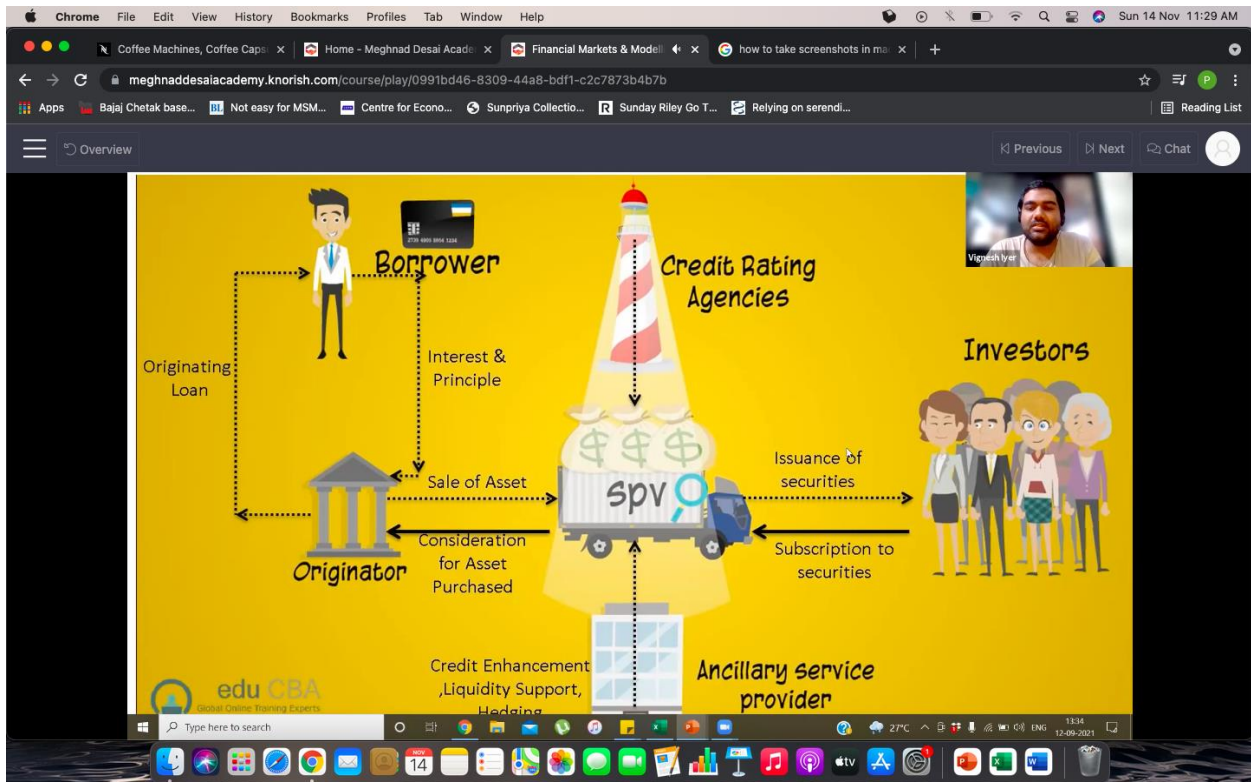
Content Chat

### RECORDINGS

Total Chapters: 12

Session 1	✓
Session 2	✓
Session 3	✓

Windows taskbar: ENG IN 14:23 11-11-2021



Chrome File Edit View History Bookmarks Profiles Tab Window Help Sun 14 Nov 9:23 PM

Home - Meghnad Desai Acad... Financial Markets & Model...  
 meghnadesaiacademy.knorish.com/course/play/0991bd46-8309-44a8-bdf1-c2c7873b4b7b

Overview Previous Next Chat

JupyterLab COVID-19 Tweets - Eds - VIZ Last checkpoint on your app (unsaved changes)

```

In [14]: percent_class(class_of_tweet,
         label=class_of_tweet)
         colors = ['RISKY', 'WISDOM', 'WACAK']
         fig, ax = plt.subplots(figsize=(10, 10), subplot_kw={'aspect': 'square'})
         plt.setp(ax, width=0.8, edgecolor='black')
         plt.show()
  
```

```

In [14]: fig = make_subplots(1, 1, subplot_kw={'width': '100%', 'height': '100%'})
         fig.add_trace(go.Scatter(x=[1, 2, 3], y=[1, 2, 3], mode='lines')))
         fig.show()
  
```

15:42

Chrome File Edit View History Bookmarks Profiles Tab Window Help Sun 14 Nov 9:02 PM

Home - Meghnad Desai Acad... Financial Markets & Model...  
 meghnadesaiacademy.knorish.com/course/play/0991bd46-8309-44a8-bdf1-c2c7873b4b7b

Overview Previous Next Chat

Excel - beta.xls (Compatibility Mode) - Excel

Time period	Index	Price/Stock	DF2/Stock	Split Factor	Index Level	Return/Stock	Return/Ind	R(Rt-Rf)^2	(Rt-Rf)^2	(Rt-Rf)^2
1	1	\$30.75			179.63					
2	1	\$30.00			181.59	-0.84%	0.07%	0.011087340	0.000000000	-0.000000000
3	1	\$27.75	\$0.00	1	180.66	-0.99%	-0.29%	0.000147875	0.000197889	0.000345774
4	1	\$27.50		1	179.83	-0.99%	-0.40%	0.000167842	0.000247412	0.000391261
5	1	\$26.38		1	189.55	-4.07%	-5.41%	0.001380751	0.001541781	-0.002489788
6	1	\$26.00	\$0.00	1	191.85	-1.44%	1.23%	0.000186299	0.000606507	-0.002288495
7	1	\$28.25		1	190.92	8.62%	8.62%	0.000994056	0.000225444	-0.001129527
8	1	\$26.00		1	188.63	-7.96%	-1.20%	0.009120265	0.000534988	0.002091488
9	1	\$25.75		1	182.00	-0.94%	-3.87%	0.000095288	0.000210386	0.000130528
10	1	\$25.50		1	189.82	-0.97%	4.23%	0.000054046	0.000984211	-0.000802021
11	1	\$28.50		1	202.17	11.70%	6.51%	0.010359469	0.002808074	0.005488725
12	1	\$29.25	\$0.00	1	211.20	2.63%	4.51%	0.000189027	0.001158974	0.000954514
13	1	\$28.25		1	211.70	-0.42%	1.26%	0.000296005	0.000182005	0.000000897
14	1	\$27.75		1	226.92	-1.77%	7.15%	0.011120589	0.00364263	-0.002825771
15	1	\$26.00	\$0.00	1	238.90	6.31%	5.70%	0.006297011	0.001735461	-0.002288078
16	1	\$26.50		1	235.52	9.62%	-1.43%	0.004466205	0.000439240	-0.002029588
17	1	\$27.25		1	247.55	-4.89%	-5.02%	0.005507110	0.000238859	-0.002348111
18	1	\$23.00	\$0.00	1	250.64	-15.60%	-1.41%	0.002625166	8.845702e-06	-0.000611003
19	1	\$19.25		1	236.12	-20.45%	-5.89%	0.049486131	0.000748539	0.019538616
20	1	\$23.00		1	252.93	22.01%	7.12%	0.057795041	0.000506809	0.014075567
21	1	\$19.50	\$0.00	1	231.32	-15.22%	-9.54%	0.028237292	0.000104686	0.014202001
22	1	\$20.25		1	243.90	3.85%	5.47%	0.002610977	0.000300463	0.000095088
23	1	\$23.00		1	249.22	13.57%	2.15%	0.014384856	0.000188959	0.001201299
24	1	\$21.00	\$0.00	1	242.17	-8.70%	-2.81%	0.010722005	0.000254109	-0.004055919
25	1	\$31.25		1	274.00	40.81%	13.18%	0.220000046	0.014552047	0.056095945

Risk&RetWS

Ready Calculate Type here to search

33°C Smoke 11:27 23-10-2021

Chrome File Edit View History Bookmarks Profiles Tab Window Help

Home - Meghnad Desai Acad... Financial Markets & Model... +

meghnadesaiaacademy.knorish.com/course/play/0991bd46-8309-44a8-bd11-c2c7873b4b7b

Apps Bajaj Chetak base... Not easy for MSM... Centre for Econo... Sunpriya Collectio... Sunday Riley Go T... Relying on serendi... Reading List

Overview Previous Next Chat

COVID-19 tweets eda viz - Jupyter COVID-19 tweets eda viz - Jupyter


localhost8888/notebooks/NLP/tweet/covid-19-tweets-eda-viz.ipynb

jupyter COVID-19-tweets-eda-viz Last Checkpoint: an hour ago (unsaved changes)


Python 3 (ipykernel)

```
wordcloud3 = WordCloud(width = 800, height = 800,
background_color = 'white',
colorspace = 'grays',
stopwords = stopwords,
min_font_size = 10).generate(comment_words)
ax3.imshow(wordcloud3)
ax3.axis('off')
ax3.set_title('Neutral Sentiment', fontsize=35);
```


Positive Sentiment



Negative Sentiment



Neutral Sentiment



```
In [82]: del df_pos
del df_neg
del df_neu

In [83]: # Define functions
def generate_ngrams(text, n_gram=1):
    token = [token for token in text.lower().split(' ') if token != '' if token not in STOPWORDS]
```

17:33

macOS dock with various application icons including Safari, Mail, Photos, Messages, App Store, and others.

Chrome File Edit View History Bookmarks Profiles Tab Window Help Tue 23 Nov 1:07 PM


Inbox (662) - pankaj@j... 6c. Add-on Course - Go... CFA 2019-20.docx - Go... CFA 2018-19.docx - Go... MDAE - Google Docs x Certificate Program on F... +

meghnaddesaiaacademy.knorish.com/page/certificate-program-on-financial-markets-and-modelling

Apps Nespresso World... Reading List


Meghnad Desai Academy of Economics

Self Paced Courses Economics Courses Free Courses Data Science Courses Cart (0) Login




**Live Coaching**

30 hours instructor-led, live interactive training & 10 hours of project and assignment.




**Continuous Assessment**

2 assignments




**Industry Project**

1 Industry-led Live Project




**Constant Learner Support**

Digital office hours + teaching assistant + lifetime recording access on LMS.



**Alumni Status**

Industry event invitations + student network access



**Career Enhancement**

1 session of resume building and interview tips

↑

MDAE.docx Show all x

Chrome File Edit View History Bookmarks Profiles Tab Window Help Tue 23 Nov 1:08 PM

Inbox (662) - pankaj@j... 6c. Add-on Course - Go... CFA 2019-20.docx - Go... CFA 2018-19.docx - Go... MDAE - Google Docs x Certificate Program on F... +


meghnaddesaiaacademy.knorish.com/page/certificate-program-on-financial-markets-and-modelling

Apps Nespresso World... Reading List

Meghnad Desai Academy of Economics

Self Paced Courses Economics Courses Free Courses Data Science Courses Cart (0) Login

## Meet Your Course Faculty



**Mr. Vignesh Iyer**

Principal Engineer at State Street & Visiting faculty at IIMs, NMIMS, SP Jain Mumbai

## Session-Wise Course Curriculum

Session 1

↑

MDAE.docx Show all x