LSIB
London School of International Business, U.K.

Professional Certificate in Structured Finance

Financial Engineering Techniques in Structured Finance

A

Asset-Backed Security (ABS)
Asset-Backed Security (ABS) is a financial security backed by a pool of assets such as loans, leases, or receivables. These assets are typically grouped together and sold to investors. ABS allows companies to convert their illiquid assets into cash by selling them to a special purpose vehicle, which then issues securities backed by these assets. Investors receive payments from the cash flows generated by the underlying assets.

Arbitrage
Arbitrage is the practice of exploiting price differences in different markets to generate profits with little or no risk. In financial engineering, arbitrage opportunities arise when the same asset is priced differently in different markets. Traders can buy the asset in the cheaper market and sell it in the more expensive market, capturing the price differential as profit.

Asset-Backed Commercial Paper (ABCP)
Asset-Backed Commercial Paper (ABCP) is a short-term debt instrument that is backed by a pool of assets such as loans or receivables. ABCP is issued by a special purpose vehicle, which uses the proceeds to purchase the underlying assets. Investors in ABCP receive interest payments and the return of principal when the paper matures.

Asset-Backed Securities (ABS)
Asset-Backed Securities (ABS) are financial instruments that are backed by a pool of assets such as loans, leases, or receivables. ABS are typically issued by a special purpose vehicle, which purchases the assets and issues securities backed by them. Investors in ABS receive payments from the cash flows generated by the underlying assets.

B

Basel III
Basel III is a set of international banking regulations that were developed in response to the global financial crisis of 2008. Basel III aims to strengthen bank capital requirements, improve risk management, and enhance the transparency of banks' balance sheets. The regulations require banks to maintain higher levels

of capital and liquidity to withstand financial shocks.

Base Rate
The base rate is the minimum interest rate set by a central bank for lending to commercial banks. It serves as a benchmark for other interest rates in the economy. In structured finance, base rates are often used to determine the interest rates on variable-rate securities such as floating-rate notes.

C

Collateralized Debt Obligation (CDO)
Collateralized Debt Obligation (CDO) is a structured finance product that pools together a portfolio of debt securities and repackages them into tranches with different levels of risk and return. CDOs are typically divided into senior, mezzanine, and equity tranches, each with varying degrees of credit risk. Investors in CDOs receive payments from the cash flows generated by the underlying debt securities.

Collateralized Loan Obligation (CLO)
Collateralized Loan Obligation (CLO) is a structured finance product that pools together a portfolio of loans and repackages them into tranches with different levels of risk and return. CLOs are similar to CDOs but consist of corporate loans instead of debt securities. Investors in CLOs receive payments from the cash flows generated by the underlying loans.

Counterparty Risk
Counterparty risk is the risk that one party to a financial transaction will default on its obligations. In structured finance, counterparty risk is a significant concern, especially in over-the-counter derivatives transactions. To mitigate counterparty risk, parties often use collateral agreements, credit derivatives, or other risk management techniques.

Callable Bond
A callable bond is a type of bond that can be redeemed by the issuer before it reaches its maturity date. Callable bonds typically have a call provision that allows the issuer to repurchase the bond at a predetermined price after a specified period. Investors in callable bonds face the risk that the issuer will call the bond when interest rates are low, forcing them to reinvest the proceeds at a lower rate.

D

Default Risk
Default risk is the risk that a borrower will be unable to meet its debt obligations. In structured finance, default risk is a key consideration when assessing the creditworthiness of a security. Investors often demand higher returns for securities with higher default risk to compensate for the increased likelihood of default.

Derivative

A derivative is a financial instrument whose value is derived from the value of an underlying asset. Common types of derivatives include futures, options, and swaps. Derivatives are used in structured finance to hedge risk, speculate on price movements, or achieve other financial objectives.

Downgrade
A downgrade is a negative revision to the credit rating of a security or issuer by a credit rating agency. Downgrades typically result from deteriorating credit quality, increased default risk, or other adverse developments. In structured finance, downgrades can trigger collateral calls, margin calls, or other contractual obligations.

E

Enhanced Equipment Trust Certificate (EETC)
Enhanced Equipment Trust Certificate (EETC) is a type of asset-backed security that is used to finance the purchase of equipment such as aircraft, ships, or railcars. EETCs are typically issued by airlines, shipping companies, or other transportation companies. Investors in EETCs receive payments from the cash flows generated by the equipment.

Equity Tranche
The equity tranche is the riskiest portion of a structured finance product such as a collateralized debt obligation (CDO) or collateralized loan obligation (CLO). The equity tranche absorbs the first losses from the underlying assets before the more senior tranches are affected. Investors in the equity tranche receive higher returns but also face higher default risk.

F

Fixed-Rate Bond
A fixed-rate bond is a type of bond that pays a fixed rate of interest over the life of the bond. Fixed-rate bonds are popular among investors seeking stable income streams and protection against interest rate fluctuations. In structured finance, fixed-rate bonds are often used to fund long-term projects or acquisitions.

Financial Engineering
Financial engineering is the application of mathematical and quantitative techniques to create and manage financial products and strategies. Financial engineers use tools such as stochastic calculus, probability theory, and computer programming to design innovative solutions for risk management, investment, and financing. Financial engineering techniques are widely used in structured finance to optimize capital structures, hedge risks, and enhance returns.

G

Global Structured Finance Rating Criteria
Global Structured Finance Rating Criteria are the guidelines and methodologies used by credit rating agencies to assess the creditworthiness of structured finance products. These criteria consider factors such as credit quality, asset quality, cash flow characteristics, and structural features of the securities. Rating agencies use the criteria to assign credit ratings that reflect the likelihood of default or loss.

H

Hedging
Hedging is a risk management strategy that involves taking offsetting positions to reduce the impact of adverse price movements. In structured finance, hedging is used to protect against interest rate risk, credit risk, currency risk, or other sources of volatility. Common hedging instruments include derivatives, options, and futures contracts.

High-Yield Bond
A high-yield bond, also known as a junk bond, is a bond issued by a company with a lower credit rating than investment-grade bonds. High-yield bonds offer higher yields to compensate investors for the increased risk of default. In structured finance, high-yield bonds are often used to finance leveraged buyouts, acquisitions, or other corporate activities.

I

Interest Rate Swap
An interest rate swap is a financial derivative that allows two parties to exchange interest rate payments. In an interest rate swap, one party typically pays a fixed rate of interest, while the other party pays a floating rate tied to a benchmark such as LIBOR. Interest rate swaps are used in structured finance to manage interest rate risk, hedge exposures, or speculate on interest rate movements.

Investment-Grade Bond
An investment-grade bond is a bond with a credit rating of BBB- or higher by major credit rating agencies such as S&P, Moody's, or Fitch. Investment-grade bonds are considered less risky than high-yield bonds and are typically issued by companies with strong credit profiles. In structured finance, investment-grade bonds are often used to fund infrastructure projects, public-private partnerships, or other long-term investments.

J

Junior Tranche
The junior tranche is the riskiest portion of a structured finance product such as a collateralized debt obligation (CDO) or collateralized loan obligation (CLO). The junior tranche absorbs losses after the equity tranche but before the more senior tranches. Investors in the junior tranche receive higher returns but also

face higher default risk.

K

Key Rate Duration
Key Rate Duration is a measure of the sensitivity of a bond's price to changes in specific key interest rates along the yield curve. Key Rate Duration helps investors understand how a bond's price will change in response to shifts in different segments of the yield curve. In structured finance, Key Rate Duration is used to manage interest rate risk and optimize portfolio performance.

L

LIBOR
The London Interbank Offered Rate (LIBOR) is the benchmark interest rate at which major banks lend to one another in the London interbank market. LIBOR is widely used as a reference rate for short-term interest rates in financial markets around the world. In structured finance, LIBOR is often used to set the interest rates on floating-rate securities such as floating-rate notes or interest rate swaps.

Leverage
Leverage is the use of borrowed funds to amplify the potential return of an investment. In structured finance, leverage is often used to increase the size of a transaction, magnify returns, or enhance the efficiency of capital structures. However, leverage also increases the risk of losses if the investment performs poorly.

M

Mezzanine Tranche
The mezzanine tranche is the middle portion of a structured finance product such as a collateralized debt obligation (CDO) or collateralized loan obligation (CLO). The mezzanine tranche sits between the senior and equity tranches in terms of risk and return. Investors in the mezzanine tranche receive higher returns than senior investors but face higher default risk.

Mortgage-Backed Security (MBS)
A Mortgage-Backed Security (MBS) is a type of asset-backed security that is backed by a pool of mortgage loans. MBS are typically issued by government-sponsored enterprises such as Fannie Mae or Freddie Mac or by private financial institutions. Investors in MBS receive payments from the cash flows generated by the mortgage loans.

N

Non-Recourse Loan
A non-recourse loan is a type of loan that is secured by collateral, typically real estate or other assets. In a

non-recourse loan, the borrower is not personally liable for repayment of the loan. If the borrower defaults, the lender can only recover the value of the collateral, not the borrower's other assets. Non-recourse loans are commonly used in structured finance to finance large projects or acquisitions.

O

Overcollateralization
Overcollateralization is a risk management technique used in structured finance to enhance the credit quality of securities. In overcollateralization, the value of the underlying assets exceeds the value of the securities issued against them. This provides a cushion of protection for investors in case of defaults or losses on the underlying assets.

P

Principal-Only (PO) Strip
A Principal-Only (PO) Strip is a type of financial product that provides investors with the cash flows generated by the principal repayments on a pool of mortgage loans or other debt instruments. PO Strips are created by separating the principal and interest payments on the underlying assets. Investors in PO Strips receive payments as the principal on the underlying loans is repaid.

Prepayment Risk
Prepayment risk is the risk that borrowers will repay their loans earlier than expected, disrupting the cash flows of securities backed by these loans. Prepayment risk is a significant concern in mortgage-backed securities (MBS) and other asset-backed securities. Investors in securities with prepayment risk may face reinvestment risk if they are unable to find suitable replacement investments.

Private Placement
A private placement is a method of raising capital by selling securities directly to a select group of investors, often institutional investors or high-net-worth individuals. Private placements are not offered to the general public and are exempt from registration with securities regulators. In structured finance, private placements are often used to fund complex transactions that may not be suitable for public markets.

Q

Quantitative Easing
Quantitative Easing is a monetary policy tool used by central banks to stimulate the economy when traditional monetary policy measures are ineffective. In quantitative easing, central banks purchase government bonds or other assets to increase the money supply and lower interest rates. Quantitative easing can impact structured finance by influencing interest rates, credit spreads, and investor behavior.

R

Rating Agency
A rating agency is a company that assesses the creditworthiness of issuers of debt securities and assigns credit ratings based on their ability to repay their debts. Major rating agencies include S&P Global, Moody's Investors Service, and Fitch Ratings. In structured finance, credit ratings from rating agencies play a crucial role in determining the pricing, demand, and risk profile of securities.

Receivables
Receivables are amounts owed to a company for goods sold or services provided on credit. Receivables are a type of asset that can be used as collateral for asset-backed securities or other financing arrangements. In structured finance, receivables are often bundled together and sold to investors to raise capital for the company.

S

Securitization
Securitization is the process of transforming illiquid assets into tradable securities by pooling them together and selling them to investors. Securitization allows companies to monetize their assets, transfer risk, and access new sources of funding. Common types of securitized assets include mortgages, auto loans, credit card receivables, and student loans.

Senior Tranche
The senior tranche is the least risky portion of a structured finance product such as a collateralized debt obligation (CDO) or collateralized loan obligation (CLO). The senior tranche has first claim on the cash flows from the underlying assets and is paid before other tranches. Investors in the senior tranche receive lower returns but have greater protection against losses.

Structured Finance
Structured finance is a specialized area of finance that involves the creation of complex financial products and transactions to meet the specific needs of borrowers, investors, or other stakeholders. Structured finance techniques are used to optimize capital structures, manage risks, and enhance returns in a wide range of industries, including real estate, infrastructure, and corporate finance.

Subordination
Subordination is a structural feature of structured finance products that determines the priority of payment in case of default or loss. Subordinated tranches have lower priority and absorb losses before more senior tranches. Subordination helps to protect investors in the senior tranches by providing a cushion of protection against credit losses.

Swap Spread
The swap spread is the difference between the yield of a fixed-rate bond and the yield of an interest rate swap with the same maturity. Swap spreads reflect the credit risk and liquidity of the bond relative to the

swap. In structured finance, swap spreads are used to assess the relative value of fixed-rate bonds, manage interest rate risk, and optimize portfolio performance.

T

Tranche
A tranche is a portion or slice of a structured finance product that represents a specific level of risk and return. Tranches are created by dividing the cash flows from the underlying assets into different segments with varying levels of credit quality. Investors can choose to invest in different tranches based on their risk tolerance and return objectives.

U

Underwriting
Underwriting is the process by which investment banks or financial institutions assess the creditworthiness of a borrower, issuer, or security and agree to purchase or guarantee the securities being offered. Underwriters play a crucial role in structured finance by pricing and distributing securities to investors, managing risk, and ensuring compliance with regulatory requirements.

V

Variable-Rate Bond
A variable-rate bond is a type of bond that pays a floating rate of interest tied to a benchmark such as LIBOR or the prime rate. The interest rate on variable-rate bonds fluctuates over time based on changes in market interest rates. In structured finance, variable-rate bonds are often used to hedge against interest rate risk or provide flexibility in financing structures.

Venture Capital
Venture capital is a type of private equity investment that provides funding to early-stage, high-growth companies in exchange for an ownership stake. Venture capital investors typically seek to finance innovative startups with the potential for rapid growth and high returns. In structured finance, venture capital can be used to fund new projects, acquisitions, or other strategic initiatives.

W

Warrant
A warrant is a financial instrument that gives the holder the right, but not the obligation, to buy or sell a security at a predetermined price within a specified time frame. Warrants are often used to enhance the yield or return on other securities, such as bonds or preferred stock. In structured finance, warrants can be used to provide additional upside potential or protection against downside risk.

X

XML (Extensible Markup Language)
XML (Extensible Markup Language) is a flexible and customizable markup language that is used to define and structure data in a machine-readable format. XML is widely used in structured finance to standardize data formats, facilitate data exchange between different systems, and support automation in financial transactions. XML allows users to create their own tags and attributes to describe the content of documents.

Y

Yield Curve
The yield curve is a graphical representation of the yields on bonds of different maturities at a specific point in time. The yield curve is typically upward sloping, with longer-term bonds offering higher yields than shorter-term bonds. Changes in the shape of the yield curve can signal shifts in interest rates, inflation expectations, or investor sentiment. In structured finance, the yield curve is used to price securities, manage interest rate risk, and make investment decisions.

Z

Zero-Coupon Bond
A zero-coupon bond is a type of bond that does not pay periodic interest payments but is sold at a discount to its face value. Zero-coupon bonds are purchased at a deep discount and mature at par value, generating a profit for investors. In structured finance, zero-coupon bonds are often used to finance long-term projects, retirement savings, or other financial goals.