**Introduction to the Financial engineering**

**1. Concept of financial engineering**

Financial engineering is a branch of financial science concerned with the creation, innovation and development of financial instruments based on traditional instruments and their installation in order to find solutions to certain financial problems.

Historical circumstances of the emergence of financial engineering:

Historically, financial engineering has emerged as a hinge point in economic history: the collapse of the Bretton Woods system in Friday, 1971, and as an inevitable consequence of the external debt crisis of third world countries.

Your fixed exchange system (Bretton Woods) collapsed and your dollar value allowance became floating, fluctuating, and thus other currencies, resulting in volatility in other currency prices, and your exchange rate risk, which increased other financial risks such as interest rate risk, loan risk, and primary material risk....

Although the International Monetary Fund (IMF) was established in 1944 to stimulate economic growth, price fluctuations imposed by the collapse of the international fixed exchange system imposed the need for instruments to protect against such risks were financial engineering instruments.

Financial Engineering Objectives:

Financial engineering came to achieve three goals.

Financial risk hedging:

It is the primary objective of financial engineering where economic organizations use financial engineering tools to protect their financial positions from the various financial risks they can face.

Financial investment:

Financial engineering tools contribute to financial investment as they work towards an efficient portfolio diversification strategy that reduces portfolio risk.

Speculation:

Financial engineering has overstepped its role in hedging financial risks and raising the efficiency of financial investment to speculate on its financial tools and thus on the capital gains of its traders in the financial markets determined by the spreads on the prices of those instruments.

Factors conducive to the development of financial engineering:  
Financial engineering has mainly met the need to protect against the financial risks faced by economic organizations and there are factors that have helped their development.  
Covering customers' needs:  
The need of economic dealers has created the need to create financial products adapted to different needs. Economic dealers need to create financial products that cover their financing needs more effectively than traditional products in terms of cost, maturity dates, liquidity, etc... Traders need to create financial products that enable them to achieve important investment returns compared to investing in traditional financial instruments where...  
4.2. The development of automated media and communication technology:  
The rapid development of the computer and media technology and the development of the Internet and its access to financial markets have encouraged the intensification of the handling of financial instruments in general, including financial engineering tools. The advent of electronic money has facilitated trading.  
The ease of trading in financial markets encouraged the creation and innovation of financial products within the framework of financial engineering.  
Market development:  
Market development in terms of effectiveness and efficiency has helped in the development of financial engineering  
Market effectiveness is guaranteed by the market's ability to meet the different financial needs of its various clients. It is what dictates that there is diversity in the financial instruments of the market so that it can achieve this characteristic so that it encourages the creation of more financial instruments in the framework of financial engineering.  
The efficiency of the market is the extent to which it is able to include all information about financial instruments in its market pricing and realizes the need to facilitate the handling of financial instruments in terms of low financial transaction costs and thus encouraging the creation of new financial instruments in the framework of financial engineering.

Financial globalization:

The content of financial globalization is the free and unrestricted movement of capital across the world, which has necessitated the liberalization of financial markets and the elimination of borders between countries to financial investment.

This framework encouraged financial investment, which helped to introduce new financial instruments for trading in the framework of financial engineering.