

## The Origins of Derivative Instruments

In financial markets, the term “derivatives” is used to refer to a group of instruments that *derive* their value from some underlying commodity or market. Forwards, futures, swaps and options are all types of derivative instruments and they are widely used for hedging or speculative purposes. While trading in derivative products has grown tremendously in recent times, early evidence of these types of instruments can be traced back to ancient Greece. Aristotle related a story about how the Greek philosopher Thalus profited handsomely from an option-type agreement around the 6<sup>th</sup> century B.C. According to the story, one-year ahead, Thalus forecast the next olive harvest would be an exceptionally good one. As a poor philosopher, he did not have many financial resources at hand. But he used what he had to place a deposit on the local olive presses. As nobody knew for certain whether the harvest would be good or bad, Thalus secured the rights to the presses at a relatively low rate. When the harvest proved to be bountiful, and so demand for the presses was high, Thalus charged a high price for their use and reaped a considerable profit<sup>1</sup>.

A critical attribute of Thalus’s arrangement was the fact that its merit did not depend on his forecast for a good harvest being accurate. The deposit gave him the right but not the obligation to hire the presses. If the harvest had failed, his losses were limited to the initial deposit he paid. Thalus had purchased an option.

There is evidence that the use of a type of forward contract was prevalent among merchants in medieval European trade fairs. When trade began to flourish in the 12<sup>th</sup> century, merchants created a forward contract called a *lettre de faire* (letter of the fair). These letters allowed merchants to trade on the basis of a sample of their goods, thus relieving them of the need to transport large quantities of merchandise along dangerous routes with no guarantee of a buyer at the journey’s end. The letter acted as evidence that the full consignment of the specified

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<sup>1</sup> Siems, T. F. (1997) “10 Myths about Financial Derivatives”, Cato Policy Analysis no. 283.

commodity was being held at a warehouse for future delivery. Eventually, the contracts themselves were traded among the merchants<sup>2</sup>.

The first record of organized trading in futures comes from 17<sup>th</sup> century Japan. Feudal Japanese landlords would ship surplus rice to storage warehouses in the cities and then issue tickets promising future delivery of the rice. The tickets represented the right to take delivery of a certain quantity of rice at a future date at a specified price. These rice tickets were traded on the Dojima rice market near Osaka and in 1730.<sup>3</sup> Trading in rice tickets allowed landlords and merchants to lock the prices at which rice was bought and sold, reducing the risk they faced. The tickets also provided flexibility. Someone holding a rice ticket but not a holder of a rice ticket but not wanting to take delivery could sell it in the market. The rules governing the trading on the Dojima market were similar to those of modern-day futures markets.

Moving forward 200 years, Chicago was central to the 19<sup>th</sup> century development of futures contracts in the US. As in Japan, the seasonal nature of agricultural production was the main impetus behind the development of these financial instruments. Farmers would traditionally bring their harvest to market once a year in search of buyers creating a seasonal glut and driving prices to extremely low levels. At other times of year, shortages would emerge in the urban areas driving prices to extremely high levels. This cycle was compounded by the fact that storage facilities in the cities were inadequate and transportation from rural areas was difficult.

In the early 1800s, forward arrangements began to appear to deal with the risk caused by market volatility. These were known as “to arrive” contracts and involved an agreement between a buyer and seller for the future delivery of grain. The quantity and grade of the grain would be specified as well as the delivery date, as well an agreed-upon price. Soon the contracts themselves began to be traded in anticipation of changes in the market price of grain<sup>4</sup>. With increases in trading volume increased came a realization of the benefits of standardization and

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<sup>2</sup> Capasso, D. R. (1995) *“Trading on the Seattle Merc”*, New York, J. Wiley.

<sup>3</sup> Capasso (1995) *op. cit.*

<sup>4</sup> Markham, J. W. (1987) *“The History of Commodity Futures Trading and its Regulation”*, New York, Praeger.

the need for an organized exchange. The result, in 1848, was the founding of the Chicago Board of Trade. Other early exchanges involved in futures trading in the US included the New York Cotton Exchange, established in 1870, and the New York Coffee Exchange, set up in 1885<sup>5</sup>.

Various events in the early 1970s conspired to spur the development of modern derivatives markets. There was the collapse of the fixed-exchange rate system provided the impetus for the trading of foreign-exchange derivatives; while the theoretical advances of Black and Scholes allowed traders to compute the price of options so they could buy and sell them. The first financial futures – seven foreign currency contracts – were traded on the Chicago Mercantile Exchange in 1972, while the first swap agreements were executed by the Salomon Brothers in London in 1981<sup>6</sup>. Equity derivatives, based on underlying stock indices, began to emerge in the late 1980s. Today, derivative instruments based on a wide range of underlying markets are traded globally and complex ‘exotic’ products can be built to hedge or assume almost any type of risk imaginable.

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<sup>5</sup> Capasso (1995) *op. cit.*

<sup>6</sup> Collins, B.(1998) “The Whence, How and Why of OTC Equity Derivatives”  
<<http://www.wcsu.edu/finance/newsletter/nlfall98.htm>>