What is a Financial Asset?

Guillaume Rabault

This post stresses that from a portfolio management perspective, price dynamics should be derived from cash flow and expected return assumptions. One cannot hope to identify the price dynamics of a financial security without considering its cash flows.

There is a great variety of financial instruments in our modern world. It is not necessarily useful to try to provide a generic definition. From the point of view of this project (InvestmentMath) however, I would like to stress a particular perspective, using the example of an equity contract. Students who have been exposed to the standard derivatives pricing literature quite often associate an equity contract with a geometric stochastic differential equation (other posts will clarify the meaning of this):

$$\frac{dP_t}{P_t} = rdt + \sigma dW_t,$$

where r is the expected return, σ is the volatility of the price and (W_t) is a Brownian motion. More generically, we are given a price process parameterized by its expected return and its volatility, which can then be statistically fitted to actual data. But within the derivatives literature, no effort is made to understand where this process is coming from. The perspective is indeed that the equity price process is a given and its specification will serve to define the value of new financial instruments which are derived (thus the name!) from the equity contract. As it turns out, the expected return is usually irrelevant to that project. There is nothing wrong with this perspective. From an investment point of view however, the expected return is a crucial variable. We want to form return expectations. We cannot simply take them from past data, especially not from recent past data. In the same way, we want to understand the risk we run by holding the equity contract. A short sample of the equity price might tell us very little about this. From our perspective, the emphasis should not be on the price process but rather on the cash flows generated by the equity contract. We need to understand and model the cash flows. The price process will be inferred ant its derivation which will force us to think about the market clearing process. In particular, the expected return will have to reconcile the market price with the expected cash flows. **We thus propose to think of a financial asset as a**

contract that gives ownership of a stream of cash flows. We should be suspicious of assets that do not give right to an income stream. There are some with positive value in the market. The bills in our wallet are a good example. This is the subject of very interesting economic theory. But the case of financial assets with cash flows will prove complicated enough to occupy us for a while.

People familiar with the financial industry know that a lot of actual investment propositions do not rely on any careful analysis of cash flows. Within our frame of mind, this is not very reassuring . . . to say the least.

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