7.1: What is Risk?

Risk refers to the possibility of an unfavorable event occurring. The higher the risk, the greater the probability of an unfavorable event or the more unfavorable the event could be. The interaction of the probability of the unfavorable event and the degree of negativity associated with the event is critical to determining the risk. For instance, imagine that you are going to participate in a coin flip. It will cost you $1.00 to participate. If you flip a head, you get $1.01. If you flip a tail you get $0.99. Even though there is a fairly high probability of the unfavorable event (50% chance of tails), the outcome is so minor (you lose $0.01) that this would be a low-risk event. Now, consider a slightly different coin flip. This time, instead of flipping the coin once, you will flip it 3 times. If you get 3 heads, you receive $10,000. If you flip 3 tails, you owe $10,000. Anything else you get your $1.00 back. Even though the probability of the bad outcome is much smaller (there is only a 12.5% chance of flipping 3 straight tails), this is a much riskier event due to the bad outcome being substantially worse. However, most people do not consider flying a commercial airliner to be a high risk event (even though the worst case scenario is obviously quite severe) because of the extremely low probability of a fatal crash (less than 1 in 10 million). It is not just the probability or just the degree of unfavorable outcome, but the combination of the two that matter for rational risk analysis.

In finance terms, our “unfavorable event” refers to earning less than expected. Any time we have a chance to earn less than expected on an investment opportunity we are exposed to risk. Note that this is a more strict definition than defining risk as the possibility of losing money. We want to be careful to think of risk as the possibility of earning less than expected instead of being the possibility of losing money.

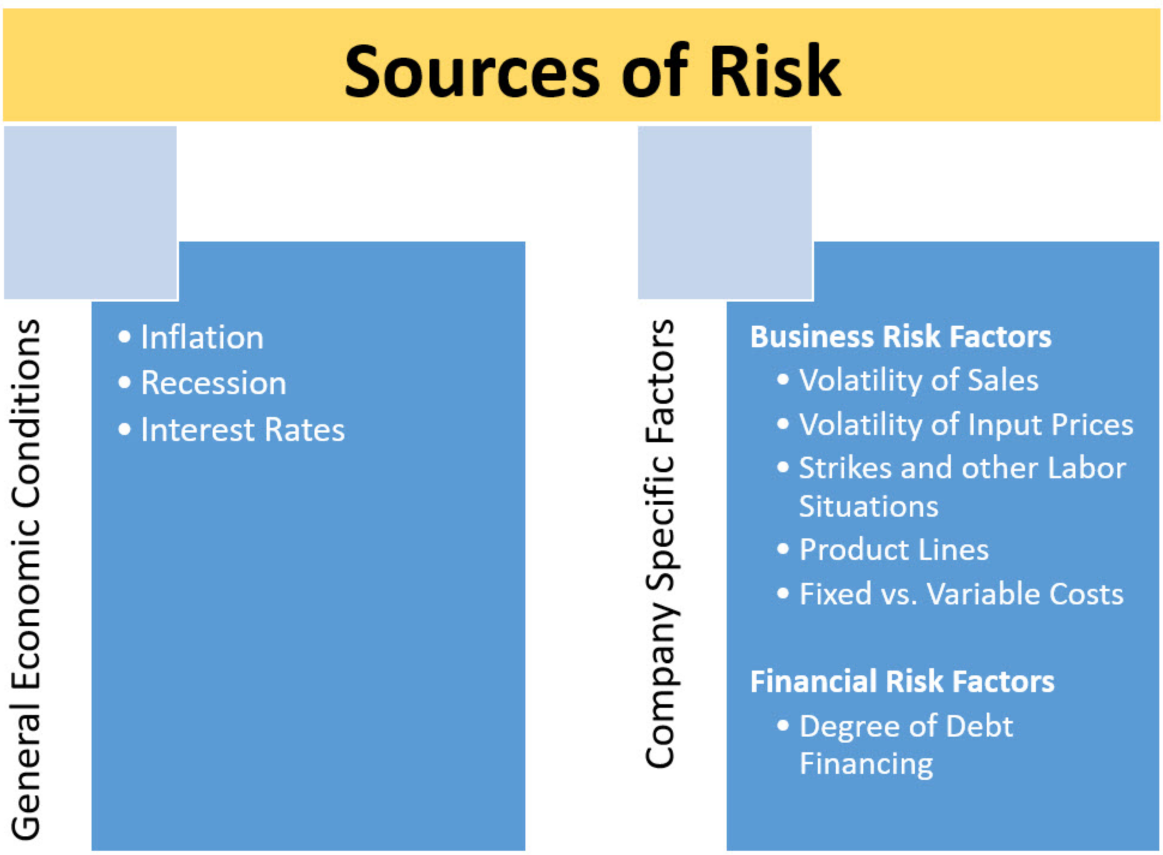

Figure 7.1.1: Broad categories of sources of risk

Note that the above list is a sample of broad factors and not a specific list. For example, consider what happens when we have a large increase in oil and gasoline prices. One immediate impact is inflation. The higher energy prices are, by definition, inflation in energy, but it goes beyond that. Now it costs more for firms to distribute their products to suppliers which is likely to cause the inflation to spill over to other areas. As we search for alternative energy sources (like ethanol), we may see corn prices rising. Since corn is used to feed cattle, this could lead to an increase in beef costs as well. Also, if consumers are now spending more to fill up their gas tanks and more to buy a variety of food products, there would be less money available to spend on entertainment and other goods/services. This could lead to a recessionary environment (could, not will, because there are always so many influences on the economy that this is just one of many factors impacting economic growth). The point here is not the specific impacts of higher oil/gasoline prices, but that many economic risk factors may have more complex interactions than are apparent at the surface.

One other thought on risk to keep in mind as we move through this chapter. Throughout the chapter, we will be treating risk and potential returns as largely objective and measurable. However, in practice, one of the biggest challenges of risk management is trying to figure out what bad outcomes are and how likely they are. As, John Kenneth Galbraith, one of the great economists of the 20th century once wrote – "There are two kinds of forecasters: those who don't know, and those who don't know they don't know." In practice, the results of our models are only as good as the inputs we put into them.

Diversification

Diversification refers to the concept that by holding a number of different securities (ideally not just stocks) from a spectrum of industries, we can negate the impact of company specific factors on our returns. We will come back to this issue (one of the most important concepts in finance) in more detail later in this chapter.
