Chapter 21: Risk management

Risk management entails assessing and managing the corporation's exposure to various sources of risk through the use of financial derivatives, insurance, and other activities. *The risk profile* is a description of what types of risk a company is exposed.

A stock's sensitivity to factor risk as well as organization-specific risk is determined by the organization's capital expenditure and operating decisions and its financial decisions. Factor risk is usually not diversifiable, but often it can be hedged by taking offsetting positions in financial derivatives. Organization-specific risk is just the opposite; it is usually diversifiable but cannot be hedged with derivative contracts. It is possible, however, to hedge many sources of organization-specific risk with insurance contracts.

The Modigliani-Miller Theorem holds that when there are no taxes and other market frictions, the capital structure decision is irrelevant. If hedging choices do not effect cash flows from real assets, then, in the absence of taxes and transaction costs, hedging decisions do not affect organization values.

MM entails that shareholders as well as corporations have access to hedging instruments with no transaction costs. In reality, corporations are often in a much improved position to hedge certain risk than their shareholders. In addition, corporate executives are much more knowledgeable than shareholders about their organization's risk exposures and thus are in a improved position to know how much to hedge. Hedging is unlikely to improve a organization's value if it does no more than reduce the variance of its future cash flows. To improve a organization's value, hedging also must raise expected cash flows.

Hedging has several advantages:

1. Hedging can decrease a organization's expected tax payments;
2. Hedging can reduce the costs of financial distress;
3. Hedging allows organizations to improved plan for their future capital needs and reduce their need to gain access to outside capital markets;

4. Hedging can be used to improve the design of management compensation contracts and it allows organizations to evaluate their top executives more accurately;
5. Hedging can improve the quality of the investment and operating decisions.

Although we believe that future markets usually lead managers to make improved decisions, managers sometimes ignore new price information after hedging and, as a result, often make serious mistakes. This is what we call the fallacy of sunk costs. Organizations have an inducement to insure or hedge risks that insurance companies and markets can improved assets. Doing this improves decision making. Organizations will absorb internally those risks over which they have the comparative advantage in evaluating.
The gains from hedging are greater when it is more hard to evaluate and monitor management.

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This is called the fallacy of sunk costs. When making pricing and other operating decisions, managers must rely on opportunity costs instead of historical costs. Managers who understand this should be able to greatly improve their operating and investment decisions when futures and forward markets exist for either their inputs or outputs.

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If a organization's main motivation for hedging is to improved assess the quality of management, the organization will probably want to hedge its earnings or cash flows rather than its value. However, if the organization is hedging to avoid the costs of financial distress, it should implement a hedging strategy that takes into account both the variance of its value and the variance of its cash flows.

In addition to understanding whether to hedge and how to hedge, organizations must consider the organization of their risk management activities. Should risk management be centralized, operating out of the organization's treasury department or should hedging be performed at the level of the individual divisions?

Corporation should organize their hedging in a way that reflects why they are hedging.
Most hedging motivations hold that hedging should be carried out at the corporate level. However, the improvement in management inducements that can be realized with a risk management program are best achieved when the individual divisions are responsible for hedging.

Managers have private information only in exceptional cases. Given this, they almost always should be hedging rather than speculating.

To the extent that hedging reduces volatility, it reduces the value of this option, transferring value from shareholders to debt holders. From n equity holder's perspective, the value maximizing benefits or hedging may be reduced, or possibly even reversed by this transfer.
The interests of most of a organization's employees are closer to the interests of debt holders than shareholders.

Organizations decide whether to borrow in the domestic currency, in a foreign currency or perhaps with commodity linked bonds, called *liability management*.
Liability stream is the stream of interest costs that a organization will pay in the future.
A organization's liability stream can be decomposed into two components: one that reflects default free interest rates and one that reflects the organization's credit rating.
When a organization borrows at a fixed rate; both components are fixed. When it rolls over short-term instruments, the liability stream fluctuates with both kinds of risks.

Derivative instruments allow organizations to separate the two sources of risk: to create liability streams that are sensitive to interest rates, but not to their credit ratings, and to create liability streams that are sensitive to their credit ratings.

The various risks associated with changes in the value of currencies are usually divided in three categories:

- *Transaction risk* represents only the immediate effect on cash flow of an exchange rate change.
- *Translation risk*: arises because a foreign subsidiary's financial statements must be translated into the home country's currency as part of the consolidated statements of the parent.
- *Economic risk*: f.e. differences between the location of the production facilities and where the product is sold; location of competitors and determinants of output prices.

The nominal exchange rate measures the U.S. dollar price of British pounds;
The real exchange rate measures the relative price of British and U.S. goods.

Exchange rate movements can be decomposed into those caused by differences in the inflation rates in the home country and the foreign country, and those caused by changes in real exchange rates. In most cases, an inducement is to hedge against real exchange rate changes rather than the component of exchange rates that is driven by inflation differences between the two countries.

When exchange rates can be generated by both real and nominal changes, it may be impossible for organizations to effectively hedge their long term economic exposures.