##### Solutions for End-of-Chapter Questions and Problems: Chapter Twenty Five

1. What is the difference between loans sold with recourse and loans sold without recourse from the perspective of both sellers and buyers?

Loans sold without recourse means that the credit risk is transferred entirely to the buyer. In the event the loan is defaulted, the buyer of the loan has no recourse to the seller for any claims. Thus, the originator of the loan can take it off the balance sheet after selling the loan. In the case of a sale with recourse, credit risk is still present for the originator because the buyer could transfer ownership of the loan back to the originator. Thus, from the perspective of the buyer, loans with recourse bear the least amount of credit risk.

2. A bank has made a three-year $10 million loan that pays annual interest of 8 percent. The principal is due at the end of the third year.

a. The bank is willing to sell this loan with recourse at an interest rate of 8.5 percent. What price should it receive for this loan?

If the bank sells with recourse, it should expect:

($0.80m) x PVAn=3, k=8.5 + ($10m) x PVn=3, k=8.5 = $9.8723 million

b. The bank has the option to sell this loan without recourse at a discount rate of 8.75 percent. What price should it receive for this loan?

If the bank sells without recourse, it should expect:

($0.80m) x PVAn=3, k=8.75 + ($10m) x PVn=3, k=8.75 = $9.8093 million

c. If the bank expects a 0.5 percent probability of default on this loan, is it better to sell this loan with or without recourse? It expects to receive no interest payments or principal if the loan is defaulted.

If sold with recourse and the expected probability of default is taken into account, it should expect to receive (0.995) x $9.8723 = $9.8229, which is still higher than selling it without recourse. So, it should sell it with recourse.

3. What are some of the key features of short-term loan sales?

Short-term loan sales usually consist of maturities between one and three months and are secured by the assets of a firm. They usually are sold in units of $1 million or more and are made to firms that have investment grade credit ratings. Banks have originated and disposed of short-term loans as an effective substitute for commercial paper, which has similar characteristics to short-term loans. The accessibility of commercial paper by more and more corporations has reduced the volume of these short-term loans for loan sales purposes.

4. Why are yields higher on loan sales than on commercial paper issues with similar maturity and issue size?

Commercial paper issuers generally are blue chip corporations that have the best credit ratings. Banks may sell the loans of less creditworthy borrowers, thereby raising required yields. Indeed, since commercial paper issuers tend to be well-known companies, information, monitoring, and credit assessment costs are lower for commercial paper issues than for loan sales. Moreover, since there is an active secondary market in commercial paper, but not for loan sales, the commercial paper buyer takes on less liquidity risk than does the buyer of a loan sale.

5. What are highly leveraged transactions? What constitutes the federal regulatory definition of an HLT?

A highly leveraged transaction is a loan to finance an acquisition or merger. Often the purchase is a leverage buyout with a resulting high leverage ratio for the borrower. U.S. federal bank regulators have adopted a definition that identifies an HLT loan as one that (1) involves a buyout, acquisition, or recapitalization and (2) doubles the company’s liabilities and results in a leverage ratio higher than 50 percent, results in a leverage ratio higher than 75 percent, or is designated as an HLT by a syndication agent.

6. How do the characteristics of an HLT loan differ from those of a short-term loan that is sold?

Some of the common characteristics of the two types of loans are listed below:

Short-term loans HLT loans

Secured by the assets of borrowing firm. Secured by the assets of the borrowing firm.

Short-term maturity (90 days or less). Long-term maturity (often 3 to 6 years).

Yields closely tied to the commercial Floating rates tied to LIBOR, the prime rate,

paper rate. or a CD rate (plus 200 or more basis points).

Sold in units of $1 million and up. Strong covenant protection.

Loans to investment grade borrowers Classified as nondistressed or distressed.

or better.

7. What is a possible reason why the spreads on HLT loans perform differently than do the spreads on junk bonds?

Spreads on HLT loans behave more like the spreads on investment grade bonds than the spreads on junk bonds. A possible reason is that HLT loans are more senior in bankruptcy proceedings and that they have greater collateral backing than do high-yield or junk bonds.

8. City Bank has made a 10-year, $2 million loan that pays annual interest of 10 percent. The principal is expected to be paid at maturity.

a. What should City Bank expect to receive from the sale of this loan if the current market interest rate on loans of this risk is 12 percent?

Market value of loan: ($0.20m) x PVAn=10,k=12 + ($2m) x PVn=10,k=12 = $1.774 million

b. The price of loans of this risk is currently being quoted in the secondary market at bid-offer prices of 88-89 cents (on each dollar). Translate these quotes into actual prices for the above loan.

The prices of these loans are being quoted at 88 cents and 89 cents to the dollar. In the case of the above loan, it will translate into $1.56 ($1.774 million x 0.88) and $1.58 million ($1.774 million x 0.89), i.e., a dealer is willing to buy such loans at $1.56 million and sell them at $1.58 million.

c. Do these prices reflect a distressed or nondistressed loan? Explain.

This loan is categorized as distressed since it is selling at prices below $0.90 to the dollar. It usually indicates a higher than average leverage of the borrower and more default risk, making it a less tradable instrument.

9. What is the difference between loan participations and loan assignments?

In a loan participation, the buyer does not obtain total control over the loan. In an assignment, all rights are transferred upon sale, thereby giving the buyer a direct claim on the borrower.

Transaction costs are higher for loan assignments than for loan participations since the loan must be transferred via a Uniform Commercial Code filing. Moreover, current holders of the loan must be verified as well as any impediments to transfer, thereby further increasing transaction costs upon loan sales under assignments.

Monitoring incentives are higher under loan assignments as opposed to loan participations because the buyer is the sole holder of the loan. Thus, there is no free-rider problem. Monitoring costs are lower because the loan assignment buyer must only monitor the borrower’s activities, while the loan participation buyer must monitor both the borrower and the originating FI.

Risk exposure is greater under loan participations than under loan assignments because participations have a “double risk” exposure. The buyer of the loan participation is exposed to the credit risk of the originating FI as well as the credit risk of the borrower.

10. What are the difficulties in completing a loan assignment?

A significant number of contractual problems, trading frictions, and costs can occur with loan assignments. First, the initial loan contract may require the FI and/or borrower to agree to the sale, although the current trend is toward contracts with very limited assignment restrictions. Second, complexities in the calculation of accrued interest often require assignment of floating-rate loans to occur only on the anniversary or repricing dates of the loan. The FI agent who distributes the interest payments may have difficulty in keeping up-to-date records regarding ownership changes of the loan. Finally, the buyer of the loan must verify the original loan contract regarding the buyer’s rights to collateral in the event the borrower defaults on the loan.

11. Who are the buyers of U.S. loans and why do they participate in this activity?

The buyers of loans include (1) investment banks because they are often involved with the initial transaction that leads to the issuance of the debt; (2) vulture funds since they invest in portfolios of risky loans; (3) domestic banks in order to circumvent regional banking and branching restrictions so as to increase regional and customer diversification; (4) foreign banks in order to obtain a presence in the U.S. market without incurring the costs of a branch network; (5) insurance companies and pension funds in attempts to earn higher yields, when permissible; (6) closed‑ and open-end bank loan mutual funds to earn fee income on loan syndications; and (7) non‑financial corporations to earn higher yields.

a. What are vulture funds?

Vulture funds are specialized hedge funds that are established to invest in distressed loans. The funds may be active in the sense that the purchased loans provide leverage to restructure deals or alter the operation of the borrower.

b. What are three reasons the interbank market has been shrinking?

First, the interbank market has relied heavily on correspondent banking where banks provide services to maintain relationships. The increase in competition and the increasingly consolidated banking market is causing correspondent relationships to weaken. Second, the failure of several large FIs has caused an increase in the concern about moral hazard and counterparty risk. Third, the barriers to nationwide banking have been largely eliminated by the passage of the Riegle-Neal Interstate Banking and Efficiency Act of 1994.

c. What are reasons a small bank would be interested in participating in a loan syndication?

Many small banks have limited opportunities to diversify their loan portfolios. The loan sale market is one method that allow these banks to achieve some diversification in their loan portfolios, at least at the regional level.

12. Who are the sellers of U.S. loans and why do they participate in this activity?

The primary sellers of loans include (1) major money center banks for the purpose of reducing capital requirements, diversifying the loan portfolio, reducing reserve requirements, and increasing liquidity; (2) foreign banks for the same reasons as the money center banks; (3) investment banks because of their role as market makers; and (4) U.S. government agencies including The Resolution Trust Corporation, before it was dissolved, to dispose of assets obtained upon closure of troubled institutions in the course of resolving the thrift crisis.

a. What is the purpose of a bad bank?

Bad banks are created by commercial banks for the purpose of liquidating portfolios of nonperforming assets or loans. Bank management is given the incentive to maximize the value realized in the sale of the assets.

b. What are the reasons why loan sales through a bad bank will be value enhancing?

Some of the reasons for selling or liquidating bad loans through a special purpose vehicle such as a bad bank include:

(1) The use of workout specialists in managing the liquidation.

(2) The improvement in the reputation of the good bank after removal of the bad assets from the balance sheet. This improved reputation allows the good bank to have better access to deposit and funding markets.

(3) The ability to dispose of bad assets without concern about liquidity because of the lack of deposits.

(4) The ability to customize incentive agreements for managers that generate enhanced values from loan sales.

(5) The increased informational symmetry about the value of the good bank’s assets, since a (typically) large share of the bad assets have been removed from the balance sheet.

c. What impact has the 1996 Federal Debt Improvement Act had on the loan sale market?

This act authorizes federal agencies to sell delinquent and defaulted loan assets. In cases such as the RTC liquidation of real estate loans in the early 1990s, market watchers estimated a moderate supply-side effect because of the large amount of real estate loans that had to be liquidated.

13. In addition to managing credit risk, what are some other reasons for the sale of loans by FIs?

The reasons for an increase in loan sales, apart from hedging credit risk, include:

(a) Removing loans from the balance sheet by sale without recourse reduces the amount of deposits necessary to fund the FI, which in turn decreases the amount of regulatory reserve requirements that must be kept by the FI.

(b) Originating and selling loans is an important source of fee income for the FIs.

(c) One method to improve the capital ratio for an FI is to reduce assets. This approach often is less expensive than increasing the amount of capital.

(d) The sale of FI loans to improve the liquidity of the FIs has expanded the loan sale market. This has made FI loans even more liquid and reduced FI liquidity risk even farther. Thus, by creating the loan sales market, the process of selling the loans has improved the liquidity of the asset for which the market was initially developed.

(e) Finally, loan sales have been considered a substitute for securities underwriting.

14. What are factors that may deter the growth of the loan sale market in the future? Discuss.

Several factors may deter the growth of the loans sales market. First, because of the ability for large banks to underwrite commercial paper through investment bank subsidiaries, the need to sell short-term bank loans as an imperfect substitute for commercial paper has decreased. Second, if customers perceive the sale of its loan by an FI as an adverse statement about the customer’s value to the FI, the FI may choose to not sell the loan for fear of decreasing revenue from the customer relationships. Third, the distressed loan sale market has slowed because of legal implications from the sale of HLT loans. Other creditors have questioned whether the secured position of the FI is valid in the case of bankruptcy or other distressed-firm proceedings.

15. An FI is planning the purchase of a $5 million loan to raise the existing average duration of its assets from 3.5 years to 5 years. It currently has total assets worth $20 million, $5 million in cash (0 duration) and $15 million in loans. All the loans are fairly priced.

a. Assuming it uses the cash to purchase the loan, should the FI purchase the loan if its duration is seven years?

The duration of the existing loan is:

0 + $15m/$20m(*X*) = 3.5 years => Existing loan duration = 4.667 years

If it purchases $5 million of loans with an average duration of 7 years, the FI’s portfolio duration will increase to $5m/$20m(7) + $15m/$20m(4.667) = 5.25 years. In this case, the average duration will be above 5 years (of its liabilities). The FI may be better off seeking another loan with a slightly lower duration.

b. What asset duration loans should it purchase in order to raise its average duration to five years?

The FI should seek to purchase a loan of the following duration:

$5m/$20m(*X*) + $15m/$20m(4.667 years) = 5 years => *X* = duration = 6 years.

16. In addition to hedging credit risk, what are five factors that are expected to encourage loan sales in the future? Discuss the impact of each factor.

The reasons for an increase in loan sales, apart from hedging credit risk, include:

(a) New capital requirements for credit risk, which suggests a further need for FIs to reduce their risky portfolios and replace them with lower risk assets. This suggests increased loan sales activity.

(b) Market value accounting since FASB 115 makes it easier to trade different categories of loans.

(c) Loan sales as trading instruments, which make it attractive for commercial banks and investment banks to specialize in specific loan categories and to market them effectively, since they require only brokerage functions as opposed to performing asset transformations.

(d) The increased involvement of the federal government in the loan sales market (through its direct purchases of distressed loans held by financial institutions and its takeover of mortgage giants Fannie Mae and Freddie Mac) during the financial crisis is seen as a reason for growth in the loan sale market.

(e) The ability to allocate loan credit ratings should cause more investors to enter the market.

(f) The growth of distressed loans in international markets should provide opportunities for U.S. domestic investors to enter this market at substantially reduced prices.