

LO.a: Explain benefits of securitization for economies and financial markets.

1. Which of the following statements is *most likely* correct?
Statement 1: Securitization is beneficial for banks because it allows banks to maintain ownership of their securitized assets.
Statement 2: Securitization is beneficial for banks because it increases the funds available for banks to lend.
A. Statement 1.
B. Statement 2.
C. Neither of them.
2. Securitization is beneficial for investors because it:
A. provides direct access to mortgages and portfolios of receivables that would be otherwise unattainable.
B. repackages bank loans into simpler structure.
C. allows them to choose which borrowers to lend to.
3. Which of the following is *least likely* a benefit of securitization for banks?
A. It transfers credit risk.
B. It increases market capital requirements.
C. It increases funding availability without increasing reserve requirements.
4. Which of the following statements about securitization is least accurate? Due to securitization:
A. the risk adjusted returns to the ultimate investors can be enhanced.
B. the profitability of banks can be improved.
C. the costs paid by borrowers are effectively higher.

LO.b: Describe securitization, including the parties involved in the process and the roles they play.

5. In a securitization, the loan servicer is *least likely* responsible for the:
A. issuance of the asset-backed securities.
B. collection of payments from the borrowers.
C. recovery of underlying assets for delinquent loans.
6. In a securitization, the seller of the collateral is called the:
A. special purpose vehicle (SPV).
B. originator.
C. guarantor.
7. A special purpose vehicle (SPV) *most likely*:
A. sells accounts receivable.
B. sells asset backed securities.
C. collects payments from borrowers.

8. Analyst 1: An SPV makes it possible for the asset-backed securities to have a higher credit rating than the parent company.
Analyst 2: If bankruptcy occurs, SPV can shield its assets from the parent company's creditors.
Which analyst's statement is *most likely* correct?
A. Analyst 1.
B. Analyst 2.
C. Both.

LO.c: Describe typical structures of securitizations, including credit tranching and time tranching.

9. Analyst 1: Credit tranching allows investors to choose between extension risk and contraction risk.
Analyst 2: Time tranching allows investors to choose between extension risk and contraction risk.
Which analyst's statement is *most likely* correct?
A. Analyst 1.
B. Analyst 2.
C. Neither of them.
10. Credit tranching refers to creating a multi-layered capital structure that has:
A. fully amortizing and partially amortizing tranches.
B. recourse and non-recourse tranches.
C. senior and subordinate tranches.
11. Time tranching helps investors to choose between:
A. extension risk and credit risk.
B. contraction risk and credit risk.
C. extension risk and contraction risk.

LO.d: Describe types and characteristics of residential mortgage loans that are typically securitized.

12. Frank Smith obtains a recourse mortgage loan for \$300,000. One year later, when the outstanding balance of the mortgage is \$290,000, Frank cannot make his mortgage payments and defaults on the loan. The lender forecloses the loan and sells the house for \$250,000. What amount is the lender entitled to claim from Frank?
A. \$0.
B. \$40,000.
C. \$50,000.
13. Sean obtains a 10 million GBP mortgage loan from Barclays Bank. Two years later, the principal on the loan is 8 million GBP and Sean defaults on the loan. Barclays Bank forecloses the loan, sells the property for 6 million GBP, and is entitled to collect the shortfall, 2 million GBP, from Sean. Sean *most likely* had a:

- A. recourse loan.
- B. unsecured loan.
- C. non-recourse loan.

14. Maria obtains a non-recourse mortgage loan for PKR 8,000,000. Three year later, when the outstanding balance of the mortgage is PKR 5,000,000, Maria cannot make her mortgage payments and defaults on the loan. The lender forecloses and sells the house for PKR 3,750,000. What amount is the lender entitled to claim from Maria?
- A. PKR 0.
 - B. PKR 1,250,000.
 - C. PKR 5,000,000.

15. Ali reviews the status of his home mortgage schedule for the month of December 2013:

Date	Item	Balance (GBP)
01 December	Outstanding mortgage loan balance	700,000
31 December	Total monthly required payment	15,000
31 December	Interest component of total monthly required payment	3,000

On 31 December 2013, Ali makes a payment of GBP 20,000 rather than GBP 15,000. What will be outstanding mortgage loan balance immediately after the payment is made?

- A. GBP 680,000.
 - B. GBP 683,000.
 - C. GBP 688,000.
16. Taha is an analyst for Adamjee Insurance that invests in residential mortgage pass-through securities. Taha reviews the monthly cash flow of one underlying mortgage pool to determine the cash flow to be passed through to investors:

Total principal paid including prepayment	\$2,445,000
Scheduled principal to be paid before prepayment	\$445,000
Gross coupon interest paid	\$3,555,000
Servicing fees	\$145,000
Other fees for guaranteeing the issue	\$55,000

Based on Taha's table, the total cash flow to be passed through to the investors is *closest* to:

- A. \$5,800,000.
 - B. \$5,855,000.
 - C. \$6,000,000.
17. Charles Dent obtains a non-recourse loan for \$200,000. A year later the principal on the loan is \$180,000 and Charles defaults on the loan. The lender forecloses and sells the house for \$150,000. What amount is the lender entitled to claim from Charles?
- A. \$0.
 - B. \$30,000.
 - C. \$50,000.

18. A mortgage starts out with a fixed rate and then becomes an adjustable rate after a specified initial term. The mortgage is *most likely* a:

- A. rollover mortgage.
 - B. renegotiable mortgage.
 - C. hybrid mortgage.
19. Which of the following statements about convertible mortgages is *most accurate*?
- A. The mortgage rate is initially a fixed rate. At some point, the borrower has the option to convert into an adjustable rate for the remainder of the mortgage's life.
 - B. The mortgage rate is initially an adjustable rate. At some point, the borrower has the option to convert into a fixed rate for the remainder of the mortgage's life.
 - C. The mortgage rate is initially either a fixed rate or an adjustable rate. At some point, the borrower has the option to convert into a fixed rate or an adjustable rate for the remainder of the mortgage's life.
20. Which of the following statements about LTV is *least accurate*?
- A. LTV is the ratio of the property's purchase price to the amount of the mortgage.
 - B. Lower the LTV, the more likely the borrower is to default.
 - C. Lower the LTV, the more protection the lender has for recovering the amount loaned if the borrower defaults.

LO.e: Describe types and characteristics of residential mortgage-backed securities, including mortgage pass-through securities and collateralized mortgage obligations, and explain the cash flows and risks for each type.

21. Analyst 1: Non-agency residential mortgage backed securities consists of a pool of conforming mortgages as collateral.
Analyst 2: Non-agency residential mortgage backed securities are guaranteed by the appropriate government sponsored enterprise.
Which analyst's statement is *most likely* correct?
- A. Analyst 1.
 - B. Analyst 2.
 - C. Neither of them.
22. Which of the following is an important consideration of non-agency residential mortgage-backed security (RMBS) as compared to an agency RMBS?
- A. Credit risk.
 - B. Extension risk.
 - C. Contraction risk.
23. Suppose there are three mortgages with respective balances of \$100,000, \$200,000, and \$300,000. The mortgage rates are 6%, 7%, and 8% respectively. The WAC is closest to:
- A. 6.33.
 - B. 7.33.
 - C. 8.
24. Which of the following is *least likely* an external credit enhancement for an asset backed security?

- A. Bond insurance.
 - B. Letter of credit.
 - C. Reserve account.
25. Which of the following is not a form of credit enhancement of auto loan-backed securities?
- A. Reserve account.
 - B. Overcollateralization.
 - C. Under-collateralization.
26. Which of the following statements is correct?
- A. Collateral for auto loan-backed securities are non-amortizing loans.
 - B. Collateral for credit card receivable-backed securities are amortizing loans.
 - C. Auto loan-backed securities' principal is typically distributed across different bond classes each month.
27. An investor who is willing to accept significant prepayment risk if compensated with a relatively high expected return will *most likely* invest in:
- A. A PAC tranche.
 - B. A latter-paying tranche in sequential structure.
 - C. Support tranche.
28. Which of the following is *least likely* an internal credit enhancement for an asset backed security?
- A. Excess spread.
 - B. Corporate guarantee.
 - C. Overcollateralization.
29. Consider a CMO structure with one planned amortization class and one support tranche. The initial PAC collar was 100-250 PSA. If the actual prepayment speed is 50 PSA, the average life of the PAC tranche will:
- A. contract.
 - B. extend.
 - C. remain the same.
30. Which of the following is *least likely* a feature of a non-agency residential mortgage-backed security (RMBS)?
- A. Overcollateralization.
 - B. A pool of conforming mortgages as collateral.
 - C. Senior/subordinated structure.
31. Which of the following statements about the planned amortization class (PAC) structure is *least accurate*?
- A. Support tranches are exposed to high levels of credit risk.
 - B. Support tranches provide prepayment protection to the PAC tranches.
 - C. If prepayments are too low to maintain the PAC schedule, the shortfall is provided by the support tranche.

32. Consider a CMO with three sequential pay tranches A, B, and C. The average lives for the tranches are 4.6, 10.3, and 15.0 years respectively under a 150 PSA assumption. An investor concerned about extension risk is *most likely* to invest in:
- A. tranche A.
 - B. tranche B.
 - C. tranche C.
33. Consider a CMO structure with one planned amortization class and one support tranche. The initial PAC collar was 150-250 PSA. If the actual prepayment speed is 100 PSA, the average life of the PAC tranche will:
- A. contract.
 - B. extend.
 - C. remain the same.
34. Analyst 1: Although the collateral pays a fixed rate, it is possible to create a CMO with a floating rate tranche.
Analyst 2: We can create a CMO with a floating rate tranche, only with collateral that pays floating rate.
Which analyst's statement is *most likely* correct?
- A. Analyst 1.
 - B. Analyst 2.
 - C. Neither of them.
35. Consider a CMO with three sequential pay tranches A, B and C. The average lives for the tranches are 4.6, 10.3, and 15.0 years respectively under a 150 PSA assumption. An investor concerned about contraction risk is *most likely* to invest in:
- A. tranche A.
 - B. tranche B.
 - C. tranche C.

LO.f: Define prepayment risk and describe the prepayment risk of mortgage-backed securities.

36. A conditional prepayment rate (CPR) of 6% means that approximately 6% of the outstanding mortgage pool balance at the beginning of this year will be prepaid:
- A. in the current month.
 - B. by the end of the year.
 - C. over the life of the mortgages.
37. In the context of mortgage-backed securities, a conditional prepayment rate of 10% means that approximately 10% of an outstanding mortgage pool balance at the beginning of the year will be prepaid:
- A. by the end of the year.
 - B. by the end of the month.
 - C. over the life of the mortgage.

38. A PSA assumption of 150 PSA means that:
- A. prepayments are slower than the benchmark.
 - B. prepayments are faster than the benchmark.
 - C. prepayments are equal to the benchmark.
39. Which of the following statements best describes the relationship between CPR and SMM?
- A. SMM deals with the expected prepayment rate while CPR is a measure for the actual prepayment rate.
 - B. SMM is a measure of prepayment risk while CPR is a measure of credit risk.
 - C. CPR is an annualized version of SMM.
40. Which of the following statements about contraction and extension risks is *most accurate*?
- A. Contraction risk increases when interest rates fall and extension risk increases when interest rates rise.
 - B. Contraction risk increases when interest rates rise and extension risk increases when interest rates fall.
 - C. Contraction risk decreases when interest rate fall and extension risk decreases when interest rates rise.
41. The principal balance of a pool is \$10 million and \$100,000 is scheduled to be repaid in a given month. The SMM is 0.93%. The forecasted prepayment amount for the month is *closest* to:
- A. \$930.
 - B. \$92,070.
 - C. \$93,000.
42. The average life of a MBS is more relevant than the security's final maturity because it represents the average time to receipt of:
- A. scheduled principal payments.
 - B. expected prepayments.
 - C. both expected prepayments and scheduled principal payments.

LO.g: Describe characteristics and risks of commercial mortgage-backed securities.

43. Analyst 1: Commercial mortgage-backed security (CMBS) loans typically have greater call protection than residential MBS loans because they are usually smaller-dollar sized loans and hence are not refinanced when interest rates fall.
Analyst 2: Commercial mortgage-backed security (CMBS) loans typically have greater call protection than residential MBS loans because commercial mortgages may have yield maintenance charges.
Which analyst's statement is *most likely* correct?
- A. Analyst 1.
 - B. Analyst 2.
 - C. Both.

44. In the United States a commercial loan is usually a:
- A. recourse loan.
 - B. non-recourse loan.
 - C. credit risk-free loan.
45. In a mortgage pass-through security, which of the following has a direct relation with interest rates?
- A. Credit risk.
 - B. Extension risk.
 - C. Liquidity risk.
46. Which of the following is *least likely* a key indicator of potential credit performance of a commercial mortgage-backed security (CMBS)?
- A. Loan-to-value ratio.
 - B. Debt-to-service-coverage.
 - C. Value-to-service-coverage.
47. The balloon risk in a CMBS can be best described as a type of:
- A. extension risk.
 - B. contraction risk.
 - C. interest rate risk.
48. Under the defeasance mechanism of a commercial mortgage, a borrower:
- A. is prohibited from making prepayments during a specified period of time.
 - B. is required to pay a 'make-whole charge' penalty if he refinances the loan to get a lower mortgage rate.
 - C. provides sufficient funds for the servicer to invest in a portfolio of government securities that replicates the cash flows that would exist in the absence of prepayments.

LO.h: Describe types and characteristics of non-mortgage asset-backed securities, including the cash flows and risks of each type.

49. If a credit card receivables asset backed security (ABS) has a lock-out feature:
- A. no investors may sell the ABS for a certain period of time.
 - B. no payments are made to the ABS investor for a certain period of time.
 - C. no principal payments are made to the ABS investor for a certain period of time.
50. In a credit card receivable asset backed securities (ABS) cash flows paid to security holders is based on:
- A. finance charges collected and fees.
 - B. finance charges collected only.
 - C. fees only.
51. Jane Smith is seeking to purchase an ABS backed by automobile loans. However, Jane is extremely concerned about prepayment risk. Which of the following factors should *least concern* Jane?

- A. Insurance payoffs.
- B. Loan refinancing.
- C. Trade-ins.

LO.i: Describe collateralized debt obligations, including their cash flows and risks.

52. In an arbitrage CDO structure, is the collateral manager required to actively manage the debt obligations?
- A. Yes.
 - B. No.
 - C. It depends on what type of CDO structure we are creating.
53. Interest rate swaps are required in CDOs because:
- A. cash flows are mismatched.
 - B. the subordinated tranche investors have credit risk.
 - C. the equity tranche investors have credit risk.
54. A CDO be *best* described as:
- A. a security backed by a specific type of debt obligation.
 - B. a security backed by debt and equity instruments.
 - C. a security backed by a pool of one or more debt obligations.

Solutions

1. B is correct. Securitization allows banks to remove assets from their balance sheet, therefore increasing the pool of available capital that can be loaned out.
2. A is correct. Securitization is beneficial for investors because it provides direct access to mortgages and portfolios of receivables that would be otherwise unattainable.
3. B is correct. The benefits of securitization include transfer of credit risk, increased funding availability without increasing reserve requirements, and automatically decreased market capital requirements.
4. C is correct. Because of securitization, the costs paid by borrowers can be effectively reduced.
5. A is correct. In a securitization, the special purpose vehicle (SPV) is responsible for the issuance of the asset backed securities.
6. B is correct. In a securitization, the seller of the collateral is called the originator.
7. B is correct. Special purpose vehicles (SPV) sell asset backed securities. The originator sells assets (receivables) to the SPV for cash. The servicer is responsible for the collection of payments from the borrowers.
8. C is correct. Both statements are correct.
9. B is correct. Time tranching or prepayment tranching allows investors to choose between extension risk and contraction risk.
10. C is correct. Credit tranching refers to creating a multi-layered capital structure that has senior and subordinate tranches.
11. C is correct. Time tranching helps investors in choosing between extension risk and contraction risk.
12. B is correct. In a recourse loan, the lender is entitled to claim the shortfall between the mortgage balance outstanding and the proceeds received from the sale of the property. i.e. $290,000 - 250,000 = 40,000$.
13. A is correct. Barclays Bank has a claim against Sean for the shortfall between the amount of the mortgage balance outstanding and the proceeds received from the sale of the property. This indicates that the mortgage loan is a recourse loan. If Sean had a non-recourse loan, the bank would have only been entitled to the proceeds from the sale of the underlying property.

14. A is correct. For a non-recourse loan, the bank can only look to the underlying property to recover the outstanding mortgage balance and has no further claim against the borrower. The bank is simply entitled to foreclose on the home and sell it.
15. B is correct. The difference between the GBP 15,000 monthly mortgage payment and the GBP 3,000 portion of the payment that represents interest equals GBP 12,000, which is the amount of the total required payment applied to reduce the outstanding mortgage balance. In addition, a payment made in excess of the monthly mortgage payment is called a prepayment. The prepayment of GBP 5,000 is a partial pay down of the mortgage balance. The outstanding mortgage balance after the GBP 20,000 payment is the mortgage balance of $\text{GBP } 700,000 - \text{GBP } 12,000 - \text{GBP } 5,000 = \$683,000$.
16. A is correct. The total cash flow to be received by the investors is as follows:
- $$\text{Total principal} + \text{gross coupon interest} - \text{less servicing and other fees} = \$2,445,000 + \$3,555,000 - \$145,000 - \$55,000 = \$5,800,000.$$
17. A is correct. In a non-recourse loan, the lender can only look to the underlying property to recover the outstanding mortgage balance and has no further claim against the borrower.
18. C is correct. When the mortgage starts out with a fixed rate and then becomes an adjustable rate after a specified initial term, the mortgage is referred to as a hybrid mortgage. If the mortgage rate is fixed for some initial period and is then adjusted to a new fixed rate, the mortgage is referred to as a rollover or renegotiable mortgage.
19. C is correct. In a convertible mortgage, the mortgage rate is initially either a fixed rate or an adjustable rate. At some point, the borrower has the option to convert into a fixed rate or an adjustable rate for the remainder of the mortgage's life.
20. B is correct. Lower the LTV, the less likely the borrower is to default.
21. C is correct. Agency residential mortgage backed securities consists of a pool of conforming mortgages as collateral. Agency residential mortgage backed securities are guaranteed by the appropriate government sponsored enterprise.
22. A is correct. Credit risk is an important consideration of non-agency residential mortgage-backed security (RMBS) as compared to an agency RMBS.
23. B is correct. $\text{Weighted average coupon} = \frac{100}{600} * 6\% + \frac{200}{600} * 7\% + \frac{300}{600} * 8\% = 7.33$.
24. C is correct. A reserve account is an internal credit enhancement.
25. C is correct. Under-collateralization is not a form of credit enhancement of auto loan-backed securities.

26. C is correct. The collateral for credit card receivable-backed securities are non-amortizing loans, whereas the collateral for auto loan-backed securities are amortizing loans. Auto loan-backed securities' principal is typically distributed across different bond classes each month.
27. C is correct. The prepayment risk is first absorbed by the support tranche before affecting the PAC tranche. For this reason, a support tranche has high prepayment risk and therefore a higher expected rate of return.
28. B is correct. Corporate guarantee is an external credit enhancement.
29. B is correct. If the actual PSA rate is slower than the lower collar of the PAC, the average life of the PAC tranche will extend.
30. B is correct. Conforming mortgages are used as collateral for agency mortgage pass-through securities. Non-agency RMBS are credit enhanced, either internally or externally, to attract investors. The most common forms of internal credit enhancements are senior/subordinated structures and overcollateralization.
31. A is correct. Support tranches are exposed to high levels of prepayment risk not credit risk.
32. A is correct. In this structure tranches B and C provide protection against extension risk to Tranche A.
33. B is correct. If the actual PSA rate is lower than the lower collar of the PAC, the average life of the PAC tranche will extend.
34. A is correct. Although the collateral pays a fixed rate, it is possible to create a CMO with a floating rate tranche. This is done by constructing a floater and an inverse floater combination.
35. C is correct. In this structure tranches A and B provide protection against contraction risk to Tranche C.
36. B is correct. The CPR is an annual prepayment rate.
37. A is correct. A conditional prepayment rate (CPR) is an annualized rate which indicates the percentage of the mortgage balance at the beginning of the year which is expected to be prepaid by the end of the year.
38. B is correct. The benchmark is said to be 100 PSA, anything over 100 PSA means that prepayments are assumed to be faster than the benchmark.
39. C is correct. CPR is an annualized version of SMM. The other statements are incorrect.

40. A is correct. Contraction risk increases when interest rates fall and extension risk increases when interest rates rise.
41. B is correct. $\text{Prepayment} = \text{SMM} * (\text{Beginning balance} - \text{Scheduled principal repayment}) = 0.93\% * (10,000,000 - 100,000) = 92,070$.
42. C is correct. The average life of a MBS is more relevant than the security's final maturity because it represents the average time to receipt of both expected prepayments and scheduled principal payments.
43. B is correct. The call protection in CMBS at the loan level is achieved through four mechanisms: prepayment lockouts, prepayment penalty points, yield maintenance charges, and defeasance. CMBS are not typically smaller sized loans.
44. B is correct. In the United States and other countries, commercial mortgage loans are usually non-recourse loans.
45. B is correct. When interest rate increases, extension risk increases because there will be fewer prepayments. This shows that interest rate has a direct relation with extension risk.
46. C is correct. Two measures that have been found to be key indicators of potential credit performance of a commercial mortgage-backed security (CMBS) are the loan-to-value ratio (LTV), and the debt-to-service-coverage (DSC) ratio.
47. A is correct. Balloon risk refers to the risk that a borrower will not be able to make the balloon payment when due. Since the term of the loan will be extended by the lender during the workout period, balloon risk is a type of extension risk.
48. C is correct. Under the defeasance mechanism of a commercial mortgage a borrower provides sufficient funds for the servicer to invest in a portfolio of government securities that replicates the cash flows that would exist in the absence of prepayments.
49. C is correct. If a credit card receivables asset backed security (ABS) has a lock-out feature no principal payments are made to the investor, instead the principal repayments are reinvested in new receivables.
50. A is correct. The cash flow is paid from finance charges collected and fees.
51. B is correct. Refinancing of automobile loans is a low probability event due to the short maturity of the loans.
52. A is correct. In an arbitrage CDO, a CDO manager buys and sells debt obligations in order to pay off the holders of the bond classes and to generate an attractive return for the equity tranche and for the manager.

53. A is correct. Interest rate swaps are required because the cash inflows from floating or fixed rate assets are mismatched with the cash outflows to floating rate tranches.
54. C is correct. A CDO is a security backed by a diversified pool of one or more debt obligations.