

1. Balance sheet analysis of a transaction

PROMPTS

1. What is a balance sheet? What is a balance sheet scheme? How are they different?
2. What is an asset and what is a liability?
3. Describe the four entries that are happening on a balance sheet.
4. Compare addition on asset side and subtraction on liability side and the other way around
5. Provide a balance sheet scheme for a transaction between a company and a household, where the company sells the household a chair for cash. Provide the balance sheet scheme reading and interpretation.
6. What is a transaction, and what are its two main types?
7. What distinguishes monetary transactions from non-monetary ones?
8. Why do people accept means of payment like cash in transactions?
9. What are the two sides of a T-account, and what do they represent?
10. Using a stylized balance sheet, explain what happens when Firm 1 purchases goods from Firm 2 using cash.
11. How does double-entry bookkeeping apply to transactions?
12. What is the difference between payment and funding in monetary transactions?
13. Why is it important to assign monetary value to entries in a balance sheet?
14. What questions are fundamental for interpreting balance sheet transactions?

RESPONSES

1. A balance sheet summarizes an organization's or individual's financial position i.e. assets, equity and liabilities at a specific point in time. Balance sheet scheme represents transactions between entities over time. It uses the distinction between asset and liability side of an entity to represent their relationships.
2. Asset refers to what the entity owns and relates to a potential future cash inflow. Liability side refers to what the entity owes and relates to potential future cash outflow.
3. Plus (+) entry on the asset side represents obtaining an asset; Minus (-) entry on the asset side represents giving up an asset; Plus (+) entry on the liability side represents taking on an obligation to be fulfilled in the future; Minus (-) entry on the liability side represents cancelation of a promise either due to its fulfillment or as the entity is released from the obligation for a different reason.
4. 1) + on the asset side means the firm gained something (or cash inflow), and - on the liability side means the firm stopped being liable for something (does not owe something that it owed previously). 2) + on the liability side means the firm has become liable for something (potential future cash outflow), - on the asset side means that the firm had lost an asset that it previously owned.
5. *Balance sheet scheme:*

	Company		Household
[0]	Chair(100)		Cash(100)
[1]	-Chair(100)		+Chair(100)
	+Cash(100)		-Cash(100)
[=]	Cash(100)		Chair(100)

Reading: At the starting point, the firm has a chair and the household has cash, assuming that the cash and the chair are worth the same. The firm and the household wish to engage in a transaction and exchange their assets. At t1, “- chair” on the firm's asset side represents giving up goods that are to be delivered, and “+ cash” on the firm's asset side represents obtaining cash as payment. “+ chair” on the household's asset side represents receiving the good, and “-cash” on the household's asset side represents payment for the good. At the end point, the firm owns the cash and the household owns the chair. Thus the household obtained the chair by spending cash while the firm obtained cash by selling the chair. *Interpretation:* 1) type of balance sheet operations: an exchange of assets, a delivery and a payment. 2) means of payment: cash, and it was funded from the assets of the household 3) payoff: for the household, a chair to be used or sold; for the firm, cash for use in future transactions

6. A transaction is an exchange of value between two or more parties, where each party is compensated for what they give up with what they receive. Transactions can be categorized as: Non-monetary (Barter): Compensation occurs directly through goods or services intended for immediate use. Monetary: At least one party compensates the

other by providing a means of payment, which is acceptable by a wide range of counter-parties.

7. In non-monetary transactions, goods or services are exchanged directly without any payment medium (e.g., barter). In monetary transactions, at least one party provides compensation through a means of payment, which is widely accepted and can be used in other transactions to fulfill payment requirements.
8. People accept cash because it functions as a universally accepted means of payment. It allows them to meet their payment obligations in the future by acquiring other goods, services, or settling debts. The primary utility of cash lies in its widespread acceptability.
9. T-account consists of: Asset Side (Left): Represents what the entity owns, such as cash, goods, or receivables. These entries indicate potential future cash inflows. Liability Side (Right): Represents what the entity owes, such as payables or loans. These entries indicate potential future cash outflows.
10. At the start, Firm 1 has cash (asset) worth 100, and Firm 2 has goods (asset) worth 100. During the transaction: Firm 1 gives up cash (-Cash on the asset side) and gains goods (+Goods on the asset side). Firm 2 gives up goods (-Goods on the asset side) and receives cash (+Cash on the asset side). At the end: Firm 1 owns goods worth 100. Firm 2 owns cash worth 100.
11. Double-entry bookkeeping ensures that every transaction is recorded in at least two accounts, maintaining the balance between assets and liabilities across parties. For example, when one entity's asset decreases (e.g., cash), a corresponding increase occurs in another entity's asset or liability (e.g., goods or receivables).
12. Payment: The act of transferring means of payment from the payer to the payee as compensation in a transaction. Funding: The process of obtaining the means of payment used to make the payment. For instance, the payer might use existing cash or borrow funds to complete the payment.
13. Assigning monetary value standardizes the representation of assets and liabilities, enabling clear analysis and comparison of financial positions. This is crucial for payment system analysis, which depends on tracking changes in value across transactions.
14. The three fundamental questions are the following. Balance Sheet Operations: What specific transformations occurred on the balance sheets of the parties? Means of Payment and Funding: What means of payment were used, and how was the payment funded? Incentive-Payoff: What are the incentives and payoffs for each party to engage in the transaction?

2. Issuance of promises

PROMPTS

1. What is a promise to pay (claim to receive payment)? And how are they related?
2. What are the two corresponding entries of obtaining an asset by a party that occur on a counterparty balance sheet? How are they different?
3. What are the specificities of liabilities?
4. Provide a balance sheet scheme for a case in which two firms make an agreement to exchange cash for goods at a later point in time, and then, before maturity of those promises, the firm that holds the claim to the cash exchanges it for services provided by the third firm. Finish all initiated transactions. Provide the balance sheet scheme reading and interpretation.
5. Why do balance sheet schemes record both the promise to pay and the claim to receive payment?
6. What happens in a balance sheet when a promise is fulfilled?
7. What distinguishes an exchange of promises from an immediate transaction?
8. How does double-entry bookkeeping ensure that promises and claims remain balanced?
9. What happens if a claim is transferred to a third party before it is fulfilled?
10. Why are liabilities always time-defined or condition-defined?

RESPONSES

1. More than often, transactions (or at least one of the compensations) are not executed immediately and parties first exchange promises to compensate their counterparts in an agreed manner at a future point. This act of promising to compensate is a promise to pay and it is an entry on a liability side for a given party. At the same time, the counterparty that is on the receiving end of a promise obtains a claim to receive, that is an entry on its asset side. Once the promise has been fulfilled the asset and liability in question are canceled.
2. An asset can be obtained by a party either when a counterparty gives up an asset of its own as in the case of payment or delivery, or when a counterparty issues a promise, thus taking on a liability so that the party obtains a claim that is its asset, such as in the case of promising to pay later. Obtaining an asset via counterparty liability issuance is specific insofar as the total amount of assets in the system has expanded, which is not the case when the asset is simply transferred from one party to another.
3. 1) our promises are the basis of counterparty claims; 2) unlike assets, where the party is free to decide when and how to use them, liabilities are either time defined or condition defined and they necessitate an action (often giving up an asset), 3) times at which a liability comes due is called maturity.
4. *Balance sheet scheme:*

	Firm 1		Firm 2		Firm 3	
[0]	Cash (100)		Goods (100)		Services (100)	
[1]	+ Order claim to receive goods [from Firm 2 at t3]	+ Promise to pay [to Firm 2 at t3]	+ Claim to get paid [by Firm 1 at t3]	+ Promise to deliver goods [to Firm 1 at t3]		
			- Claim to get paid [by Firm 1 at t3]		+ Claim to get paid [by Firm 1 at t3]	
[2]			+ Services (100)		- Services (100)	
	+ Goods (100)		- Goods (100)	- Promise to deliver goods [to Firm 1 at t3]	- Claim to get paid [by Firm 1 at t3]	
[3]	- Order claim to receive goods [from Firm 2 at t3]				+ Cash (100)	
	- Cash (100)	- Promise to pay [to Firm 2(3) at t3]				
[=]	Goods (100)		Services (100)		Cash (100)	

Reading: At the starting point T0, F1 holds goods, F2 holds cash, and F3 holds services. Consider that the goods, cash, and services are all worth the same value. The exchange of promises and claims regarding the payment and delivery of goods occur in T1. “+promise to deliver goods to F2 at T3” on F1’s liability side corresponds to the “+ claim to receive cash” on F2’s asset side. F2’s “+promise to pay F1 at T3” on the liability side corresponds to F1’s asset side “+claim to receive cash”. The swap of IOUs between the two firms signals that they have entered an agreement. However, at T2, before agreements are fulfilled, F1 exchanges the claim to receive cash with F3’s services. “- claim to receive cash”, “+services” on F1’s asset side and “+ claim to receive cash” and “-services” on F3’s asset side is the asset transfer between F1 and F3. At T3, delivery of goods and payment occur. As these assets move between the two balance sheets, the promises are effectively fulfilled, so that the two liabilities and corresponding assets

issued beforehand can be removed. Their removal is represented by the six “-” entries. Worth noting here is that the promise to pay changed the payee from F1 to F3. The end net position is F1 holds services, F2 holds goods, and F3 holds cash. *Interpretation* (1): (a) issuance of liabilities in the form of promises and creation of corresponding assets in the form of claims, referring to delivery and payment (b) an exchange of assets in the form of delivery and payments (c) cancellation of previously created claims and extinguishing of previously issues promises (2) Means of payment involved are cash and the payment was funded from the assets of the payee, F2 (3) Payoff for F1 are services that can be used, for F2 are goods that can be sold or used, for F3 is cash that can be used as means of payment in future transactions

5. Balance sheet schemes record both the promise to pay and the claim to receive payment because every liability has a corresponding asset. When one party issues a promise to pay, this creates an obligation recorded as a liability. At the same time, the counterparty that receives this promise records it as a claim, which is an asset. This double-entry representation ensures that financial agreements are properly tracked, allowing for a clear view of how obligations and rights are distributed among economic actors. Once the payment is made, both the liability and the corresponding asset are removed from the balance sheets.
6. When a promise is fulfilled, both the liability and the corresponding asset are removed from the balance sheet. This occurs because the obligation has been met, meaning there is no longer a need for a record of future payment or delivery. In balance sheet terms, fulfilling a promise involves: 1. The transfer of cash or goods, reflecting an asset movement. 2. The cancellation of the liability for the party that made the promise. 3. The removal of the claim from the balance sheet of the party that held the promise as an asset. For example, if Firm 1 promised to pay Firm 2 at a later date and then fulfills that promise with a cash payment, Firm 1 removes both the cash (asset) and its obligation (liability), while Firm 2 removes the claim to receive cash (asset) and gains cash instead.
7. An immediate transaction involves a direct exchange of assets (e.g., cash for goods), meaning no liabilities or claims are created. In contrast, an exchange of promises involves a delay in fulfilling the transaction, leading to the creation of liabilities for the party making the promise and claims for the counterparty receiving the promise. In balance sheet terms: In an immediate transaction, assets are simply transferred without recording liabilities or claims. In a transaction based on promises, each party initially records a promise to pay or deliver as a liability and a claim to receive as an asset. These entries remain until the promises are fulfilled. This distinction is crucial because promises introduce risks, as there is always the possibility that the obligated party will fail to meet its commitment.
8. Double-entry bookkeeping ensures that every financial obligation has a corresponding right by requiring that every transaction affects at least two accounts—one on the asset side and one on the liability side. When a party issues a promise, it records a liability, while the counterparty that receives the promise records a corresponding claim as an asset. For example: If Firm 1 promises to pay Firm 2 in the future, Firm 1 records a liability (+Promise to Pay), and Firm 2 records an asset (+Claim to Receive Payment).

When payment is made, Firm 1 removes the liability (-Promise to Pay) and reduces cash (-Cash), while Firm 2 removes the asset (-Claim to Receive Payment) and increases cash (+Cash). This system ensures financial integrity, preventing discrepancies where liabilities or claims appear without corresponding entries.

9. If a claim is transferred to a third party before it is fulfilled, the original claim holder removes it from their balance sheet and records a new asset received in exchange (e.g., cash or services). The third party then records the claim as an asset, meaning they now hold the right to receive payment from the original promisor. The promisor's obligation remains unchanged. For example: 1. Firm 1 has a claim to receive cash from Firm 2 at a future date. 2. Instead of waiting, Firm 1 transfers this claim to Firm 3 in exchange for services. 3. Firm 3 now holds the claim and will receive payment from Firm 2 when the promise matures. This transfer allows claims to function as tradable assets, enabling flexibility in financial transactions.
10. Liabilities are always time-defined or condition-defined to ensure that obligations are enforceable and cannot be indefinitely postponed or ignored. Unlike assets, which provide flexibility in their use, liabilities require the party that issued them to take action at a specific time or upon the occurrence of a specific event. Time-defined liabilities: Have a fixed maturity date (e.g., a loan that must be repaid in six months). Condition-defined liabilities: Depend on an external event (e.g., an insurance company must pay if an insured event occurs). This structure prevents uncertainty and ensures that economic transactions proceed in a structured and predictable manner. Would you like me to add more prompts and responses?

3 Risk related

PROMPTS

1. What is the difference between liquidity and solvency? How do they relate? Provide a balance sheet scheme for a transaction between a company and a household that promise to compensate each other at the same time at a much later point in time, where the company sells to the household a chair for cash. Provide the balance sheet scheme reading and interpretation.
2. Provide a balance sheet scheme for a transaction between two Firms that promise to compensate each other at different times in the future, where Firm 2 sells the goods to Firm 1 for cash. Explain the bargaining power of parties involved
3. Provide a balance sheet scheme for a transaction between two Firms, where Firm 2 sells goods to Firm 1 for cash, so that one of the parties promises to compensate the counterparty in the future while the other compensates immediately. Explain the bargaining power of parties involved
4. Provide a balance sheet scheme for a transaction where one of the parties facing the possibility of not having the means of payment when needed to make a payment, but it is not currently insolvent as it holds additional assets. Discuss how the market liquidity of those assets will affect the funding liquidity and solvency of that party at the time when the payment needs to be made. Provide the balance sheet scheme reading and interpretation.

PROMPT RESPONSES

1. *Balance sheet scheme:*

	Household			Firm	
[0]	Cash (100)			Chair (100)	
[1]	+ Order claim to receive chair[from Firm at t2]	+ Promise to pay [to Firm at t2]		+ Claim to get paid [by HH at t2]	+ Promise to deliver chair [to HH at t2]
	- Cash (100)			+ Cash (100)	
	+ Chair (100)			- Chair (100)	
[2]	- Order claim to receive Chair [from Firm at t2]	- Promise to pay [to Firm at t2]		- Claim to get paid [by HH at t2]	- Promise to deliver Chari [to HH at t2]
[=]	Chair (100)			Cash (100)	

Reading: At the starting position the Firm has a chair and the Household holds cash. The exchange of promises regarding the delivery of goods and payments occurs in t1. “+ Promise to deliver chair [to Household at t2]” on Firm’s liability side corresponds to “+ claim to receive chair [from Firm at t2]” entry on Household’s asset side, while the “+ Promise to pay [to Firm at t2]” on Household’s liability side corresponds to “+ Claim to

receive cash [by Household at t2]" on Firm's asset side. At t2, delivery of goods and the payment occur. As these assets move between the two balance sheets, the promises are effectively fulfilled, so that the two liabilities and corresponding assets issued beforehand can be removed. Their removal is represented by the four " – " entries regarding promises and claims. The end net position is the Firm holding cash and the Household holding the chair.

(1)	Operations: 1) issuance of liabilities in the form of promises and creation of corresponding assets in the form of claims, referring to delivery and payment 2) an exchange of assets in the form of delivery and payment 3) cancelation of previously created claims and extinguishing of previously issued promises
(2)	Means of payment involved are cash and that the payment was funded from the assets of the payer, the Household
(3)	Payoff for the Household is the chair that can be sold or used, and the payoff for the Firm is cash that can be used as means of payment in future transactions
(4)	no
(5)	no

2. Balance sheet scheme

	Firm 1		Firm 2	
[0]	Cash (100)		Goods (100)	
[1]	+ Goods (100)	+ Promise to pay [to Firm 2 at t2]	+ Claim to get paid [by Firm 1 at t2]	
[2]	- Cash (100)	- Promise to pay [to Firm 2 at t2]	- Goods (100)	
			- Claim to get paid [by Firm 1 at t2]	
			+ Cash (100)	
[=]	Goods (100)		Cash (100)	

3.

Reading: At the starting point Firm 1 holds cash and Firm 2 holds goods. At t1 firm 2 transfers the goods and in return Firm 1 promises to pay in t2. In t2 firm 1 pays.

4. *Balance sheet scheme:*

	Firm 1		Firm 2	
[0]	Cash (100)		Goods (100)	
[1]	+ Order claim to receive goods [from Firm 2 at t2]	+ Promise to pay [to Firm 2 at t3]	+ Claim to get paid [by Firm 1 at t3]	+ Promise to deliver goods [to Firm 1 at t2]
	+ Goods (100)		- Goods (100)	- Promise to deliver goods [to Firm 1 at t2]
[2]	- Order claim to receive goods [from Firm 2 at t2]			
	- Cash (100)	- Promise to pay [to Firm 2 at t3]	+ Cash (100)	
[3]			- Claim to get paid [by Firm 1 at t3]	
[=]	Goods (100)		Cash (100)	

Reading: At the starting point Firm 1 holds cash and Firm 2 holds goods. At t1 they agree to exchange goods and cash with goods delivered at t2 and cash delivered at t3.

5. *Balance sheet scheme:*

	Household		Firm	
[0]	Cash (70)		Chair (100)	
	Apple (30)			
[1]	+ Order claim to receive chair [from Firm at t2]	+ Promise to pay [to Firm at t3]	+ Claim to get paid [by Household at t3]	+ Promise to deliver goods [to Household at t2]
	+ Chair (100)		- Goods (100)	- Promise to deliver goods [to Household at t2]
[2.1]	- Order claim to receive goods [from Firm at t2]			
[2.2]				

At t2.2 the Household would opt to sell the apple for 30 to a third party if possible. If that is not possible, it would potentially opt to sell the Chair for 100 if possible. If none of these options are available, it might opt for default. In that case in t3, the household would pay 70 and instead of the claim (and corresponding promise to pay) the firm would gain a default claim on the household (who would take on a corresponding default liability) for 30. The resolution of that claim could go in different ways: the first option is that the Firm is happy to take the apple valued at 30 as a fulfillment of the default promise. Alternatively, assets of the household would be liquidated (sold) until 30 units of means of payment are obtained to pay the firm. Thus even if the household is solvent, market liquidity of its assets determines if it has funding liquidity. If the apple is not fully (market) liquid i.e. could be sold on the spot for its full value, the household would need to sell the chair in order to have funding liquidity

4 Introduction to credit

PROMPTS

1. Provide balance sheets for cases of a firm that is in need of liquidity to buy resources expanded to produce a good that is sold, (1) breaking even and (2) incurring a loss in the case of three financial instruments: (a) bond, (b) share and (c) bank loan. Compare the cases
2. Provide balance sheets for cases of a firm that holds a capital good and is in need of liquidity to buy resources expanded to produce a good that is sold, incurring a loss in the case of a bond, leading to liquidation and to bankruptcy. Compare the cases
3. Provide the balance sheet and interpret the case where Firms exchange promises regarding the cash and the resources. Assume that after the production process the Firm that obtained the resources is at a loss and needs to look for liquidity to repay the original promise to pay to the other firm (compare bond, share and bank loan). Compare the cases
4. Provide balance sheets and interpret cases of a firm that is in need of liquidity to buy resources expanded to produce a good that is sold, incurring a loss in the case of bond that is sold after issuance (1) in the secondary market early, before the production, and (2) late, after the production process and selling of goods. Compare the cases
5. Compare risk taken in the case of bond, share and bank loan issuance. Use the balance sheet schemes provided in this section.
6. Compare payoffs in the case of bond, share and bank loan issuance. Use the balance sheet schemes provided in this section.
7. How funding liquidity conditions change with the introduction of credit. Provide a comparative analysis and reasoning behind decisions taken by an entity facing current payment requirements.

PROMPT RESPONSES

1.

For breaking even cases, we can observe a difference between the bond & loan financing versus stock financing, as revenue needed to break even is lower in the case stock - because in that case the cost is simply the cost of resources and there is no cost of financing.

For loss cases, we can observe a difference between the bond & loan financing versus stock financing, as in the former cases the revenue that implies a loss leads to the issuance of a default liability that represents the fact that the borrower was unable to repay, while in the latter case, it leads to capital loss for the stockholders.

(1a) Bond breaking even

	Firm A		Firm B		Investor	
[0]			Resources (100)		Cash (100)	
[1]	+Cash (100)	+Bond (100,t4,10%)			-Cash (100)	
					+Bond (100,t4,10%)	
[2]	-Cash (100)		+Cash (100)			
	+Resources		-Resources			
	-Resources					
[3]	+Cash (110)					
[4]	-Cash (110)	-Bond			-Bond	
					+Cash(110)	
[=]			Cash (100)		Cash (110)	

(2a) Bond, loss

	Firm A		Firm B		Investor	
[0]			Resources (100)		Cash (100)	
[1]	+Cash (100)	+Bond (100,t4,10%)			-Cash (100)	
					+Bond (100,t4,10%)	
[2]	-Cash (100)		+Cash (100)			
	+Resources		-Resources			
	-Resources					
[3]	+Cash (80)					
[4]	-Cash (80)	-Bond			-Bond	
					+Cash (80)	
		+Default liability (30)			+Default Claim (30)	
[=]		Default liability (30)	Cash (100)		Cash (80)	
					Default Claim (30)	

(1b) Stock, breaking even

	Firm A		Firm B		Investor	
[0]			Resources (100)		Cash (100)	
[1]	+Cash (100)	+(Stock)			-Cash (100)	
					+Stock	
[2]	-Cash (100)		+Cash (100)			
	+Resources		-Resources			
	-Resources					
[3]	+Cash (100)					
[4]						
[=]	Cash (100)	(Stock) (100)	Cash (100)		Stock (100)	

(2b) Stock, loss

	Firm A		Firm B		Investor	
[0]			Resources (100)		Cash (100)	
[1]	+Cash (100)	+(Stock)			-Cash (100)	
					+Stock	
[2]	-Cash (100)		+Cash (100)			
	+Resources		-Resources			
	-Resources					
[3]	+Cash (80)					
[4]						
[=]	Cash (80)	Stock (80)	Cash (100)		Stock (80)	

(1c) Bank Loan, Breaking even

	Firm A		Firm B		Bank (of Firm A)	
[0]			Resources (100)		Cash (100)	
[1]	+Deposit (100)	+Loan (100,t5,10%)			+Loan (100,t5,10%)	+Deposit (100)
[2]	-Deposit (100)				-Cash (100)	-Deposit (100)
	+Cash (100)					
	-Cash (100)		+Cash			
[3]	+Resources		-Resources			
	-Resources					
[4]	+Cash (110)					
[5]	-Cash (110)					
	+Deposit (110)				+Cash (110)	+Deposit (110)
	-Deposit (110)	-Loan			-Loan	-Deposit (110)
[=]			Cash		Cash (110)	

(2c) Bank Loan, Loss

	Firm A		Firm B	Bank (of Firm A)	
[0]			Resources (100)	Cash (100)	
[1]	+Deposit (100)	+Loan (100,t5,10%)		+Loan (100,t5,10%)	+Deposit (100)
[2]	-Deposit (100)			-Cash (100)	-Deposit (100)
	+Cash (100)				
	-Cash (100)		+Cash		
[3]	+Resources		-Resources		
	-Resources				
[4]	+Cash (80)				
[5]	-Cash (80)				
	+Deposit (80)			+Cash (80)	+Deposit (80)
	-Deposit (80)	-Loan		-Loan	-Deposit (80)
		+Default liability (30)		+Default Claim (30)	
[=]		Default liability (30)	Cash	Cash (80)	
				Default Claim (30)	

2.

In the case that other assets can be liquidated at high enough price, the firm might opt for that, in order to continue operating. In that case the lender is repaid fully. In the case that the borrower is unable to liquidate the other assets for high enough price, they will announce bankruptcy, and the lender will receive the proceedings from the court liquidation of those assets up to being fully repaid (often taking a loss).

Bond, loss, firm liquidates assets

	Firm A		Firm B	Investor	
[0]	Machine (50)		Resources (100)	Cash (100)	
[1]	+Cash (100)	+Bond (100,t4,10%)		-Cash (100)	
				+Bond (100,t4,10%)	
[2]	-Cash (100)		+Cash (100)		
	+Resources		-Resources		
	-Resources				
[3]	+Cash (80)				
	-Cash (80)	-Bond		-Bond	
[4]	- Machine			+Cash (110)	
	+Cash (30)				
	-Cash (30)				
			Cash (100)	Cash (110)	

Bond, loss, firm bankruptcy

	Firm A		Firm B		Investor	
[0]	Machine (50)		Resources (100)		Cash (100)	
[1]	+Cash (100)	+Bond (100,t4,10%)			-Cash (100)	
					+Bond (100,t4,10%)	
[2]	-Cash (100)		+Cash (100)			
	+Resources		-Resources			
	-Resources					
[3]	+Cash (80)					
[4]	-Cash (80)	-Bond			-Bond	
					+Cash (80)	
[5]		+Default liability (30)			+Default Claim (30)	
	- Machine					
[6]	+Cash (20)				+Cash (20)	
	-Cash (20)	-Default liability (30)			-Default Claim (30)	
	BANKRUPT		Cash (100)		Cash (100)	

4.

Early secondary market sale in this case provides Investor 1 with 5 cash of profit while Investor 2 ends up holding a default claim due to missed repayment by the borrower. Late secondary market sale leaves Investor 1 breaking even while investor 2 ends up in the same situation. Investor 1 might be interested in an early sale in order to make profit, and in a late sale because he holds insider information on the probability of repayment by the borrower - that is why he is willing to sell the bond with no profit at such a late stage.

Bond, loss, early secondary market sale

	Firm A		Firm B		Investor 1		Investor 2	
[0]			Resources (100)		Cash (100)		Cash (105)	
[1]	+Cash (100)	+Bond (100,t4,10%)			-Cash (100)			
					+Bond (100,t4,10%)			
[2]	-Cash (100)		+Cash (100)		-Bond		+Bond	
	+Resources		-Resources		+Cash (105)		- Cash (105)	
	-Resources							
[3]	+Cash (80)							
[4]	-Cash (80)	-Bond					-Bond	
							+Cash (80)	
		+Default liability (30)					+Default Claim (30)	
[=]		Default liability (30)	Cash (100)		Cash (105)		Cash (80)	
							Default Claim (30)	

Bond, loss, late secondary market sale

	Firm A		Firm B	Investor 1		Investor 2	
[0]			Resources (100)	Cash (100)		Cash (100)	
[1]	+Cash (100)	+Bond (100,t4,10%)		-Cash (100)			
				+Bond (100,t4,10%)			
[2]	-Cash (100)		+Cash (100)				
	+Resources		-Resources				
	-Resources						
[3]	+Cash (80)			-Bond (100)		-Cash (100)	
	-Cash (80)	-Bond		+Cash (100)			
[4]		+Default liability (30)				+Cash (80)	
		Default liability (30)	Cash (100)			+Default Claim (30)	
[=]						Cash (80)	
						Default Claim (30)	

5. Monetary policy

PROMPTS

1.

	Firm 1	Firm 2	Bank 1	Bank 2	Household 1	Household 2	Central Bank
[0]	Car (100)	Boat (50)	Reserve Deposit (25)	Reserve Deposit (37.5)			Reserve deposit B1 (25) Reserve deposit B2 (25)

Household 1 is a client of Bank 1 and wants to buy a boat. Household 2 is a client of Bank 2 and wants to buy a car. Using a balance sheet scheme show how this transaction occurs. Assume that banks first need to settle intraday interbank claims and that only afterwards RRR needs to be fulfilled. What would happen if RRR is 10%? What interest rate conditions need to be in place for the transaction to occur?

2.

	Firm 1	Firm 2	Bank 1	Bank 2	Household 1	Household 2	Central Bank
[0]	Car (100)	Boat (50)	Reserve Deposit (25)	Reserve Deposit (37.5)			Reserve deposit B1 (25) Reserve deposit B2 (37.5)

Household 1 is a client of Bank 1 and wants to buy a boat. Household 2 is a client of Bank 2 and wants to buy a car. Using a balance sheet scheme show how this transaction occurs. Assume that banks first need to settle intraday interbank claims and that only afterwards RRR needs to be fulfilled. What would happen if RRR is 25%

3.

	Firm 1	Firm 2	Bank 1	Bank 2	Household 1	Household 2	Central Bank
[0]	Car (100)	Boat (50)	Reserve Deposit (25)	Reserve Deposit (37.5)			Reserve deposit B1 (25) Reserve deposit B2 (25)

RESPONSES

2.

3.

[illegible]