



Instructor Guide: Insolvency, Priority, and Creditor Distribution

Laboratory implementation, theoretical foundations,
experimental evidence, and variants

Behavioral and Experimental Economics Research Lab
Department of Economics



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<https://beer-lab.org/>

How to use this guide

This guide supports the preparation, implementation, and classroom discussion of the insolvency, priority, and creditor distribution activity available through the Behavioral and Experimental Economics Research Lab (BEER Lab) at the Department of Economics of Tecnológico de Monterrey. It is intended for instructors with different levels of familiarity with experimental and behavioral economics.

The document offers three reading paths. The **quick guide** is enough to launch a session. The operational chapters explain each screen used by instructors and students. The conceptual chapters present the theories, predictions, and empirical findings needed to lead the post-game discussion.

Access instructions and common screens are explained once. Each variant then focuses only on what changes relative to the basic game: configuration, group size, decisions, predictions, relevant outcomes, and academic literature.

Author

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For the instructor

This guide follows the English-language interface. Spanish configurations use the same logic. Never project individual codes or connect outcomes to names, student identification numbers, or seats in the room.

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Preparation and access

1.1 Family overview

Purpose	Compare distribution rules and reorganization approval among creditors with different claims.
Experimental unit	a group of 3 people per case
Participants	Multiples of 3; minimum 3.
Suggested duration	20–40 minutes of play; 60–90 with discussion.
Basic edition	One case; ten with fixed groups or rematching with stable roles.
Extended edition	9 conditions, including the reference; ten cases.
Decision	insolvency, priority, reorganization
Payoff	ECU per case; sum of active cases. See role-specific accounts.
Topics	insolvency; priority; reorganization; creditors; loss allocation
JEL	C92, K22, G33

1.2 Locate the activity and choose a comparison

Start at <https://beer-lab.org/en/> and select CLASSROOM in the top menu. This opens <https://teaching.beer-lab.org/en/>, where you can search for this activity by title and filter by topic or JEL code. The card distinguishes Español and English; Show extended version changes the edition. The directory language does not by itself determine the session language. Check the configuration name before creating a session and clear filters from an earlier search if the card is missing.

The stable address for this family is <https://insolvency.beer-lab.org>. Participants enter through https://insolvency.beer-lab.org/room/insolvency_en; instructors prepare sessions through <https://insolvency.beer-lab.org/demo> or <https://insolvency.beer-lab.org/rooms>. The preview verified on this computer is <http://localhost:8212/demo>. A local address works only on the computer running it. Classroom use across several devices requires the institutional instance. If the card is not yet visible, its catalog integration remains to be completed. Do not substitute a similar family and thereby change the rules without noticing.

Distinguish four links. The room is the entry point shared with the class. The instructor panel selects configurations and creates sessions. An individual link identifies one specific participant slot and belongs to one person. The report belongs to that session and contains information reserved for the instructor. Sharing the panel is different from sharing the room: it can expose

administrative controls or outcomes that should still remain hidden.

Before inviting participants, define a question: which institution will you compare, and what outcome would be compatible with the proposed mechanism? Select the reference condition and one extension that changes the relevant dimension. Record what remains constant, how you will assign conditions, and when discussion begins. Changing several rules simultaneously can create an interesting class, but prevents attribution of the observed difference to just one rule. The extensions support several lessons; they need not all be run in a single meeting.

1.3 Prepare a usable session

The experimental unit in this family is a group of 3 people per case. The roles are Creditor 1, Creditor 2, Creditor 3. Prepare 3 slots per interactive unit where applicable, and check the requirement displayed by the creation form. Rematching needs several units for composition to change; with only one unit there is no alternative counterpart. In an individual activity, each student advances independently. Do not add artificial participants to a real session merely to complete groups: this changes both the experience and the data you intend to discuss.

Open a demonstration beforehand. Read the instructions from every role and solve one numerical example by hand. Check the reference balance, resources already committed, transfers, and costs that consume resources. A starting figure of 100 ECU does not imply that everyone can spend 100 on every decision. Some games subtract a loss or an invested claim before choices occur. Final payment appears at case completion and accumulated payment adds all active cases. This guide explains how to reconstruct those values independently of the results screen.

ECU means Experimental Currency Units. They are the activity's accounting unit, not an automatic equivalence with pesos or dollars. This delivery does not announce a cash conversion. If the laboratory organizes a paid session, agree and communicate the exchange rate and payment rule beforehand. Do not associate higher earnings with a better grade: maximizing points and producing a well-supported academic explanation are different objects of assessment.

Allow time for reading and private questions. Check that each device can enter the room and that participants do not share an individual link. Project only public instructions. A student viewing a private file should not display it to the entire class. Prepare an alternative for someone who does not participate: they can examine aggregated outcomes after the activity and solve the same conceptual exercise without receiving private information during decisions.

For the instructor

Before starting, confirm title, language, edition, number of cases, and participant count. Demo and Rooms must contain only this family's configurations and four rooms. If another game appears, consult laboratory coordination before starting. Correct filtering protects both the instructions and subsequent downloads.

1.4 Accompany the participant sequence

The welcome page introduces the laboratory and its rules: decide privately, remain silent, and seek assistance without communicating decisions. Instructions, the session's specific condition, and comprehension questions follow. These questions check resources, number of cases, ECU meaning, and a central mechanism. An incorrect answer produces a corrective explanation. Ask the student to identify the relevant rule before submitting again; do not treat that error as evidence about preferences or strategy.

After comprehension, the case page identifies position and period. Decision pages appear when that role must act. In interactive games, waiting pages allow the program to collect the information required before advancing. Waiting does not reveal another person's decision and does not mean a choice was rejected. The individual activity has no synchronization between participants. The instructor should distinguish expected synchronization from a connectivity problem.

Case results show payments and accounting components. The closing page states that the activity is finished and asks participants to remain there. Do not launch another session in the same tab until discussion has ended or data have been saved. If a student finishes early, request silence. Comments about offers, votes, or losses can affect people who are still deciding, particularly in repeated versions.

What participants will see

Each person receives the information needed for their own role. A screen can display a private balance or file that other positions do not know. Instructor assistance should clarify what a rule means without recommending an option or revealing what happened in another unit.

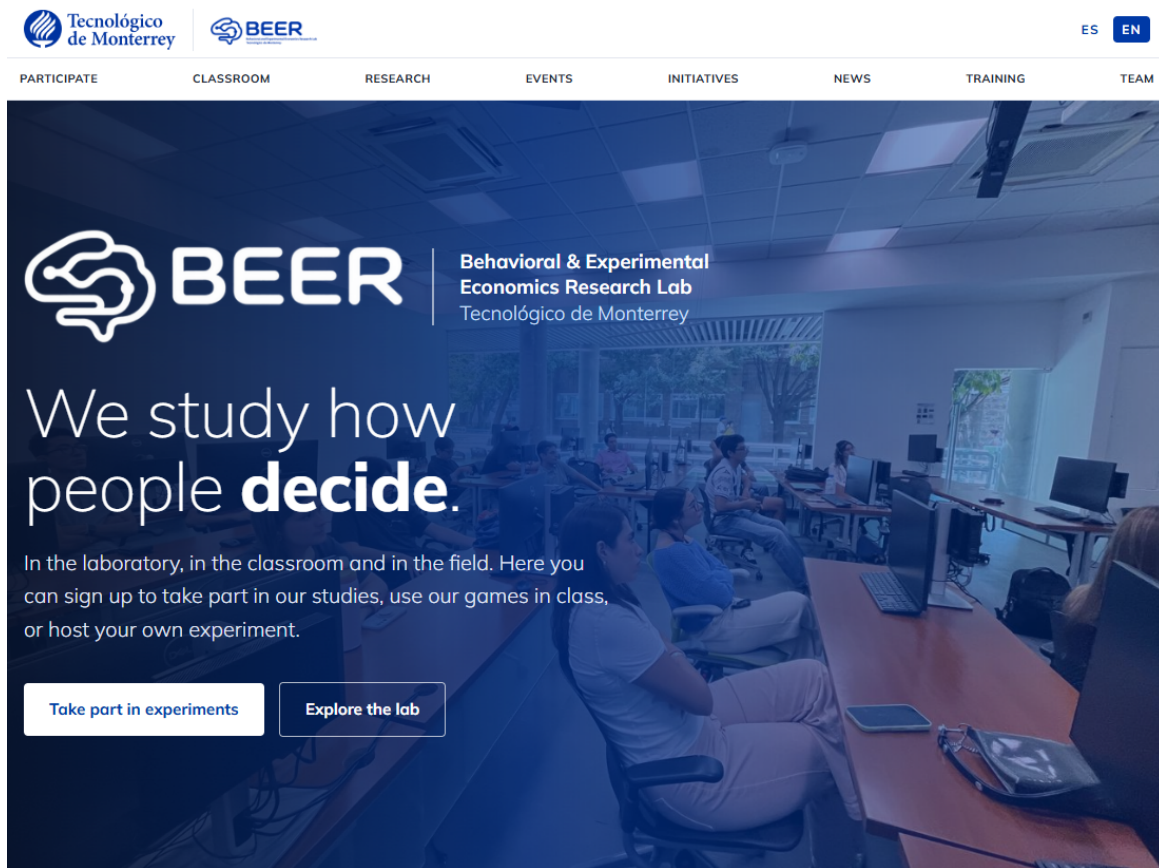


Figure 1.1: Current institutional navigation: select CLASSROOM to open classroom experiments.

INSTRUCTORS AND STUDENTS

Classroom experiments

Experimental economics games for classroom activities and discussion. Open the game your instructor tells you.

Instructors: how to use these games in class or propose a new one → [instructor guide](#)
 Lab research: beer-lab.org/en/research

Search by title, topic, keyword or JEL code...

Topic ▼ JEL code ▼ 103 games

Electoral Accountability and Political Selection

Study how the prospect of remaining in office changes an officeholder's behavior and how information allows voters to choose between politicians with different types. Basic: One encounter or four encounters with fixed or reassigned groups. Extended: Eight treatments on continuation, information, types, office value, term limits, and audits.

Aggregate Demand and Aggregate Supply

Understand how spending choices aggregate into demand and how equilibrium with supply determines output and prices. Basic: One period, ten periods with the same economy, or ten periods with reassigned economies. Extended: Demand expansion and contraction, supply shock, fiscal stimulus, capacity, expectations, and coordination.

Figure 1.2: Current institutional navigation: search by title, topic, or JEL code and confirm language and edition.

oTree Demo Sessions Rooms Data Server Check Logout

Demo

Insolvencia, prelación y reparto entre acreedores · Básica · ES · Un caso
Insolvencia, prelación y reparto entre acreedores · Básica · ES · Diez casos · Participantes estables / orden fijo
Insolvencia, prelación y reparto entre acreedores · Básica · ES · Diez casos · Reasignación conservando roles
Insolvency, Priority, and Creditor Distribution · Basic · EN · One case
Insolvency, Priority, and Creditor Distribution · Basic · EN · Ten cases · Stable participants / fixed order
Insolvency, Priority, and Creditor Distribution · Basic · EN · Ten cases · Rematching with stable roles
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Reparto proporcional
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Igualación de cobros
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Igualación de pérdidas
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Prolación estricta

Insolvencia, prelación y reparto entre acreedores / Insolvency, Priority, and Creditor Distribution — BEER Lab

Seleccione una variante de este juego. Select a version of this game.

Figure 1.3: Demo lists this family's configurations. Confirm language, edition, and horizon before creating a session. (1/2)

Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Unanimidad para reorganizar	
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Voto por valor del crédito	
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Sin suspensión de ejecuciones	
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Costo de reorganización	
Insolvencia, prelación y reparto entre acreedores · Extendida · ES · Valor de continuación incierto	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Proportional distribution	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Equal awards	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Equal losses	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Strict priority	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Unanimity for reorganization	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Voting by claim value	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Without an enforcement stay	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Reorganization cost	
Insolvency, Priority, and Creditor Distribution · Extended · EN · Uncertain continuation value	

Figure 1.4: Demo lists this family's configurations. Confirm language, edition, and horizon before creating a session. (2/2)

oTree
Demo
Sessions
Rooms
Data
Server Check
Logout

Rooms

Current rooms:

Insolvencia, prelación y reparto entre acreedores · Básica · ES
Insolvency, Priority, and Creditor Distribution · Basic · EN
Insolvencia, prelación y reparto entre acreedores · Extendida · ES
Insolvency, Priority, and Creditor Distribution · Extended · EN

Figure 1.5: Four rooms distinguish language and edition; share only the room corresponding to the session.

oTree Demo Sessions Rooms Data Server Check Logout

Room: Insolvency, Priority, and Creditor Distribution · Basic · EN

Create a new session

Session Config

Insolvency, Priority, and Creditor Distribution · Basic · EN · One case

Number of participants

Complete groups of 3 participants. Use a multiple of 3; minimum 3.

Create

[Configure session](#) ⚙️

App sequence

insolvency_game (10 rounds)

0 participants present

Start links

These URLs will stay constant for new sessions, even if the database is recreated.

Room-wide URL

Here is the room-wide URL anyone can use. Don't use this link when testing in multiple tabs on the same browser, because all tabs will be assigned to the same participant, using a cookie.

http://127.0.0.1:8212/room/insolvency_en

Figure 1.6: Instructor form: check participant count and configuration before creating.




Your role: **Creditor 2** · Case 1 / 1

Welcome to the laboratory

The Behavioral and Experimental Economics Research Lab at the Department of Economics, Tecnológico de Monterrey, is a place to learn about economic decisions through controlled activities.

- Remain silent and do not communicate with other people.
- Decide individually and privately.
- Follow the instructions; do not refresh, close or leave the page.
- If there is a problem, raise your hand or contact staff privately.

☐ I have read the rules and am ready to continue.

Continue

Figure 1.7: The welcome page introduces the laboratory and private-decision rules.




Your role: **Creditor 3** · Case 1 / 1

Instructions

Resources and unit of account

Each creditor starts from 100 ECU and an already invested claim of [60, 40, 20] for positions 1, 2 and 3. ECU means Experimental Currency Units. Payoff is initial balance minus claim plus recovery; claims are not extra money.

ECU stands for Experimental Currency Units. It is the unit of account for this activity.

This session does not convert ECU into real money.

Each creditor starts from 100 ECU and an already invested claim of [60, 40, 20] for positions 1, 2 and 3. ECU means Experimental Currency Units. Payoff is initial balance minus claim plus recovery; claims are not extra money.

Liquidation has 60 ECU and pays [30, 20, 10].

Reorganization has 90 ECU, consumes 0 ECU and proposes [45, 30, 15].

Figure 1.8: Actual instructions: identify resources, costs, and the session rule before starting. (1/2)

Approval requires: at least two of three creditors must approve.

Without a stay, any individual enforcement request forces collective liquidation under the same distribution rule. In other conditions individual enforcement is unavailable.

Under uncertain value, an approved reorganization obtains 60 or 120 ECU with equal probability. Realized distributions are capped by claims and any surplus remains in an external account. Other conditions use the fixed value.

Decisions are recorded before votes are disclosed. Each round is an independent proceeding; balances and claims renew.

Specific rule for this session

Liquidation preserves each claim's proportional share. Approval requires two votes.

Number of cases: 1 · Stable participants / fixed order

Each case begins with the described resources. Final payment sums all active cases.

Continue

Figure 1.9: Actual instructions: identify resources, costs, and the session rule before starting. (2/2)




Your role: **Creditor 1** · Case 1 / 1

Check the rules

Resources and unit of account

ECU stands for Experimental Currency Units. It is the unit of account for this activity.

This session does not convert ECU into real money.

What is the individual reference balance before claims, losses or decisions?

101

Your answer: 101. The correct answer is 100. The reference balance before losses, claims or decisions is 100 ECU. Adjustments are explained separately.

How many cases are included in this session?

Figure 1.10: An incorrect answer receives an explanation. Address understanding before interpreting choices. (1/2)

Your answer: 2. The correct answer is 1. This session contains 1 case(s); this is not group size.

What does ECU mean?

Your answer: An academic grade. The correct answer is Experimental Currency Units. ECU means Experimental Currency Units. No conversion to real money is announced.

Payoff adds the full endowment, the claim, and recovery.

Your answer: True. The correct answer is False. The claim is already invested: payoff equals endowment minus claim plus recovery.

Continue

Figure 1.11: An incorrect answer receives an explanation. Address understanding before interpreting choices. (2/2)

Insolvency: claims and collective decisions

2.1 The problem organizing the game

Insolvency occurs when available assets cannot satisfy every obligation. The problem is not simply how to produce more resources; it also concerns which rights prevail when several creditors claim the same estate. This activity separates two questions: how to distribute liquidation value, and who can authorize a reorganization that changes value and distribution. The answer to the first question changes incentives surrounding the second.

Three creditors participate in each proceeding. Their claims are 60, 40, and 20 ECU, while liquidation makes 60 available. Total claims are 120, so the estate covers only half. Each person starts with 100 before the investment already made. Liquid balances before recovery are therefore 40, 60, and 80. A claim is a right to future resources; adding it again to the initial 100 would double-count the investment.

Basic reorganization produces 90 and preserves the proportions of claims. Approval requires two favorable votes. Participants cannot bargain over an alternative plan or transfer payments between creditors. These restrictions keep the relationship between distribution and approval rules visible. The activity concerns a collective procedure after investment; it does not reproduce a lending market or an earlier entrepreneurial risk decision.

2.2 Four ways to allocate the same scarcity

Proportional distribution gives every creditor the same fraction of its claim. With estate 60 and total claims 120, each receives half: 30, 20, and 10. Adding recoveries to liquid balances produces final payments 70, 80, and 90. Equality concerns recovery rates, not amounts received or final wealth. Ask students which object an institution is attempting to equalize.

Equal awards distribute the estate by equalizing amounts received without exceeding anyone's claim. With 60 available, each creditor receives 20. No one receives more than they are owed and the entire estate is used. Final payments are 60, 80, and 100. The smallest creditor recovers its entire claim; the largest recovers one third. Equality in amounts can therefore imply inequality in recovery rates.

Equal losses distribute the shortfall by equalizing losses, subject to no one losing more than their claim. The total shortfall is 60, and each creditor loses 20. Recoveries are 40, 20, and zero, producing final balances of 80 for everyone. This particular equality depends on identical reference endowments. Equalizing claim losses would not generally equalize final wealth when starting

resources differ.

Strict priority pays creditor 1 first, then creditor 2, then creditor 3. With estate 60, the first recovers everything and the others nothing. Final balances are 100, 60, and 80. Priority can be clear and predictable without producing equal recovery rates. These positions are not asserted to represent actual legal categories: priority is explicitly assigned to compare incentives under a payment hierarchy.

Theoretical foundation

A distribution rule maps claims and an estate into recoveries. Nobody may receive more than their claim, and total distribution cannot exceed available resources. Plan approval is a separate problem: each proposed recovery must be compared with the alternative that would apply if the plan failed.

2.3 Reorganization and the value of the alternative

With 90 available and proportional distribution, reorganization pays 45, 30, and 15. Final balances are 85, 90, and 95. Relative to proportional liquidation, everyone gains: increases are 15, 10, and 5. A person concerned only with personal payment favors the plan when their vote can affect the outcome. No altruism is required because each receives more than under liquidation.

Relative to equal awards, the plan no longer benefits everyone. The smallest creditor compares 15 with 20 and prefers liquidation; the others compare 45 with 20 and 30 with 20 and favor reorganization. A two-person majority can approve a plan that harms one position. An aggregate gain of 30 is not proof of a Pareto improvement. That claim would require nobody to become worse off and someone to become better off.

Relative to strict priority, the senior creditor compares 45 with 60 and prefers liquidation. The others prefer recoveries of 30 and 15 to zero. A headcount majority can approve reorganization, while unanimity would give the senior creditor a veto. Do not label this disagreement a coordination failure before inspecting interests. Participants may understand the plan perfectly and want different outcomes.

When a vote is not pivotal, several actions can be equivalent for payment. If the other two already approve under majority rule, one creditor cannot change the outcome with its own vote. Unanimous support is consequently unnecessary for behavior to be consistent with monetary self-interest. An affirmative vote is an action inside an institution, not a perfect measure of a preference independent of expectations about others.

2.4 A complete example from votes to payments

Suppose liquidation is proportional and creditors 1 and 3 support reorganization. Two favorable votes approve the plan. The estate of 90 is distributed as 45, 30, and 15 even though creditor 2 opposed it. Final payments are 85, 90, and 95. Voting against a plan does not exclude anyone from distribution, and approval does not impose a penalty on a dissenter.

Final payments sum to 270. Reconstruct this by starting from total endowments of 300, subtracting invested claims of 120, and adding recovered assets of 90. The gap of 30 relative to initial endowments is unrecovered investment. Do not add the estate again: it is already included in recoveries. If the plan fails, the same identity uses recovery 60 and gives final total 240.

Institutions and variants of the proceeding

3.1 Equal awards and equal losses

These extensions change only the liquidation alternative; the reorganization plan remains proportional. Compare support for the same plan across rules and creditor positions. A small creditor may favor a distribution protecting its full recovery; a large creditor may prefer limiting its absolute loss. Disagreement does not establish that some participants care about fairness while others care only about money. Both motives can generate identical votes.

The study by Büyükboyacı, Gürdal, Arzu Kıbrıs, and Özgür Kıbrıs examines how bankruptcy rules affect investment. This adaptation uses its distribution principles but fixes claims before the proceeding. It can therefore illuminate recoveries and approval, not replicate a finding about endogenous investment. Ask what additional decision would be needed to study how claims are formed and why adding that stage would change the analysis.

3.2 Strict priority

Priority protects one position's entire claim in liquidation while the others bear the shortfall. Reorganization increases total assets but reduces recovery for the protected creditor. Examine its vote and the majority outcome together. High reorganization frequency can coexist with systematic opposition from the senior creditor.

Discussion should distinguish security of an individual entitlement from aggregate gains. The game allows no side payments, so beneficiaries cannot be presumed to compensate the harmed position. A proposed reform allowing transfers must specify who offers them, who accepts, and how commitments are enforced. Such transfers are a possible extension of the model, not an option available to participants in this implementation.

3.3 Unanimity

Approval requires all three votes. Under proportional liquidation and continuation value 90, everyone receives more from reorganization. Nevertheless, one rejection blocks the plan. This extension separates a common benefit from the institutional requirement to coordinate. Keep horizon and participant composition comparable when contrasting it with majority rule.

Do not implicitly combine unanimity and priority when the selected configuration changes only

the voting rule. The unanimity extension retains proportional liquidation. A priority-creditor veto is a theoretical counterfactual, not the automatic outcome of this configuration. Clarifying this distinction prevents discussion from attributing an unimplemented compound treatment to the program.

3.4 Voting by claim value

Approval requires at least two thirds of total claims. With claims totaling 120, the threshold is 80. Creditors 1 and 2 contribute 100 and approve; creditors 1 and 3 contribute 80 and also approve; creditors 2 and 3 contribute only 60 and fail. Two favorable votes therefore do not guarantee approval. The creditor holding 60 cannot approve alone either.

Compare the number of votes with the positions casting them. The report displays favorable votes and approval; the export permits reconstruction of weighted support. A case with two favorable votes but rejection is not an error when those votes come from creditors 2 and 3. Ask students to identify minimum winning coalitions and explain the conception of representation embedded in weighting by financial exposure.

3.5 No enforcement stay

Before voting, any creditor can request individual enforcement. A single request forces liquidation for the entire group under the proportional rule. Requesting enforcement does not improve priority or provide an additional estate share. The extension represents the power to interrupt collective proceedings, not a race in which the first creditor receives more.

Under the basic values, reorganization gives every creditor more, so forcing liquidation has no direct monetary advantage. If enforcement occurs, investigate understanding, expectations, and rejection of the procedure before attributing opportunism. This comparison illustrates what a stay protects and the limits of the implemented mechanism. Modeling a race for assets would require a further priority or estate-depletion rule.

3.6 Reorganization costs

Reorganization consumes 20 of its 90 ECU and distributes 70. Integer proportional allocation produces 35, 23, and 12. Ideal fractional amounts are 35, 23.33, and 11.67; the remaining unit goes to the largest decimal remainder. Final payments are 75, 83, and 92. Liquidation still pays 30, 20, and 10, so the plan continues to benefit everyone under these parameters.

Cost reduces the aggregate gain from reorganizing from 30 to 10. Distinguish gross estate, consumed cost, and net recovery when reading the report. Do not subtract 20 from every creditor: it is consumed once before distribution. A sensitivity exercise can increase cost until net continuation equals liquidation, while recognizing that a modified configuration must provide instructions consistent with its new parameters.

3.7 Uncertain continuation value

After approval, realized continuation value is either 60 or 120 with equal probability. Expected value is 90, matching the basic plan, but payments are uncertain. The low state pays 30, 20, and

10; the high state pays 60, 40, and 20. Expected recoveries remain 45, 30, and 15. Uncertainty resolves after voting, so nobody knows realized value when choosing.

Lower approval may be compatible with misunderstanding probabilities, but risk aversion alone is insufficient here. The low state matches liquidation and the high state benefits everyone. Reorganization therefore weakly dominates liquidation for preferences increasing in personal payoff under the published parameters. Use this to distinguish a risky prospect from a prospect that can actually make someone worse off than the available alternative. Not every uncertain payment creates a trade-off requiring a risk premium.

Evidence and interpretation exercises

4.1 Literature and the adaptation's scope

An experimental study of the investment implications of bankruptcy laws, by Büyükboyacı, Gürdal, Arzu Kıbrıs, and Özgür Kıbrıs, appeared in *Journal of Economic Behavior and Organization*, volume 158, pages 607–629, in 2019. Its experimental comparison relates allocation rules to investment decisions. The principle used here is that changing loss distribution can alter incentives before final outcomes occur.

Investment and claims are fixed in this activity. Behavior concerns procedure: enforcement, voting, and approval. Unanimity, weighted voting, stays, and procedural-cost comparisons are original teaching adaptations of collective insolvency. Their predictions are derived from the stated model, not from a claimed replication of that experiment. Preserve this distinction whenever presenting classroom results as evidence.

4.2 What to observe in the report

Approved reorganization is binary; its mean is the share of completed proceedings approving the plan. Favorable votes range from zero to three. Total recovery adds creditor receipts, while unrecovered claims subtract that sum from 120 under basic parameters. Several creditors can request enforcement even though one request suffices to force liquidation.

Role payments reveal distributional consequences concealed by the group average. Compare recoveries first, then final balances. Positions receiving the same amount can end with different wealth because their invested claims differ. Evolution across rounds shows adaptation to procedure, not learning about the solvency of one persistent firm: every case resets balances, claims, and the estate.

4.3 Coalition exercise

Under weighted voting, creditors 2 and 3 support the plan while creditor 1 opposes it. The correct outcome is liquidation: 40 plus 20 does not reach 80. If creditor 1 switches to support and creditor 2 switches to opposition, support becomes 60 plus 20, exactly meeting the threshold. Ask why the number supporting remains two while the outcome changes.

This compares equal voting rights with claim-based representation without declaring either universally superior. A reasoned answer identifies what is being represented and the costs of each alternative. Approval that maximizes total assets does not by itself resolve how to protect a

harmed minority or define rights acquired before insolvency.

4.4 Accounting exercise with costs

A plan with cost 20 is approved. Gross assets equal 90, consumed cost is 20, and total recovery is 70. Unrecovered claims are 50. Final payments total 250 because 300 minus 120 plus 70 equals 250. Adding consumed cost 20 gives 270, the total payment that reorganization would have produced without that cost.

The equality does not mean consuming resources is socially irrelevant. It is an accounting identity locating resources. Evaluation requires asking whether cost generated a benefit outside the model or was necessary to obtain continuation value. The activity fixes that cost; participants cannot choose a cheaper reorganization technology. Recognizing what cannot be chosen is part of describing the institution accurately.

4.5 Distribution and incentives exercise

Compare equal-awards liquidation with proportional reorganization. Creditor 3 loses 5 in recovery by approving, while the others gain 25 and 10. The aggregate gain is 30. A transfer of 5 to the third creditor could remove its loss if transfers were permitted and enforceable, but the program does not offer that option. A correct answer describes the theoretical possibility and acknowledges the design restriction.

For closure, request a procedural recommendation with an explicit criterion. A student may prioritize total assets, priority rights, small claims, or reduced blocking costs. They should provide an example where that criterion conflicts with another. Learning consists in identifying the tension and calculating consequences, not turning a classroom voting outcome into a general legal recommendation.

4.6 Advanced exercise: separate amounts, rates, and wealth

Under equal awards, all three recover 20. Recovery rates are one third, one half, and one. Final balances are 60, 80, and 100. Under equal losses, recoveries are 40, 20, and zero; recovery rates are two thirds, one half, and zero; final balances are all 80. Ask students to rank inequality separately for receipts, rates, and final balances. The ranking changes because these are different objects, not because the accounting is inconsistent.

A claim that one rule is more equal must specify the relevant variable and population. Equal awards look equal in receipts but not in recovery rates. Equal losses equalize final wealth only because reference endowments happen to match. Strict priority protects an entitlement while concentrating the shortfall on other creditors. These comparisons make a useful bridge from descriptive measurement to normative argument: the statistic cannot choose the ethically relevant object on its own.

4.7 Advanced exercise: preserve the investment boundary

Imagine allowing creditors to choose their claims before the proceeding. Priority would then affect not only votes but willingness to lend, potentially changing both total investment and estate value. The current game deliberately holds those margins fixed. An observed improvement in recovery

under one rule cannot establish that the same rule would increase lending or improve long-run welfare in the expanded environment.

Ask the class to design the missing first stage. They must specify what a creditor gives up when lending, the debtor's technology, uncertainty, and the mapping from investment to available assets. They should also explain whether allocation rules are announced before investment. This exercise builds directly on the published investment literature while avoiding an unsupported claim that a fixed-claims classroom game has already tested it.

4.8 Reference operating rules

The following record collects the effective basic-condition instructions. Use it to check that demonstration accounts match the worked examples. The preceding extensions explain condition-specific changes.

Each creditor starts from 100 ECU and an already invested claim of [60, 40, 20] for positions 1, 2 and 3. ECU means Experimental Currency Units. Payoff is initial balance minus claim plus recovery; claims are not extra money.

Liquidation has 60 ECU and pays [30, 20, 10].

Reorganization has 90 ECU, consumes 0 ECU and proposes [45, 30, 15].

Approval requires: at least two of three creditors must approve.

Without a stay, any individual enforcement request forces collective liquidation under the same distribution rule. In other conditions individual enforcement is unavailable.

Under uncertain value, an approved reorganization obtains 60 or 120 ECU with equal probability. Realized distributions are capped by claims and any surplus remains in an external account. Other conditions use the fixed value.

Decisions are recorded before votes are disclosed. Each round is an independent proceeding; balances and claims renew.



Your role: **Creditor 1** · Case 1 / 1

Recovery and collective decision

Your outstanding claim is 60 ECU. Your balance before recovery is 40 ECU.

Liquidation: [30, 20, 10] ECU for creditors 1, 2 and 3.

Reorganization plan: [45, 30, 15] ECU; subject to the announced uncertainty, where applicable.

Vote on the reorganization plan

Continue

Figure 4.1: Decision for Creditor 1. Check the information and options available to this position.



Your role: **Creditor 2** · Case 1 / 1

Recovery and collective decision

Your outstanding claim is 40 ECU. Your balance before recovery is 60 ECU.

Liquidation: [30, 20, 10] ECU for creditors 1, 2 and 3.

Reorganization plan: [45, 30, 15] ECU; subject to the announced uncertainty, where applicable.

Vote on the reorganization plan

Continue

Figure 4.2: Decision for Creditor 2. Check the information and options available to this position.




Your role: **Creditor 3** · Case 1 / 1

Recovery and collective decision

Your outstanding claim is 20 ECU. Your balance before recovery is 80 ECU.

Liquidation: [30, 20, 10] ECU for creditors 1, 2 and 3.

Reorganization plan: [45, 30, 15] ECU; subject to the announced uncertainty, where applicable.

Vote on the reorganization plan

Select an option

Continue

Figure 4.3: Decision for Creditor 3. Check the information and options available to this position.




Your role: **Creditor 1** · Case 1 / 1

Case outcome

Your payment for this case: 85 ECU

Payments by role

Creditor 1	85 ECU
Creditor 2	90 ECU
Creditor 3	95 ECU

Case outcome

Approved reorganization

1

Figure 4.4: Case result: reconstruct the payoff before moving to the next file. (1/2)

Affirmative votes	3
Total recovery	90
Unrecovered claims	30
Individual enforcement requests	0
Accounts and components	
Available estate	90 ECU
Procedure cost	0 ECU
External residual	0 ECU
Total claims	120 ECU
Continue	

Figure 4.5: Case result: reconstruct the payoff before moving to the next file. (2/2)

Reading outcomes and designing discussion

5.1 Begin with the unit and denominator

Open the report for the session that was actually used. Before revealing results, check completed cases, the possible total, and pending cases. The report observation is one case of the experimental unit, not every individual row in the participant file. When several people share a group outcome, recording that outcome for each member does not create independent realizations. This distinction matters for percentages, graphs, and any subsequent analysis.

The report starts hidden. Reveal aggregates after the decisions you intend to compare are complete, and hide them again when reviewing administrative information. Hiding controls the instructor's projection; it does not replace private access to the panel. First ask for a literal description of what happened: number of units, frequency of an outcome, and dispersion. Introduce the economic explanation afterward. This order discourages students from selecting only observations that fit an announced prediction.

Means summarize outcomes but do not describe the entire distribution. Two groups can have the same average payoff and very different inequality. A histogram reveals concentrations, extremes, or absence of variation. Each bar reports the count and share of completed cases taking that value. If everyone chose the same option, the distribution is concentrated; the chart is not broken. With few cases, large differences between bars can arise from chance or one decision.

Role tables show the mean, median, and number of completed payments. The median is the middle ordered payoff; the mean is their sum divided by the number of observations. A large difference between the two is a reason to examine extremes before describing a typical participant. Colors identify positions in the activity, not types of people. Do not use a color or label to attribute moral dispositions to particular students.

Evolution by case shows changes during the session. A slope does not establish learning: it can also reflect different realizations, adaptation to counterparts, fatigue, or presentation order. Repeated observations with fixed groups share people and history. Under rematching, people continue accumulating experience even when group membership changes. To compare formats, retain period and configuration, and avoid treating every row as an independent observation.

Feedback script

First describe a number and its denominator. Then reconstruct a rule that could produce it. Finally propose an alternative explanation and a comparison that could distinguish the two. A convincing explanation connects information, choice, and outcome; naming a bias is insufficient.

5.2 Move from observation to a defensible claim

A reference prediction states what particular assumptions would produce. It may require knowledge of the rules, accurate calculation, exclusive concern for personal earnings, and a specified attitude toward risk. If behavior differs, do not immediately conclude that students are irrational. First check whether the prediction uses the actual parameters, whether decisions depended on private information, and whether several responses were compatible with the same criterion.

Separate three levels of claim. An observation summarizes the session: for example, a certain share selected an option. A compatible mechanism explains how incentives or information could produce that choice. A causal conclusion needs a comparison that attributes the change to a rule while excluding relevant alternatives. Classroom sessions often support the first two levels well. The third requires planning assignment, sample size, and incident handling before seeing outcomes.

Do not exclude a unit because it contradicts the theory. Record technical problems or documented departures from instructions and apply criteria established beforehand. Keep a table of excluded cases and reasons. An unexpected decision remains a valid observation when the person understood the task and acted within available options. Comprehension questions improve the activity but do not exhaustively measure understanding, attention, or effort.

5.3 A sixty-minute lesson

Use the first eight minutes to introduce the institutional question without announcing a desirable answer. Allow ten minutes for reading, questions, and comprehension. Reserve fifteen minutes for the basic activity; actual duration depends on its turns and the class's experience. Spend ten minutes reconstructing an outcome with the accounting rules, twelve contrasting an extension, and five on an individual closing response. If the sequence takes longer, reduce the number of conditions rather than the time needed to understand them.

In a ninety-minute lesson, you can run two comparable sessions and reserve twenty minutes for joint discussion. If the same people complete both, alternate condition order across groups when feasible. If that is impossible, explicitly state that the second condition occurs after learning the first. Do not call the difference a pure institutional effect. Repetition offers an opportunity to teach why order matters in an experiment.

A short assessment can request three products: a correct calculation, a prediction with assumptions, and a limitation of inference. Award credit for identifying a condition under which the prediction would change. Do not grade earnings or agreement with the instructor's opinion. For advanced work, request a small alternative design that changes one rule and specifies an outcome capable of distinguishing two explanations.

5.4 A workshop for reconstructing the export

Begin with a verifiable task: reconstruct one completed case from decisions without looking at the computed payment. In the custom export, locate session, participant, round, and group. Completion indicates whether an outcome exists; phase identifies the last transition reached. Choices are stored in fields numbered by stage. Their meaning depends on role and condition, so the same technical field does not necessarily represent the same question for everyone.

The state field retains a structured record of information, aggregate choices, payments, and accounts. These components trace the program's causal sequence: initial situation, action, institutional rule, and outcome. For spreadsheet analysis, convert components into columns while retaining the untouched original. Avoid text replacements that remove commas or minus signs without distinguishing values from structure. Conversion must preserve numbers, missing values, and position-specific payment lists.

Select a second unit with a different outcome and repeat the reconstruction. The contrast helps locate whether differences arise from choices, a random draw, or an institutional rule. In a programming exercise, a useful check independently verifies a resource identity. A test copying the same payment formula under a different name can reproduce the same mistake and is not an independent accounting check.

5.5 What synthetic data contribute

The analysis folder includes synthetic cases generated under each condition's rules. They support practice importing records, making tables, and verifying accounts. Preserve the synthetic-data label in every derived chart or file. Simulated choices do not represent a student population and are not calibrated to reproduce an empirical frequency. A condition generating more agreements or votes in this file is not an experimentally validated behavioral prediction.

Use synthetic data to examine operation: possible values, balanced accounts, fields changing across conditions, and observation structure. Use classroom data to describe behavior actually observed, subject to assignment and sample-size limitations. Keeping these sources separate prevents a software example from accidentally becoming evidence about human preferences. Students should be able to explain which parts of a synthetic outcome were generated by choices and which follow mechanically from the institution.

5.6 Plan a comparison before seeing results

Write a hypothesis identifying the reference condition, extension, primary outcome, and expected direction under explicit assumptions. Add a secondary outcome capable of revealing an intervention's cost. An institution can improve the metric it rewards while worsening one it ignores. Specifying both in advance makes discussion less dependent on whichever number looked most striking afterward.

Also record assignment. If one classroom group receives one condition and another group receives another, experience or understanding can vary alongside treatment. With random assignment, preserve the unit assigned and do not artificially multiply sample size through rounds or group members. With a before-and-after design using the same people, recognize learning and order as alternative explanations. These choices matter even when teaching is the main objective.

5.7 A short analysis deliverable

Request one page containing a question, a small table, a distribution plot, and an interpretation paragraph. The table should state the unit and number of complete cases; plots should preserve a common scale across conditions. Separate observed outcomes, a compatible mechanism, and a limitation in the paragraph. An excellent answer can find little difference and explain why the design or sample does not establish equivalence.

Keep a minimal implementation record containing configuration, language, horizon, participant count, and incidents. A screenshot of a plot without these rules is insufficient for reproduction. There is no need to present infrastructure or commands during feedback. The purpose is for students to explain how decisions become outcomes and which comparison supports each claim. Encourage them to report one observation that would weaken their preferred explanation, making the analysis open to disagreement rather than a search for confirmation.

5.8 A table separating value from distribution

Build a position-specific recovery table for proportional liquidation, equal awards, equal losses, and priority, holding the estate at 60. Rows must total the same amount even though columns differ. This distinguishes a distributional change from a productive change. A table allocating 70 without changing the estate contains an accounting error or mixes liquidation with reorganization.

Add recovery relative to claims. For creditor 1, receiving 30 means recovering half of 60; for creditor 3, receiving 20 means recovering everything. Comparing amounts does not replace comparing rates. Then add final balances. Equal losses produce equal final balances under this parameterization, but interpretation requires remembering that prior endowments were identical. The three presentations answer different questions and can rank distributions differently.

5.9 Interpret support without inferring a moral preference

For each position, calculate plan recovery minus liquidation recovery. Classify a vote according to whether it supports or rejects a monetarily superior, inferior, or equivalent alternative. This is a descriptive classification dependent on the effective rule. Opposition to an individual improvement can reflect expected nonpivotality, distributional concern, misunderstanding, or rejection of procedure. The data do not automatically select one explanation.

Ask students to formulate two hypotheses predicting the same vote and a comparison distinguishing them. Someone might favor equal awards because it protects small claims or because they personally occupy that position. Changing roles across sessions could examine self-interest, but would also introduce experience and order. Delivered configurations preserve roles, so rotation is a research proposal rather than an implemented feature. Describing that boundary is part of a correct design critique.

5.10 Uncertain reorganization and ex ante calculation

Separate voting from observing value. Under uncertainty, voters know the distribution over 60 and 120, not the realization. A reorganization ending at 60 does not establish that approval was mistaken. Every recovery is at least as large as under proportional liquidation and can be larger. This dominance uses the published parameters; it need not survive a lower continuation state or additional costs.

When comparing realized payments, report how many reorganizations received each state. A small class can draw many low values by chance and display recovery below the deterministic reference even though announced expectations match. Do not replace draws to move the result closer to theory. The difference between expectation and realization is itself part of the lesson and should be visible in any interpretation of the classroom average.

5.11 A final design question

A student claims that the rule generating the highest approval rate is always best. Request a priority-based counterexample. A majority can approve a plan increasing total assets while harming a protected creditor. Another criterion might value protection of that position despite lower approval. Reorganization frequency should therefore be accompanied by recovery distribution and an explicit normative objective.

Distinguish identity, prediction, and recommendation in the final answer. Total recovery of 90 follows from the costless plan's accounting. Supporting the plan is a prediction under specified interests and expectations. Recommending that the plan be imposed requires a judgment about rights and welfare. A correct calculation cannot substitute for a missing normative argument, and a voting result cannot independently settle which rights should have been assigned before the proceeding.

For a practical extension, ask students to write a two-column memorandum. One column states facts established by the implemented game; the other states additional evidence needed for a real reform, such as effects on lending, investment, enforcement costs, or creditor composition. This keeps the activity connected to substantive legal questions while preventing its deliberately fixed-claims environment from carrying conclusions it cannot support.

Instructor report · Insolvency, Priority, and Creditor Distribution

Proportional distribution · Stable participants / fixed order

Completed cases: **0 / 2** · Pending: 2

Results remain hidden until the instructor chooses to display them.

[Reveal results](#)

Figure 5.1: Monitoring view: unrevealed report and case count.

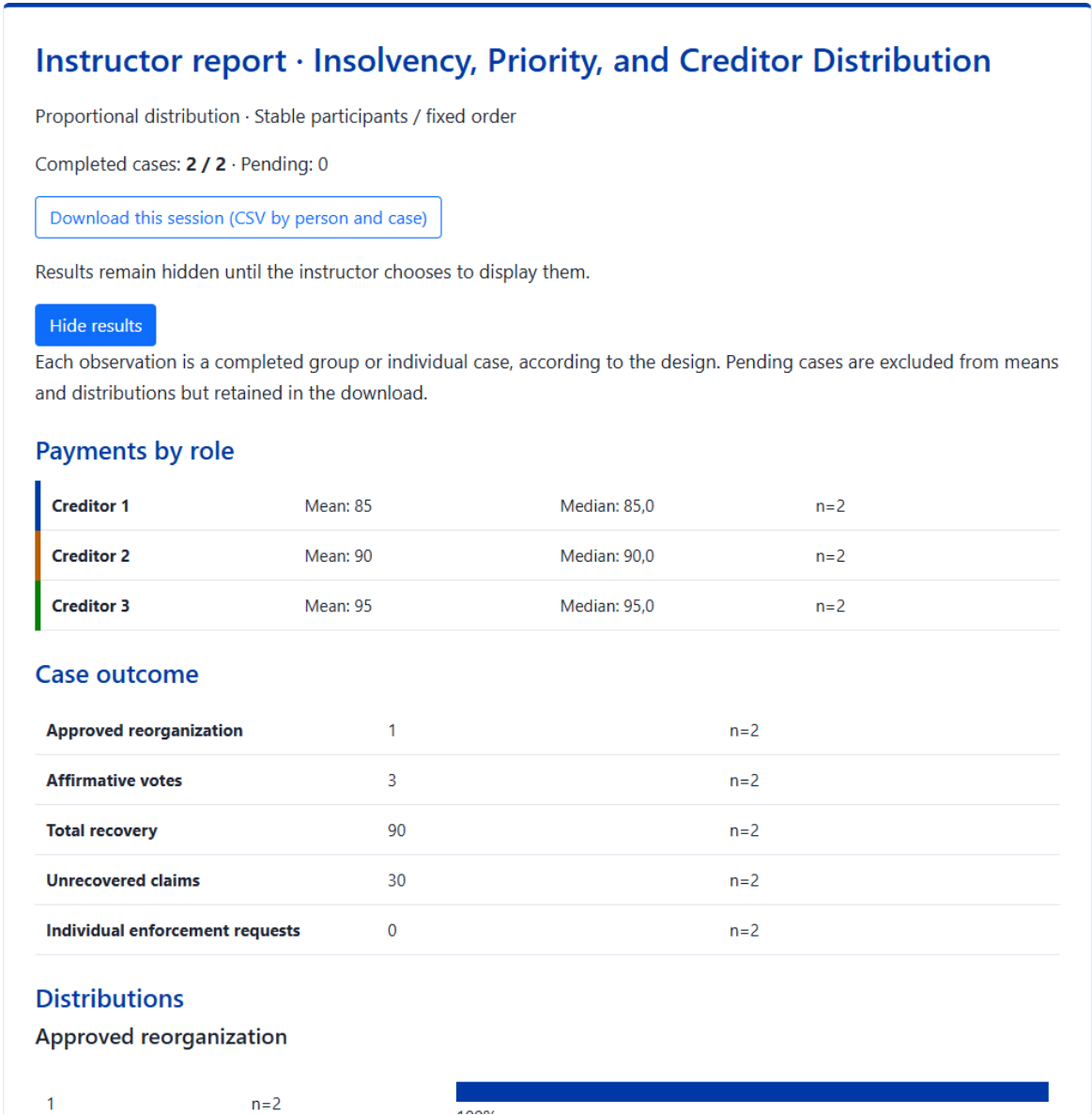


Figure 5.2: Monitoring view: revealed results; read every figure with its denominator.

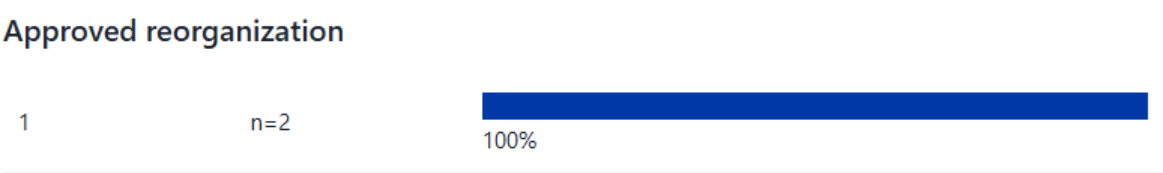


Figure 5.3: Monitoring view: the distribution shows concentration and dispersion.

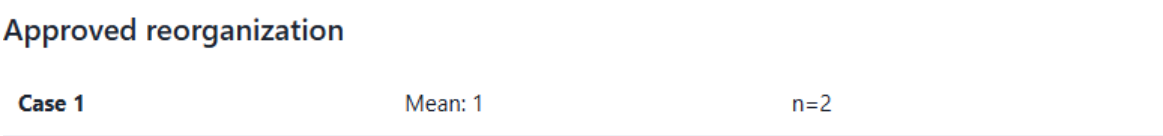
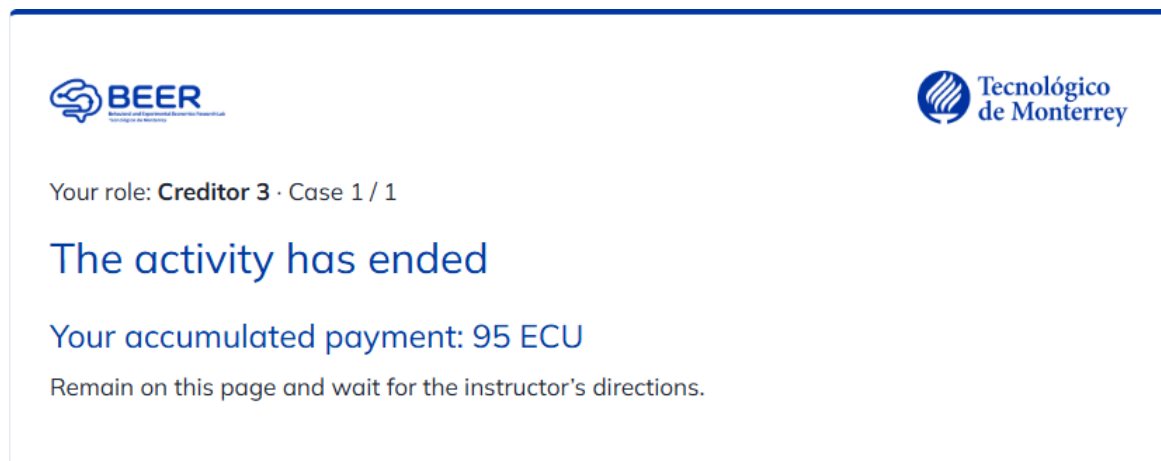


Figure 5.4: Monitoring view: evolution separates cases and available observations.



The screenshot displays the BEER Lab interface. At the top left is the BEER logo, and at the top right is the logo of Tecnológico de Monterrey. Below the logos, the text reads: "Your role: **Creditor 3** · Case 1 / 1". The main heading is "The activity has ended" in a large blue font. Below this, it states "Your accumulated payment: 95 ECU" in blue. At the bottom, a instruction says "Remain on this page and wait for the instructor's directions."

Figure 5.5: Monitoring view: closure confirms there are no further decisions for this person.

Data, retention, and incident recovery

6.1 Download the right session

From the session panel, open Data and use its own download link. The general oTree file is wide: one participant row contains columns for different rounds. This family's custom export is long and retains participant, round, group, role, language, edition, treatment, matching, phase, decisions, completion, payoff, and case state. Pending cases are retained. A blank field may indicate a decision that was unnecessary or has not yet been made; it must not automatically become zero.

Save the original file unchanged with the configuration and date. Use a copy to construct tables. Identify the session by its code and check that the last active round is present. Unused technical rounds do not belong to the experimental horizon. In a one-case version, the report must summarize that case even if the administrator opens the last technical period. Completed and pending counts provide a cross-check between the download and the visible session.

The private report also includes Download this session, which directly delivers the person-by-case CSV for the open session. This option requires no API-key configuration. It preserves all active rounds, including those still pending. The general Data download and this long download represent the same session in different layouts; their organization differs, not the active horizon that must be retained.

Collective outcomes repeat in members' state records. To construct a unit-level file, retain one observation per session, group, and round, or per participant and round for the individual activity. For payments by role, retain individual rows. Do not mix these levels in one average without specifying its weights. The analysis folder includes clearly marked synthetic data for practicing calculations. They are not evidence collected from students.

6.2 Protect interpretation and privacy

Do not collect names, student identification numbers, or demographic variables for this activity. Session and participant identifiers support operational tracking but should not be projected or published with results. Restrict access to the original file. When sharing a classroom table, remove individual codes and use aggregates that do not make a particular decision easy to recognize. A file's fictional status does not describe the real conduct, merit, or responsibility of the person assigned to it.

Classroom data do not automatically constitute a research sample. Before using them in a study, separately define the protocol, consent, data management, and relevant authorizations. You can discuss limitations pedagogically without turning every class into a research procedure. This guide teaches how to read outcomes, recognize observational units, and formulate hypotheses. It does

not promise representative estimates for actual judges, creditors, or data users.

6.3 Recover a session without changing its rules

If someone is waiting, examine the other positions in that unit. Locate the pending slot and check whether its participant is reading, has not submitted, or lost connectivity. Do not decide for them. If two people opened the same individual link, stop interpreting that unit and record the incident. If faithful recovery is impossible, retain partial data and create a new session for a later demonstration.

Correct a language error before choices begin. Do not informally translate for one participant while everyone else receives different instructions. If an incorrect configuration already produced decisions, identify those data separately. Restarting a server while preserving its database does not erase a session. Deleting or recreating the database invalidates previous individual links, requires a new session, and must never be used merely to refresh the interface.

Checkpoint

At closure, confirm that all planned cases are either complete or accompanied by a recorded incident, that the download belongs to the selected session, and that pending outcomes have not become zeros. Save the configuration alongside the data. Reproducibility begins with preserving the rules actually used.

Attention

Reveal the report after the decisions you wish to compare. Showing averages from other groups during play introduces social information. When that information is not part of the treatment, it changes the activity and must be recorded as an implementation incident.

6.4 Available rooms and conditions

Stable room: https://insolvency.beer-lab.org/room/insolvencia_es

Stable room: https://insolvency.beer-lab.org/room/insolvency_en

Stable room: https://insolvency.beer-lab.org/room/insolvencia_extendida

Stable room: https://insolvency.beer-lab.org/room/insolvency_extended

Proportional distribution	Liquidation preserves each claim's proportional share. Approval requires two votes.
Equal awards	Liquidation equalizes recoveries subject to each claim's cap.
Equal losses	Liquidation equalizes losses subject to exhausting each claim.
Strict priority	In liquidation creditor 1 is paid first, then creditor 2, then creditor 3.
Unanimity for reorganization	All three creditors must approve reorganization.
Voting by claim value	Reorganization requires at least two thirds of total claim value.

Without an enforcement stay	Any creditor may force liquidation before voting. Re-requesting enforcement does not change payment priority.
Reorganization cost	Reorganization consumes 20 ECU before distributing available value.
Uncertain continuation value	After voting, reorganization yields 60 or 120 ECU with equal probability.

6.5 References and provenance

Büyükboyacı, Mürüvvet; Mehmet Y. Gürdal; Arzu Kıbrıs; Özgür Kıbrıs (2019). An experimental study of the investment implications of bankruptcy laws. *Journal of Economic Behavior and Organization*, 158, 607–629. DOI: 10.1016/j.jebo.2019.01.001.

<https://doi.org/10.1016/j.jebo.2019.01.001>

JEL classification verified with the American Economic Association: <https://www.aeaweb.org/econlit/jelCodes.php?view=jel>

Original BEER Lab teaching design. Additional predictions follow from the rules documented here. Sources and navigation checked in October 2026.