

Journal of Language Pedagogy and
Innovative Applied Linguistics
May 2026, Volume 4, No. 1, pp: 48-52
ISSN: 2995-6854
© JLPAL. (jainkwellpublishing.com)
All rights reserved.



Teaching Opportunity Cost and Incentives through Internal Audit Cases in Undergraduate Economics

Sukhrob Akhmedov *

*Head of the Internal Audit and Financial Control Service, Samarkand State Institute of Foreign Languages,
Samarkand, Uzbekistan*

Abstract

Undergraduate economics courses often require students to explain resource allocation while giving them limited practice in evaluating the documents and competing claims through which allocation decisions are made. This conceptual article develops a case teaching model that converts internal audit situations into structured opportunities to learn opportunity cost, marginal analysis, information asymmetry, and incentives. A purposive synthesis of economic education, instructional alignment, problem based learning, and professional audit standards informs the design. The proposed model requires each case to connect a documented observation to an economic mechanism, an explicit alternative, and a defensible recommendation. Its principal contribution is a translation procedure that prevents audit cases from becoming exercises in procedural compliance alone.

Key Words: *economics education; case teaching; internal audit; opportunity cost; incentives; economic reasoning; higher education.*

Paper/Article Info

Reference to this paper should be made as follows:

Akhmedov, S. (2026). Teaching Opportunity Cost and Incentives through Internal Audit Cases in Undergraduate Economics.

Journal of Language Pedagogy and Innovative Applied Linguistics, 4(1), 48-52.

<https://doi.org/10.1997/ffv61q45>

* Corresponding Author

DOI: <https://doi.org/10.1997/ffv61q45>

Introduction

An economics student may correctly define opportunity cost yet recommend the least expensive purchase without considering maintenance, reliability, or the use of resources elsewhere. The difficulty concerns the movement from a definition to a decision. Internal audit situations offer potentially useful teaching material because they contain constrained budgets, incomplete information, institutional objectives, and conflicting interpretations of performance. Their educational value depends on the questions students are asked to answer. Identifying a missing signature is an audit observation; explaining how an approval arrangement changes incentives is an economic analysis.

The present article addresses the following question: how can internal audit cases be designed to develop undergraduate economic reasoning while preserving a clear boundary between teaching economics and training auditors? It proposes a concept led case model in which professional evidence supplies the setting and economics supplies the explanatory framework. The intended setting is an undergraduate course in introductory microeconomics, public sector economics, or institutional economics. A short introduction to financial documents is sufficient; professional audit certification is not assumed.

Research on undergraduate economics considers teaching choices alongside student characteristics and the measurement of learning (Allgood et al., 2015). More recent discussion connects active learning and assessment design with participation and inclusion in economics classrooms (Barrera et al., 2024). These perspectives support careful instructional design but do not establish the effectiveness of the specific intervention proposed here. The contribution of this article is a reusable procedure for designing and evaluating cases, rather than a claim that professional authenticity automatically improves achievement.

Theoretical foundations

Constructive alignment provides the organizing principle. Intended performances, classroom activities, and assessment should address the same intellectual demand (Biggs, 1996). If the intended performance is to compare feasible uses of scarce resources, a task that rewards recalling a purchasing rule is poorly aligned. In the proposed model, every case begins with a specified economic performance, such as identifying the relevant counterfactual or explaining a principal agent relationship. The audit narrative is selected

only after that performance has been identified.

Problem based learning offers a second foundation. Hmelo-Silver (2004) describes learning organized around complex problems and supported inquiry. This article adapts that logic to bounded cases with sufficient evidence for beginning economics students. Students investigate an unresolved decision, identify missing information, and defend a response. Guidance remains necessary: learners should not have to discover an unfamiliar economic concept and decipher a complex administrative file simultaneously.

The distinction between productive difficulty and avoidable overload is consequential. Sweller (1988) identifies circumstances in which demanding problem solving can compete with learning. In economics case teaching, document complexity can occupy attention without advancing conceptual understanding. Accordingly, the model introduces one main mechanism before adding competing mechanisms. A first case might isolate opportunity cost; a later case might combine opportunity cost with uncertainty and asymmetric information.

Professional audit standards provide a disciplined view of evidence and communication, not a theory of learning. The Institute of Internal Auditors (2024) sets expectations for objective communication and the development of findings and recommendations. These expectations inform the structure of classroom evidence briefs. Their pedagogical application is an inference made here and is not a claim that the standards prescribe an economics curriculum.

Method of conceptual development

The article uses a purposive conceptual synthesis and instructional design analysis. Sources were selected for four functions: defining an economics education problem, supplying an instructional mechanism, identifying assessment principles, and specifying features of professional audit reasoning. The selection includes an economics education survey, a recent economics pedagogy article, foundational instructional studies, and an authoritative professional standard. It is neither an exhaustive systematic review nor an empirical investigation.

The synthesis proceeds through three analytic operations. First, it separates professional actions from economic explanations. Checking an invoice is a professional action; analyzing the effect of an incentive contract is an explanation. Second, it maps each explanation to an observable student performance. Third, it tests the

consistency of that map against a worked case and an assessment matrix. Design coherence is assessed by whether the proposed task actually elicits the intended reasoning and whether the available evidence permits that reasoning.

The resulting framework is evaluated logically rather than statistically. No participants were recruited, no institutional files were analyzed, and no measured effects are presented. All case figures below are constructed for teaching. This methodological boundary matters because a plausible design and an effective intervention are different research claims.

Translating professional situations into economics cases

The translation procedure begins by selecting a decision with at least two feasible alternatives. A case about an already completed transaction can still qualify if students reconstruct the alternatives available at the decision date. The teacher then identifies an economic mechanism and removes documents that do not contribute to evaluating it. A short contract extract may be useful; an entire procurement file is rarely necessary for an introductory lesson.

The second step is to create an evidence boundary. The case states which observations are established, which quantities are assumptions, and which explanations remain uncertain. Students should learn that a budget variance is an observation whose causes require investigation. It does not by itself demonstrate inefficiency, misconduct, or poor effort. Distinguishing evidence from interpretation is central to the proposed connection between audit practice and economics.

The third step introduces a counterfactual. Students must identify what would happen under an alternative allocation or rule, rather than evaluating the observed decision in isolation. The fourth step requires a mechanism statement: who changes behavior, in response to what incentive or information, and with what expected consequence? The final step asks for a recommendation with an explicit condition under which it should change.

Table 1 summarizes the mapping. The examples are proposed teaching designs, not a classification validated by a classroom study.

Economic concept	Case trigger	Required student performance	Evidence of understanding
Opportunity cost	Two projects compete for one budget	Identify the best forgone feasible option	Comparison includes the alternative use of funds

Economic concept	Case trigger	Required student performance	Evidence of understanding
Marginal analysis	Additional service or control is proposed	Compare additional benefit with additional cost	Total and incremental quantities are distinguished
Information asymmetry	Supplier knows more about quality	Explain how verification changes a decision	Mechanism connects information to expected outcomes
Principal agent incentives	Manager is rewarded for spending the allocation	Predict a behavioral response to the rule	Prediction specifies actor, incentive, and consequence
Externalities	A cheap purchase transfers costs to another unit	Identify costs outside the purchasing unit	Recommendation considers the relevant wider boundary

A worked procurement case

A fictional teaching center must provide the same defined level of printing service for one academic year. Supplier A charges 60 million UZS for equipment and 25 million UZS for maintenance. Supplier B charges 72 million UZS and 8 million UZS respectively. For this initial exercise, service quality, useful life over the evaluation period, residual value, timing, and downtime are assumed equal. The center has an 85 million UZS allocation, and any unspent amount can finance another approved activity.

The directly comparable one year totals are 85 million UZS for A and 80 million UZS for B. B therefore releases 5 million UZS for another use. Choosing A solely because its purchase price is lower confuses an observable component of expenditure with the relevant cost comparison. Students must state the simplifying assumptions before defending B. They must also identify the best available alternative use of the 5 million UZS, rather than treating unspent money as intrinsically beneficial.

A second document changes the problem. B's equipment has a 20 percent probability of a disruption producing an additional loss of 30 million UZS during the year; A is assumed to have no corresponding incremental disruption risk. The expected additional loss for B is 6 million UZS. Under a risk neutral decision rule and the stated assumptions, expected comparable cost becomes 86 million UZS for B against 85 million UZS for A. The preferred choice changes. These are illustrative

calculations, not estimates of actual supplier performance.

This extension makes the evidence requirement visible. A student may challenge whether the 20 percent probability is credible, whether the 30 million UZS already includes maintenance, or whether losses to other units have been omitted. Such challenges are analytically useful if they identify the direction in which the decision could change. A generic statement that more information is needed is insufficient. Students should identify a decision relevant uncertainty and, where possible, a threshold.

The break even disruption probability for B is 5 divided by 30, approximately 16.7 percent. Below that probability, B has the lower expected cost under the model; above it, A does. This calculation connects numerical work to judgment. It also prevents a false lesson that the lowest calculated expected cost settles every institutional decision: service continuity requirements or an unacceptable worst case loss could require a different decision rule.

Teaching sequence and assessment

A proposed 90 minute seminar begins with a ten minute individual prediction task. Students choose a supplier from the initial purchase prices and explain their criterion. The teacher uses responses diagnostically, then provides a fifteen minute worked comparison of relevant costs and the meaning of a counterfactual. Groups spend twenty minutes preparing an evidence brief using the complete initial data. Each brief identifies the decision, assumptions, alternatives, and recommendation.

The risk document is then introduced for a fifteen minute revision task. Groups must record exactly which assumption or quantity changed and whether their original recommendation survives. During a fifteen minute hearing, a second group challenges the probability estimate or the cost boundary. The final fifteen minutes are reserved for an individual transfer question using a different setting, such as choosing between maintenance schedules. The individual task distinguishes personal understanding from successful participation in group work.

Assessment uses four dimensions: conceptual selection, quantitative consistency, use of evidence, and conditional judgment. Each can receive a proposed score from zero to three. A score of zero indicates absent or fundamentally incorrect reasoning; one indicates a relevant but incomplete attempt; two indicates a correct explanation under stated assumptions; and three requires a correct explanation that also tests a consequential assumption. The score is a

classroom design choice and needs piloting before high stakes use.

For example, a quantitatively correct comparison can still receive a weak evidence score if it treats a conjecture about supplier quality as a verified fact. Conversely, a student who identifies an appropriate missing variable should receive credit for that reasoning even if a minor arithmetic slip occurs. Separating dimensions helps teachers explain the source of difficulty and select a suitable follow up task. Authentic assessment research provides a basis for considering the relationship between task, setting, and performance criteria, while the present rubric remains locally proposed (Gulikers et al., 2004).

Discussion and propositions for evaluation

The main design result is an explicit bridge between audit evidence and economic mechanisms. Without this bridge, cases risk becoming compliance quizzes, narratives about misconduct, or spreadsheet exercises. The bridge requires a sequence from observation to explanation and from explanation to a counterfactual decision. It also gives an economist with audit experience a bounded pedagogical role: professional knowledge helps construct credible decisions, while learning objectives determine which details are retained.

Recent evidence reinforces the need to distinguish outcomes. In a randomized comparison of conventional and CORE based introductory microeconomics in Uruguay, Araya et al. (2026) report no systematic differences in pass or dropout rates alongside differences in learning experience and study practices. That study does not evaluate audit cases. It illustrates why a teaching design should specify its intended outcome instead of assuming that greater relevance, participation, and examination achievement move together.

Three propositions follow. First, cases requiring an explicit counterfactual should elicit more evidence of opportunity cost reasoning than cases asking only for a preferred option. Second, releasing new evidence after an initial recommendation should make conditional reasoning observable. Third, individual transfer tasks should reveal differences that group products conceal. These are hypotheses about mechanisms and measurement, not findings established by this article.

A subsequent evaluation could compare concept led audit cases with conventional numerical exercises covering the same concepts and instructional time. A common baseline task, independently scored transfer task, and delayed assessment would address

prior knowledge, near transfer, and retention. Random assignment is preferable where feasible; otherwise, group differences and instructor effects require explicit treatment. Outcomes should include concept based reasoning and document interpretation separately. Sample size should follow a prospective power analysis rather than an arbitrary classroom target.

The approach has limits. Audit contexts may overrepresent organizational decisions and underrepresent markets, macroeconomic adjustment, or household behavior. They should occupy selected units within a balanced course. Professional terminology may also disadvantage novices. Brief glossaries, accessible formats, and rotating group responsibilities can reduce avoidable barriers without lowering the demand for reasoning. Actual confidential documents should be replaced by public or carefully constructed

materials, since realistic teaching does not require access to identifiable institutional transactions.

Conclusion

Internal audit cases can be converted into economics teaching materials when the instructional unit is an economic decision rather than an administrative irregularity. The proposed translation procedure connects observations, mechanisms, alternatives, and conditional recommendations. Its worked example demonstrates how opportunity cost and uncertainty can be taught within a short seminar. The framework supplies an implementable design and an evaluation agenda; its effects on learning remain to be tested. The strongest justification for its use is therefore curricular coherence and the opportunity to observe reasoning, rather than an unverified promise of improved achievement.

References

1. Allgood, S., Walstad, W. B., & Siegfried, J. J. (2015). Research on teaching economics to undergraduates. *Journal of Economic Literature*, 53(2), 285–325. <https://doi.org/10.1257/jel.53.2.285>
2. Araya, F., Blanchard, P., Cárdenas, J. C., Failache, E., & Perazzo, I. (2026). Another way of teaching microeconomics: Impact evaluation of the CORE project. *Economica*, 93(371), 992–1035. <https://doi.org/10.1111/ecca.70045>
3. Barrera, S., Sajadi, S., Holmes, M., & Jacobson, S. (2024). Valuing identity in the classroom: What economics can learn from science, technology, engineering, and mathematics education. *Journal of Economic Perspectives*, 38(3), 163–190. <https://doi.org/10.1257/jep.38.3.163>
4. Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education*, 32, 347–364. <https://doi.org/10.1007/BF00138871>
5. Gulikers, J. T. M., Bastiaens, T. J., & Kirschner, P. A. (2004). A five-dimensional framework for authentic assessment. *Educational Technology Research and Development*, 52(3), 67–86. <https://doi.org/10.1007/BF02504676>
6. Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review*, 16, 235–266. <https://doi.org/10.1023/B:EDPR.0000034022.16470.f3>
7. Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4
8. The Institute of Internal Auditors. (2024). Global Internal Audit Standards. <https://www.theiia.org/en/content/standards/complete-global-internal-audit-standards/>