The Combinatorial Assignment Problem: Approximate Competitive Equilibrium from Equal Incomes: scoped review

Igor Rivin · 24 November 2026 · AI-assisted source audit

A legal zero price defeats the offered global sharpness example. This does not refute the main existence theorem or the existential sharpness proposition.

Reviewed edition: Journal of Political Economy 119(6), 2011, pp. 1061–1103; published article.

This report publishes only reconciled findings with direct source and exact arithmetic checks. Other branches of the paper remain unaudited or unresolved. It makes no claim of priority or of an exhaustive search for corrections.

Checked findings

Definition 1(ii)(b) in the paper, physical p. 9, ignores excess supply of a zero-price good when forming the clearing-error vector. Appendix B, physical pp. 37–38, has four agents with top triples `abc, abd, acd, bcd`, and second choices `d,c,b,a`, respectively; each good has capacity 2.

Set prices to `(4/5,4/5,4/5,0)`. The triples cost `12/5,8/5,8/5,8/5` and the second choices cost `0,4/5,4/5,4/5`. For every budget vector in `[1,3/2)^4`, all agents demand their second choices, regardless of the lower preference tails. Demand is `(1,1,1,1)`, but the counted excess is `(-1,-1,-1,0)`, with squared norm 3 rather than the asserted minimum 4.

The local Hadamard rounding calculation near positive prices can be correct while this global lower-bound example fails. The main existence theorem uses an upper bound and does not depend on proving sharpness. Astra also identifies repairable proof-interface issues and proposes a new global sharpness proof using odd replication. The replication proof is substantial and remains separate pending a coordinator check; it is not adopted merely because an adjudicator labels the proposition repaired.

Evidence and limits

The panel used independent Sol 6.2 and Fable 5.2 assessments, followed by non-blind Astra 6.2 adjudication. The coordinator checked the reported witnesses against the source and replayed exact rational calculations. This is not proof-assistant verification or a full-paper certificate. General repair proposals remain candidates until separately checked.

5 assessments are recorded for this paper; 1 initial responses retain source-access flags. The focused response accounts for every supplied source. Recorded usage for these packets is USD 5.3162, within the collection's USD 100 ceiling. No additional inference was used to prepare this publication.

The neutral source inventory preserves the complete PDF and text/OCR index, including sections and bibliography. The dependency graph covers selected source-attributed inputs; unmarked or unconnected claims have not thereby been verified.

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