

## Ex ante fair division

**Abstract:** We revisit the trade-off between the liberal (Coasian) approach to fair division by decentralised person-to-person negotiations, apt to discover unforeseen compromises and promote cooperation, and the application of a deterministic, normatively appealing division rule completely eliminating unscripted outcomes.

At the ex ante stage where individual characteristics (preferences, efforts, demands, endowments, rights, etc..) are still private, our benevolent regulator stakes out the worst and best welfare a participant can achieve as a function only of their own characteristics: minimising the range from best to worst case limits the pitfalls of face to face bargaining. If the unsupervised agents fail to reach an agreement within the posted range, the regulator steps in to implement an outcome that does.

Discovering the full menu of worst and best cases welfare functions is a hard mathematical question, even in simple problems of resource allocations. We give full solutions for several iconic fair division problems with transferable utilities, including the allocation of indivisible goods or costly chores and the exploitation of a commons. The corresponding menus of multi-valued bargaining ranges contain many familiar single-valued rules but also suggest new ones.