The price of anarchy in basketball BRIAN SKINNER, University of Minnesota — Optimizing the performance of a basketball offense may be viewed as a network problem, wherein each play represents a "pathway" through which the ball and players may move from origin (the in-bounds pass) to goal (the basket). Effective field goal percentages from the resulting shot attempts can be used to characterize the efficiency of each pathway. Inspired by recent discussions of the "price of anarchy" in traffic networks, this paper makes a formal analogy between a basketball offense and a simplified traffic network. The analysis suggests that there may be a significant difference between taking the highest-percentage shot each time down the court and playing the most efficient possible game. There may also be an analogue of Braess's Paradox in basketball, such that removing a key player from a team can result in the improvement of the team's offensive efficiency.

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