1 Introduction

It's not unreasonable to think that in-game sporting performance can be affected partly by what takes place off the court. We are interested to see if teams exhibit a decline in performance the day following a game in a city with active nightlife; we call this a "hangover effect". Part of the question is determining a reasonable way to measure levels of nightlife, and correspondingly which cities are notorious for it; we colloquially refer to such cities as "party cities".

Why do we care Inquiring about this causal relationship is worthwhile for several reasons. The NBA Commissioner Adam Silver has reported that there is $400 billion per year spent on sports betting in the U.S. alone.(Weissmann, 2014, Isidore, 2014) Apart from arbitrage opportunities, knowing how player performance is affected by external factors could inform coaches of a more optimal play strategy. E.g. if visitation to a city with active nightlife is correlated with next-day injury, perhaps coaches might bench their star players if the latter game isn't crucial.

What do we do We exploit data on bookmaker spreads, the expected score differential between two teams after conditioning on observable performance. We expect a team to meet the spread half the time, since this is one of the easiest ways for bookmakers to guarantee a profit.(Dubner and Levitt, 2006) We construct a model which attempts to estimate the causal effect of visiting a "party-city" on subsequent day performance as measured by the spread. In particular, we are only looking at cases where games are played back-to-back within 24 hours of each other. To the extent that next-day opponent is uncorrelated with exposure to treatment, we have identification in our variable of interest.

What do we find We replicate this analysis for both the National Basketball Association (NBA) and Major League Baseball (MLB). In particular, we find that visiting a city with active nightlife the day prior to a game does have a statistically significant negative effect on a team's likelihood of meeting the point-spread set by a betting house, for both NBA and MLB. Within the NBA, we analyze specific performance metrics such as number of points allowed and number of rebounds obtained, and find that both are negatively effected by previous day visitation to a city with active nightlife. Having established a causal model, we realize a profitable betting scheme for MLB. We also perform a robustness check and see that if players rest more than 24 hours after visiting a "party-city", the hangover effect dissipates.