At the North American Society for Sport Management meeting in Toronto, Daniel Rascher (2008) discussed the lessons he had learned from conducting more than three-dozen economic impact studies. He identified fourteen areas for further study with respect to sport economic impact analysis including the “tourism research interpretation of the Alchian-Allen Theorem... that the further people travel on a sports tourism vacation, the more money they will spend upon arriving.” For sport managers and public officials alike, this is an important question because if the distance traveled by sport tourists results in higher relative local spending, then it can be expected that events with broad geographic appeal will yield a greater gross sales impact than events with narrow geographic appeal. In other words, the breadth of an event’s geographic appeal is positively related to the event’s potential gross sales impact.

Rascher’s suggestion is based upon an interpretation of Alchian and Allen’s “shipping the good apples out” hypothesis that was first introduced by Borcherding and Silberberg in a Journal of Political Economy article published in 1978. The original “shipping the good apples out” hypothesis in Alchian and Allen’s University Economics (1964) is based on the fact that good apples command a higher price than bad apples, yet their shipping costs are the same. As a result, the difference in relative price for good vs. bad apples shipped to distant markets is smaller than the difference in relative price for good vs. bad apples sold in the local market where they are produced. Economic theory therefore predicts that the market share of good apples to bad apples should be higher in markets where they are shipped than in markets where they are grown, a direct consequence of the substitution effect induced by the normal curvature of consumer indifference curves.

Borcherding and Silberberg (1978) proposed that the Alchian-Allen hypothesis can also be true when consumers are “shipped to the apples.” For example, tourists pay travel cost to reach a destination and opt to spend more for a higher quality stay because the inclusion of travel costs in the overall price of the trip lowers the relative difference between the low quality and high quality stay. A few papers have actually attempted to test this hypothesis in various ways, such as examining the effect of two-part tuition pricing (in-state v. out-of-state) on student credit hour per semester choices (Staten & Umbeck 1978), varying travel cost effects on the relative costs of different grade ticket packages associated with attending athletic events (Bertonazzi, Maloney & McCormick 1993), and the effect of per-unit freight charges on import quality combinations (Hummels & Skiba 2004). These research efforts support the Alchian-Allen hypothesis with varying degrees of success. However, the ultimate test of validity for the Alchian-Allen hypothesis, as it pertains to the tourist expenditure model, rests in controlling for income effects. In other words, if travel costs are very high, income effects may complicate the size of the consumer demand response to changes in relative quality prices at the destination market.

Our paper provides an empirical study of the strength of the “shipping the tourists to the apples” version of the Alchian-Allen theorem, as described by Borcherding and Silberberg, using a measure of travel costs that effectively controls for any income effects. In our study, the tourists are all out of town participants in the marathon or half-marathon races associated with the 2008 Cincinnati Flying Pig Marathon, and the “apple” being purchased is a stay in the Cincinnati area while participating in these races. We assume that the quality level of the stay varies directly with the amount of each participant’s discretionary spending associated with their visit to Cincinnati as measured by event-related spending in Cincinnati for lodging, restaurants, bars, entertainment, and the marathon Expo.

Our data came from an online survey of race participants and to assure population homogeneity, we limited our research sample to only those non-local participants who stayed in a hotel and traveled to Cincinnati by car. By limiting our sample in this way, we eliminate runners who stayed in Cincinnati with family or friends. More importantly, by including only those who traveled to Cincinnati by automobile, we believe that the costs of travel are primarily time-related and therefore are not likely to create the kind of income effects that would confound the Alchian-Allen hypothesis test.
To test the Alchian-Allen hypothesis, we regressed our quality of stay variable (discretionary spending for lodging, restaurants, bars, entertainment, and the marathon Expo) on distance traveled (in 100 mile units), the square of distance traveled, dummy variables for participant income, and a dummy variable reflecting whether the participant traveled alone or with family. We included the square of distance in our regressions because economic theory suggests that if the Alchian-Allen hypothesis is correct, distance traveled should have a direct but decreasing impact on discretionary spending levels. Although we ran our regressions using both linear and semi-log specifications, we prefer the semi-log form because we believe that the impact of a change in each explanatory variable on discretionary spending is likely to vary with the level of spending. In the semi-log specification, each explanatory variable coefficient shows the impact of a change in that variable on the percentage change in the dependent variable. This allows us to estimate the impact of distance traveled on discretionary spending in percentage terms.

All regressions, linear and semi-log, yielded consistent support of the Alchian-Allen hypothesis, namely that distance traveled has a positive and significant impact on discretionary spending levels. In addition we also found that high income race participants spend more than those participants with a household income level below $100,000, and that runners traveling with family members also tended to spend more. Our regressions also supported our hypothesis that the effect of distance traveled on discretionary spending does in fact diminish with distance as economic theory suggests, and these results were robust across both race groups. In fact we found that there were no statistically significant differences in the size of these effects between the marathon and half-marathon groups. In our pooled sample using the semi-log specification, we found that the impact of a 100 mile increase in distance traveled on spending levels at 100 miles, 200 miles, 300 miles, and 400 miles is 13.8%, 13%, 12.2%, and 11.4% respectively. We therefore conclude that the suggestion made by Daniel Rascher, that the study of the “tourism research interpretation of the Alchian-Allen Theorem” is an important direction for further research in sports related economic impact studies, is indeed warranted.