

Enlarging the Market Yet Decreasing the Profit

Competitive Behavior When Investment Affects the Prize

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Abstract

A repeated competition game with investment-dependent prizes ($n=108$) showed that investments were higher when the opponent's investment increases the winner's prize, and lower when the investment decreases the prize. This pattern implies that prosocial considerations are at play. Notably, in certain situations such tendencies may lead to a larger waste of resources.

Background

Competitions are ubiquitous in sports, education, politics, markets... Participation is often costly, irrespective of win or loss.

The prize often depends on contestants' investments: In some cases investments **increase** the prize (market size, patents); in other cases, investments **decrease** the prize (lobbying, lawsuits).

People have preferences over others' payoffs: Care not only about their own prize, but also about social comparison, and the overall pie.

Does winning (vs. losing)
affect subsequent investment?

Do contestants invest differently when
their investments **increase** or **decrease** the prize?
... and do they benefit from it?

Hypotheses

If the loser's investment **increases the winner's prize**:

Investments increase?

Increased attractiveness of winning, larger pie size.

Investments decrease?

Larger difference between the winner and loser's payoffs.

If the loser's investment **decreases the winner's prize**:

Investments increase?

Decreasing the winner's payoff if one loses.

Investments decrease?

Diminished attractiveness of winning, smaller pie size.

Method: Invest Game

In 16 rounds, players ($n=108$) receive endowments and decide how many points to invest in a two-player competition.

The player who invests the most, wins the prize.

All investments are paid, regardless of winning or losing.

Un-invested points and prizes are converted to money at the end.

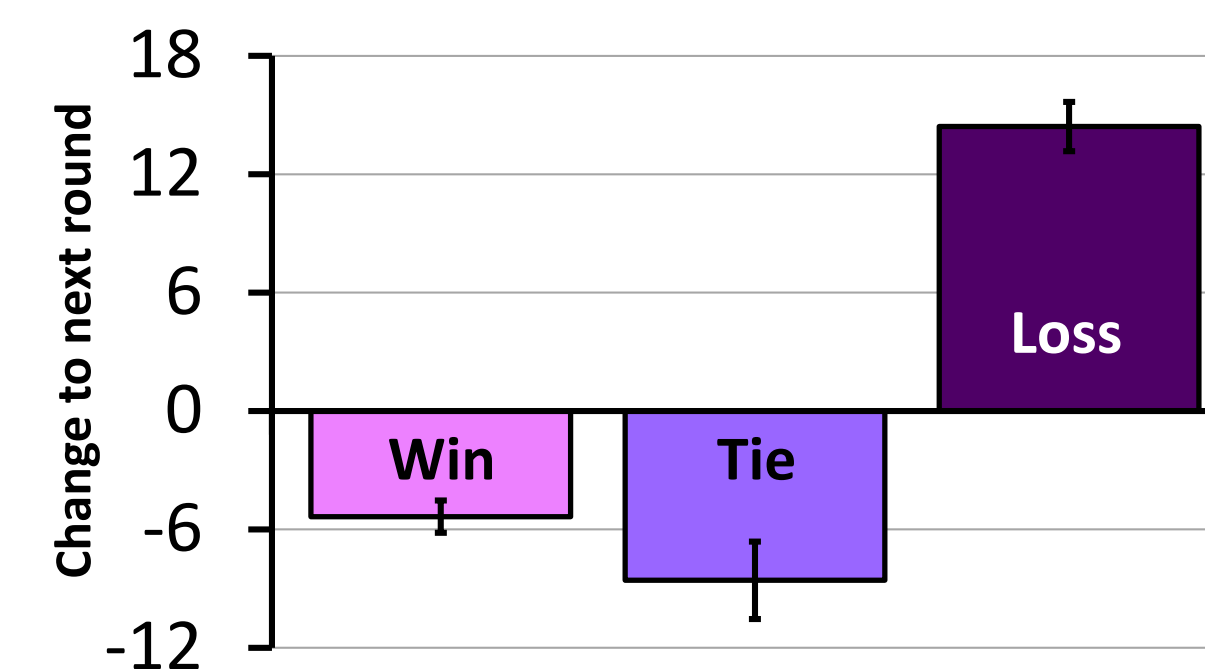
The prize has an initial value of 96 points.

Winner's investment: Every point invested
increases by ¼ point / **doesn't change** own prize.

Loser's investment: Every point invested **increases by ¼ point** /
decreases by ¼ point / **doesn't change** the *winner's* prize.

Results

Winning vs. Losing

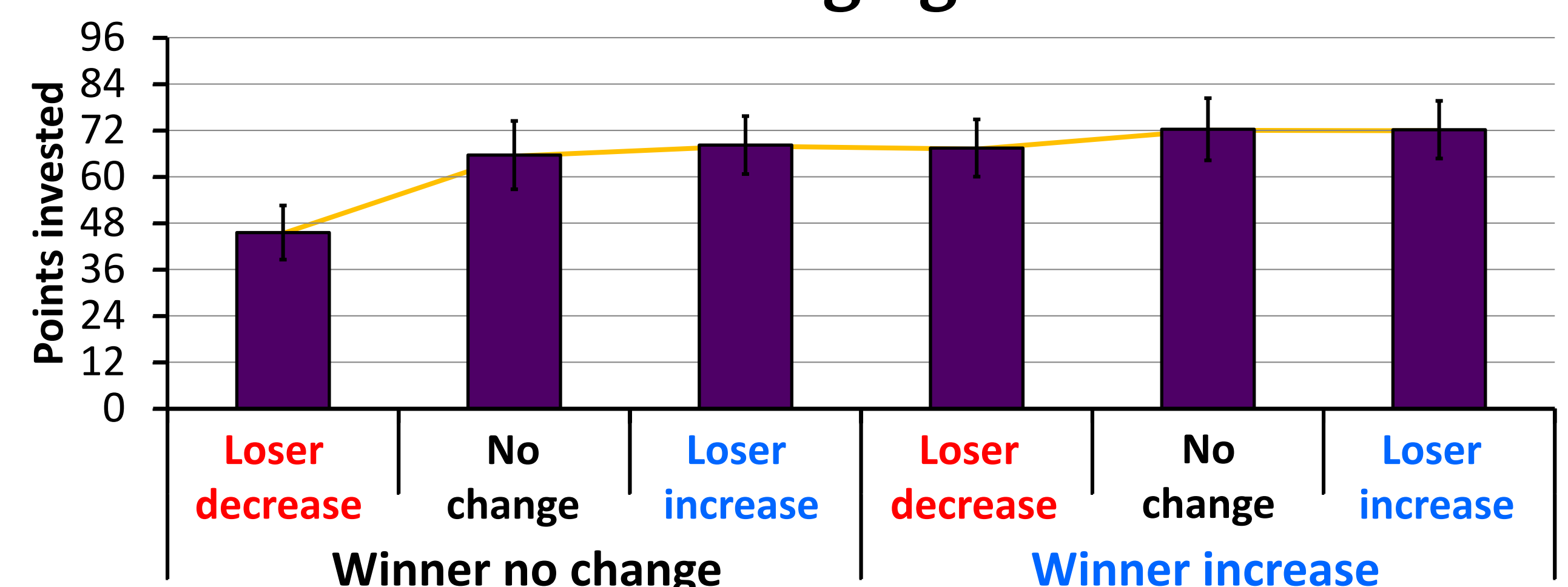


Across all conditions: Irrespective of winner and loser impacts.

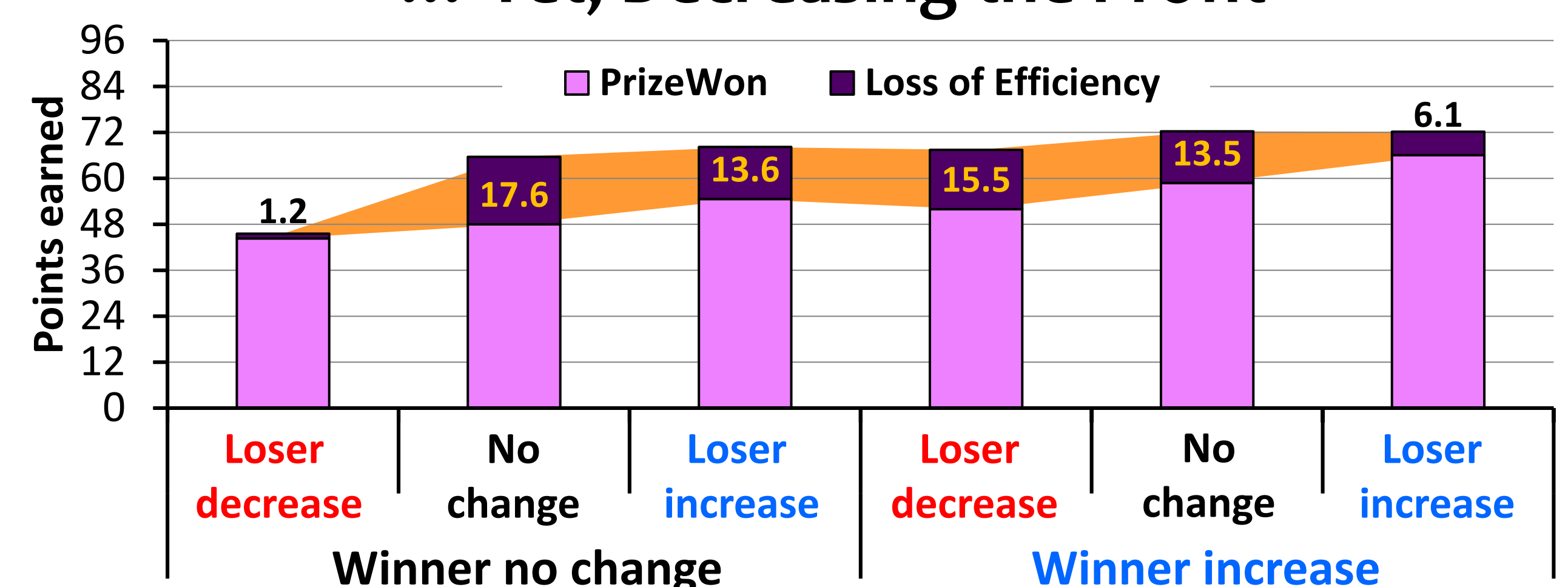
Stable over time – across rounds.

(Controlled for regression to the mean)

Investments: Enlarging the Market ...



... Yet, Decreasing the Profit



Conclusions

Subjects invested heavily, arguably too much, in the competition.

When investments **increased** the prize, competition was **exacerbated** – even when contributing to the winning *opponent's* prize.

When investments **decreased** the winner's prize, competition was **diminished**, increasing overall earnings.

The investment pattern implies that subjects care about winning and about the overall pie, and do not seek to hurt their opponents.

Competition organizers could use various prize structures, depending on their goals and the social value of investments.

References

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