

## A Stackelberg duopoly model with sticky prices and myopic follower – extended abstract

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In this paper, we present an extensive analysis of a dynamic model of a quasi Stackelberg duopoly with sticky prices, in which the leader, conscious about the dynamics of price, maximizes present value of their stream of profits, taking into account the best response of the follower to his strategy, while the the follower reacts only to current production of the leader as in the static Stackelberg model.

The model is a continuation of works on models of oligopolies with sticky prices ([1]–[3]), in which Cournot oligopoly was studied, especially [3] in which an in-depth analysis of the problem was performed, while the idea of interaction between players is suggested by [4].

By extensive analysis of the model, we calculate all the optimal trajectories of price (depending on the initial price) and whole strategies of both players, not only steady states, both in open loop (dependent on time only) and feedback (dependent on price only) forms. Unlike in the Cournot oligopoly, results for those two information structures are equivalent.

If the initial price is below some level, we observe that the leader refrains from production to let the price increase, while the follower has large production without any competitor.

We analyse also behaviour of equilibrium price and production of both firms as functions of parameters of the model and we obtain, among other things, monotone convergence of steady states of Stackelberg equilibrium price and productions to analogous levels of the static Stackelberg equilibrium as the speed of adjustment tends to infinity.

The calculated results are also compared to Cournot oligopoly results (from [3]).

### REFERENCES

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