Investment timing under uncertainty in oligopoly markets with many firms

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We analyze the investment decisions under uncertainty in oligopoly markets by considering a market of many firms with asymmetric cost structure in a discrete time setting where the demand evolves stochastically and follows a linear structure. Considering competitive strategies, increasing the number of firms imposes inevitable complexities to the model structure. We propose a new approach, based on reinforcement learning, to numerically solve the investment timing problem when the number of firms increases. Our approach can be more generally applied to investigate markets of many firms with several investment opportunities.