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(youssef.dib@balamand.edu.lb), Koura, North , Lebanon, and **Y. N. Raffoul**
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Fluctuation Through Stochastic Processes.*

We study the optimal level of cash for the firm to hold. We model the cash level with inflows and outflows due to deposits and withdrawals; In between, the cash level is a stochastic process were it signals a time to sell. After modeling the continuous jump, we implemented first step analysis method to find the probability of the event with initial cash and we were able to calculate data driven by set of difference equations. These data are used to determine the length of the period of the investment. Then , we adopt the probabilistic decision model where it goes under mathematical optimization. This model let the investor to maximize the probability of success or to stop on one of the largest fortune using the equation of the principle of optimality. Finally, to solve these optimal equations, we used the result of positive dynamic programming and we elaborate them by proves. (Received September 26, 2017)