

## Ordinary differential equation in the continuous-in-time financial model

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### ABSTRACT

SOFI is a software tool marketed by the company MGDIS. It is designed to the public institutions such local communities to set out multiyear budgets. SOFI is based on a discrete financial modeling. Consequently, the default of SOFI is using tables of type Excel. In [1, 2], we build a new model with using an other paradigm. This new model is based on continuous-in-time modeling and uses the mathematical tools such convolution and integration, etc.

The continuous-in-time financial model relies on measure theory. We created measures and fields and we used them in our modeling in order to show the consistency of the model. We have showed in this modeling how some aspects of functioning of loan with constant rate could be inserted in continuous-in-time model. We build a financial model with variable rate which allows model a rate of constant loan which is defined at borrowed time.

### REFERENCES

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