

# **Branching stochastic processes as models of Covid-19 epidemic development**

**Vanuatu - 20201214**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Vanuatu - 20201214**

### **Abstract**

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country Vanuatu. The data comes from European Centre for Disease Prevention and Control available at <https://opendata.ecdc.europa.eu/covid19/casedistribution/csv>.

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## Table of Contents

1. Observed Infection data .....	1
2. Estimating of the main parameter and some predictions .....	3

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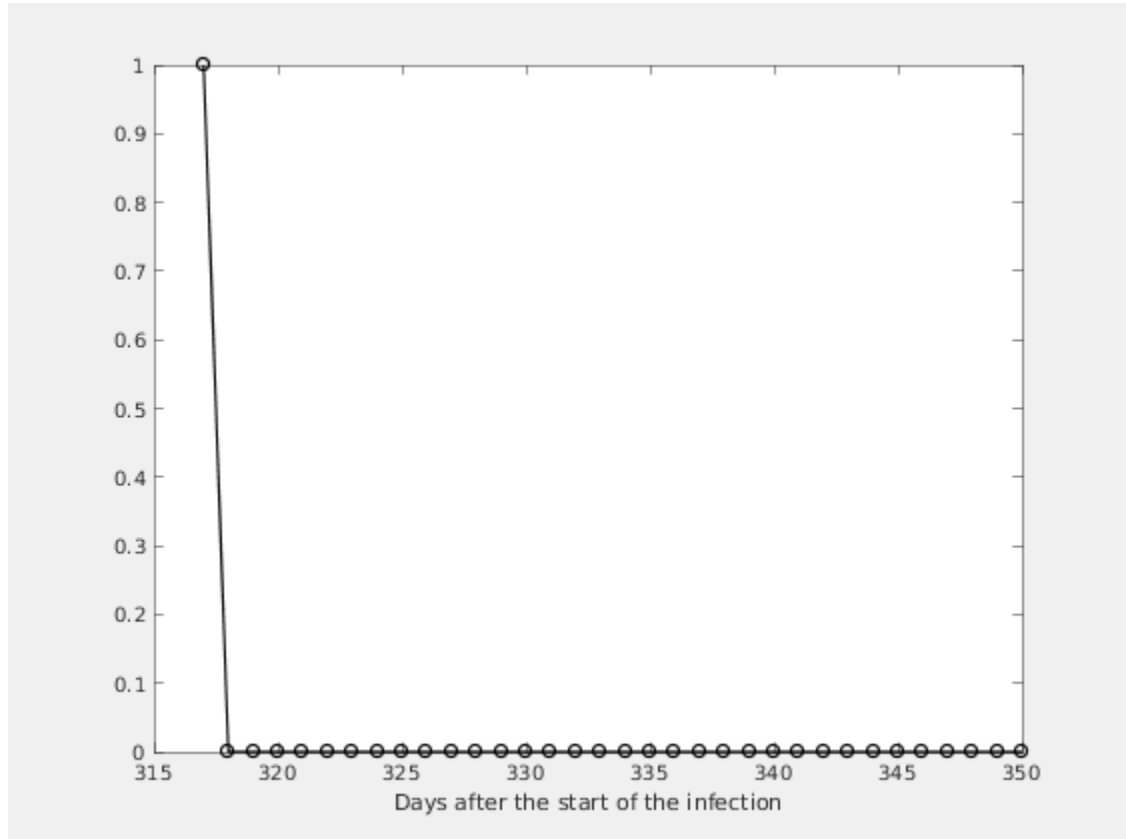
## List of Figures

1.1. Number of the daily reported laboratory-confirmed cases .....	1
1.2. Number of the total registered cases .....	2
2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate .....	3
2.2. Figure .....	4
2.3. Expected number of the nonregistered infected individuals without immigra- tion .....	5
2.4. Expected number of the nonregistered infected individuals with immigration .....	6

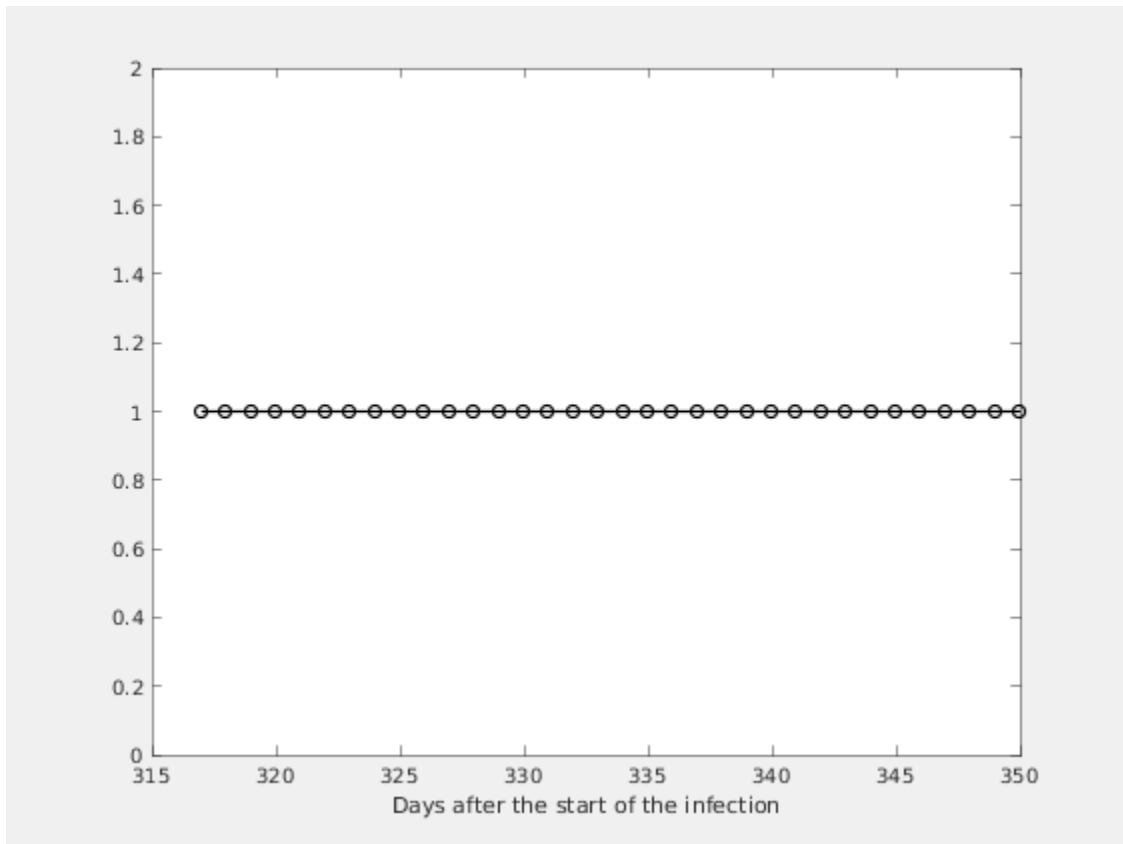
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the daily reported laboratory-confirmed cases



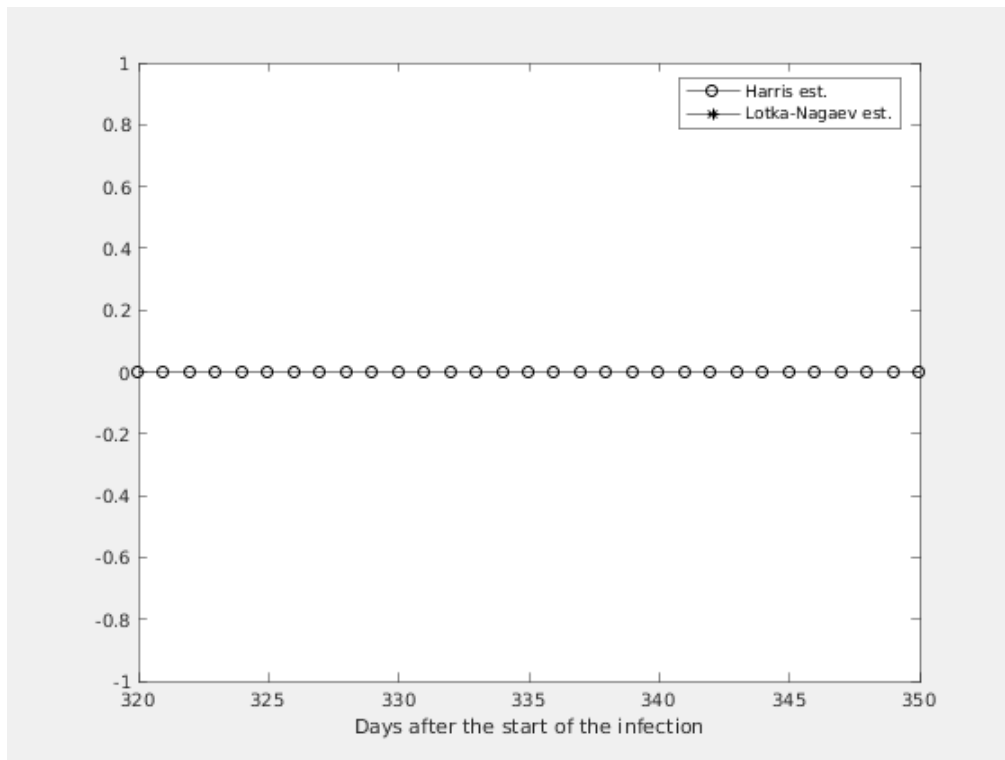
**Figure 1.2. Number of the total registered cases**



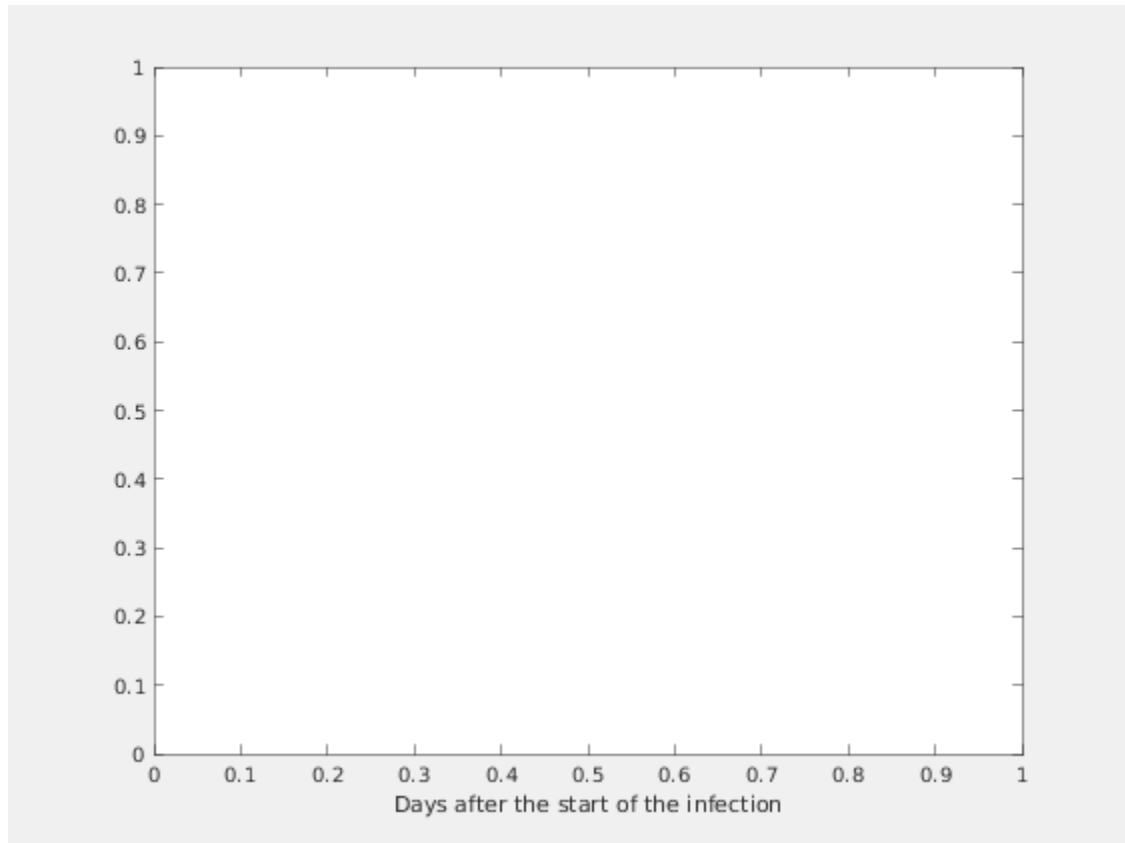
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# Chapter 2. Estimating of the main parameter and some predictions

Figure 2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate

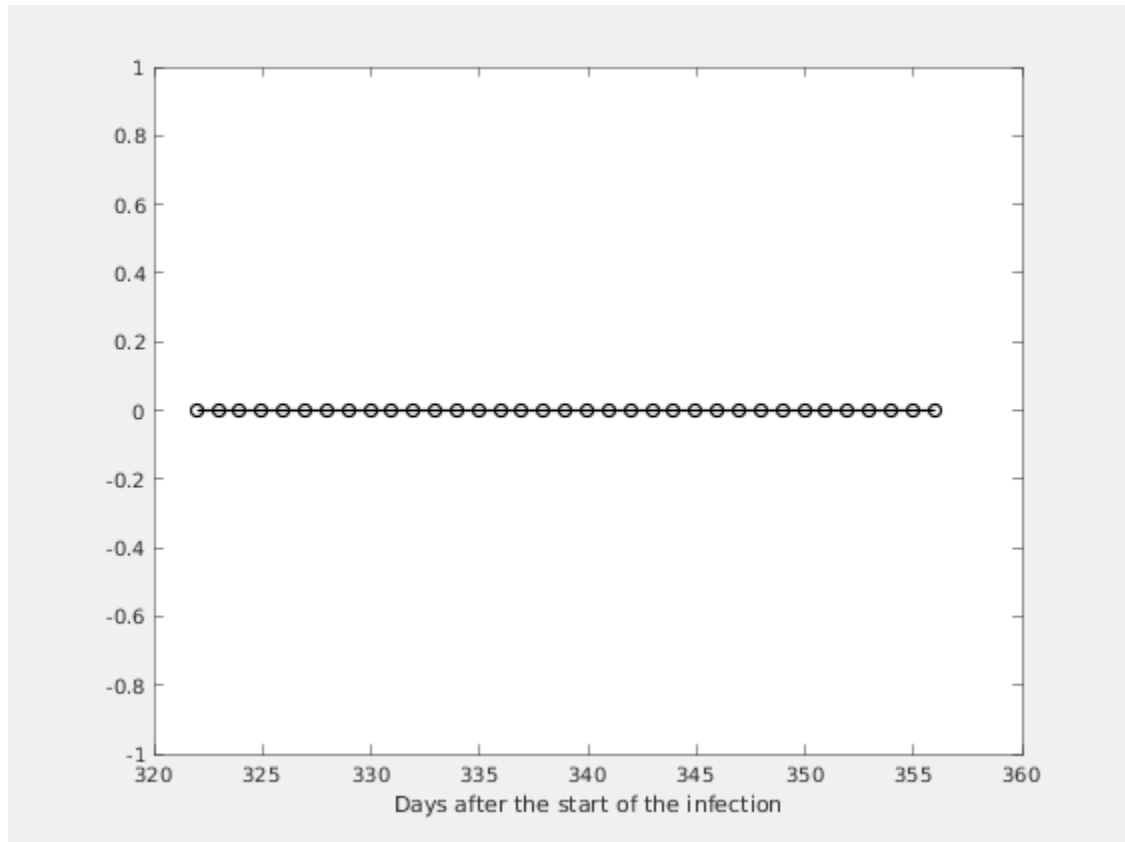


**Figure 2.2. Figure**

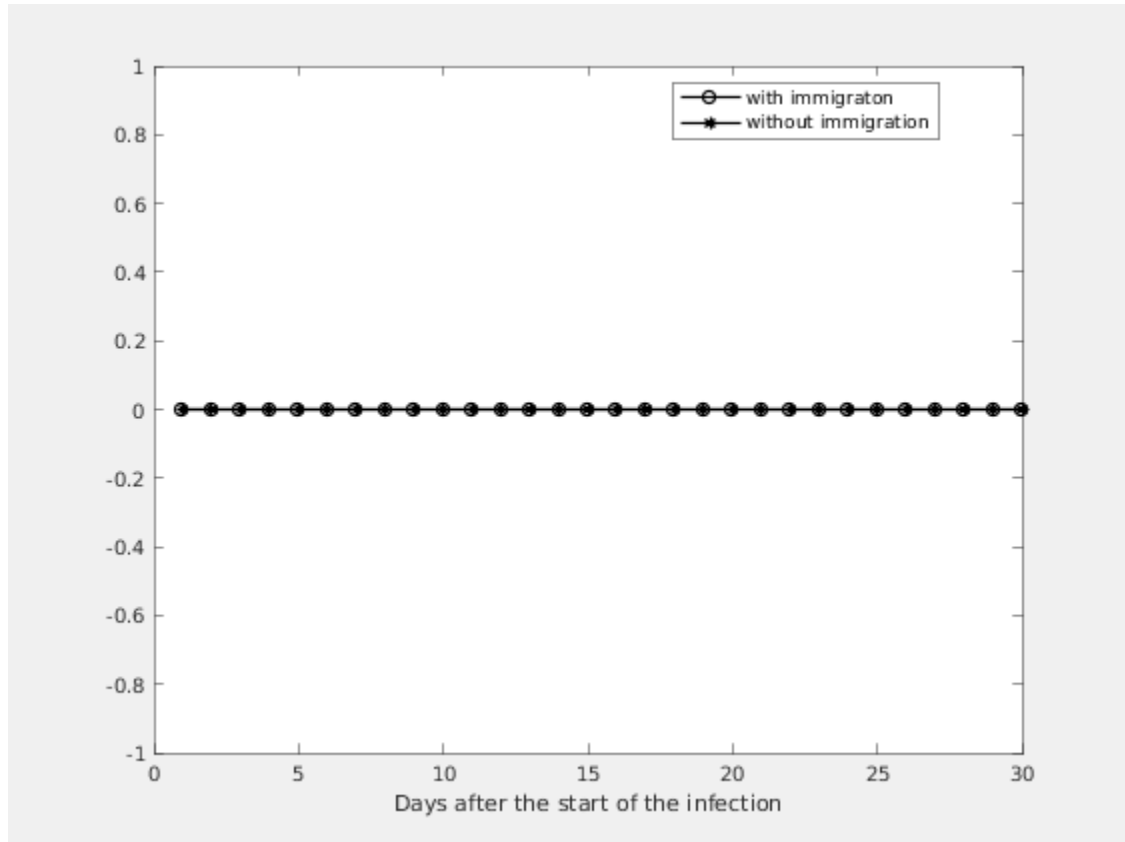




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



**Figure 2.4. Expected number of the nonregistered infected individuals with immigration**



**Estimation of the model parameters.**

k	m	ci	alpha	M1	A1
4	1.0019	0.9311 - 1.0726	0.6984	66	66
3	1.0021	0.9316 - 1.0727	0.6886	66	66
2	1.0019	0.9316 - 1.0722	0.6882	66	66
1	1.0019	0.9317 - 1.0720	0.7132	67	67
0	1.0018	0.9319 - 1.0717	0.6888	66	66