

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

**Panama - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Panama - week 53**

### **Abstract**

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country Panama. 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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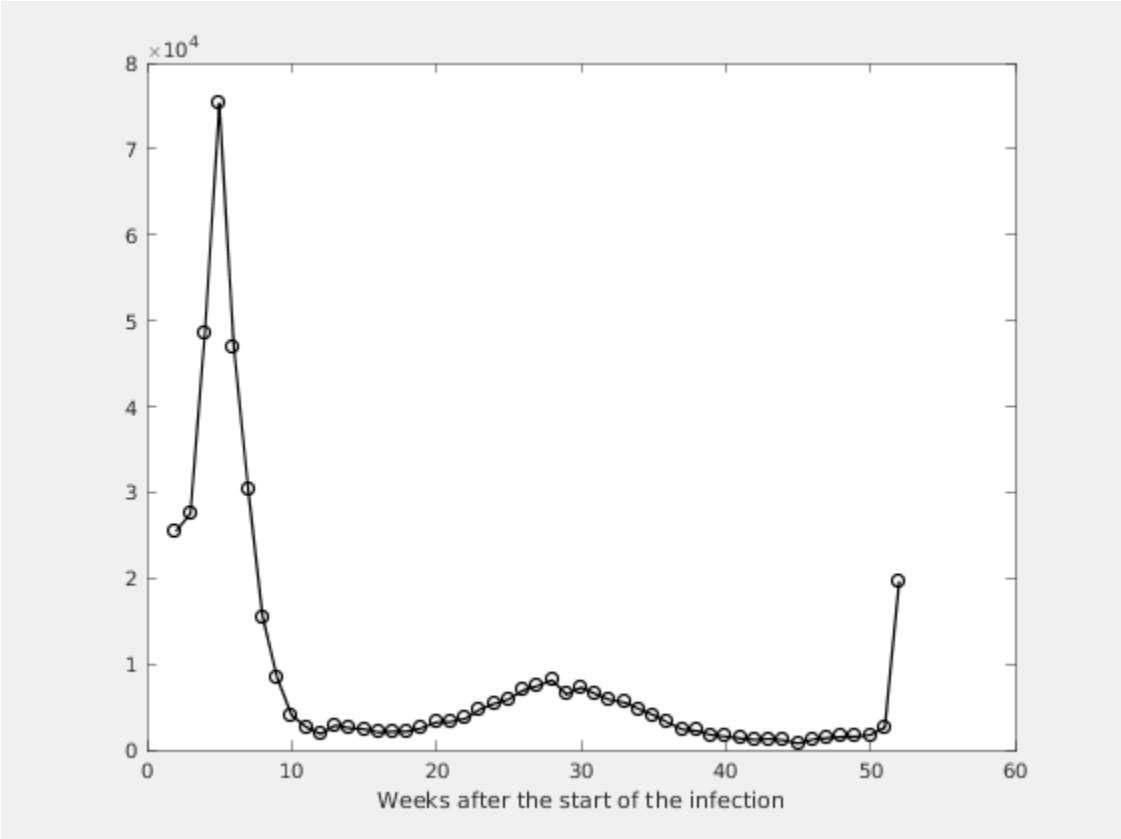
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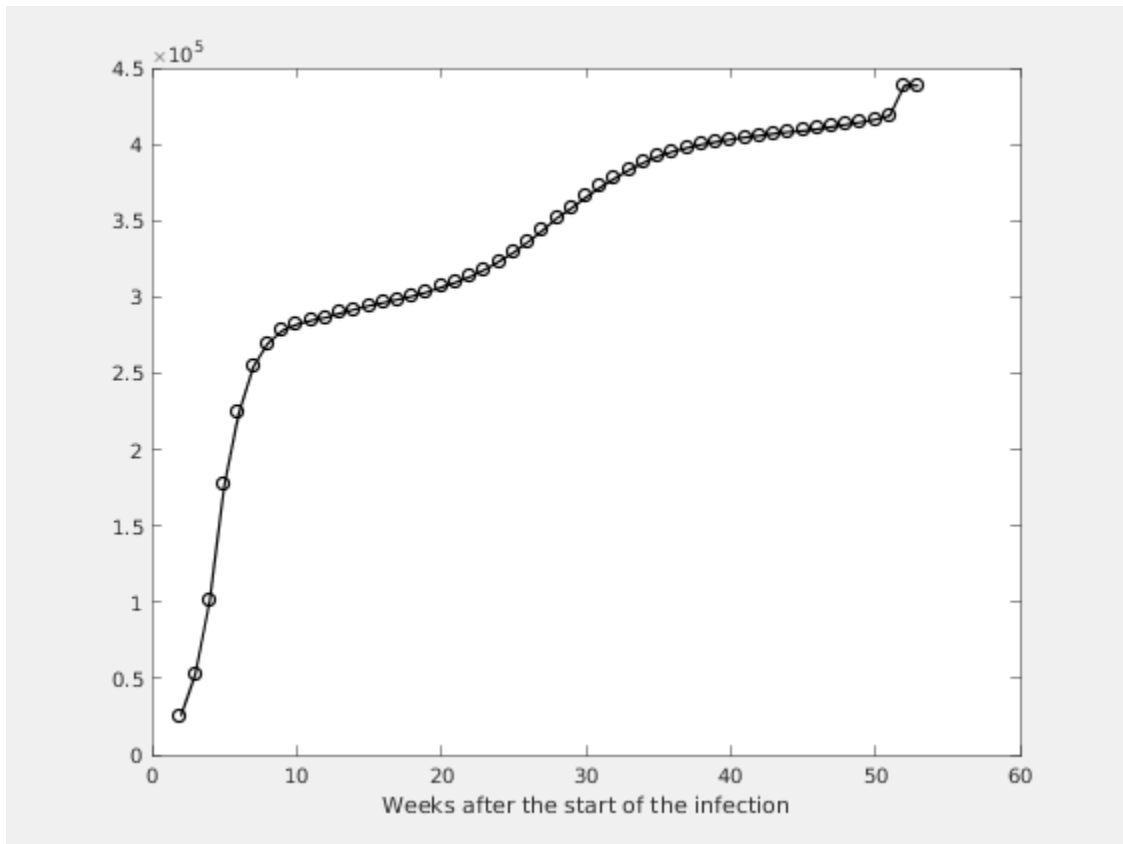
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the weekly 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

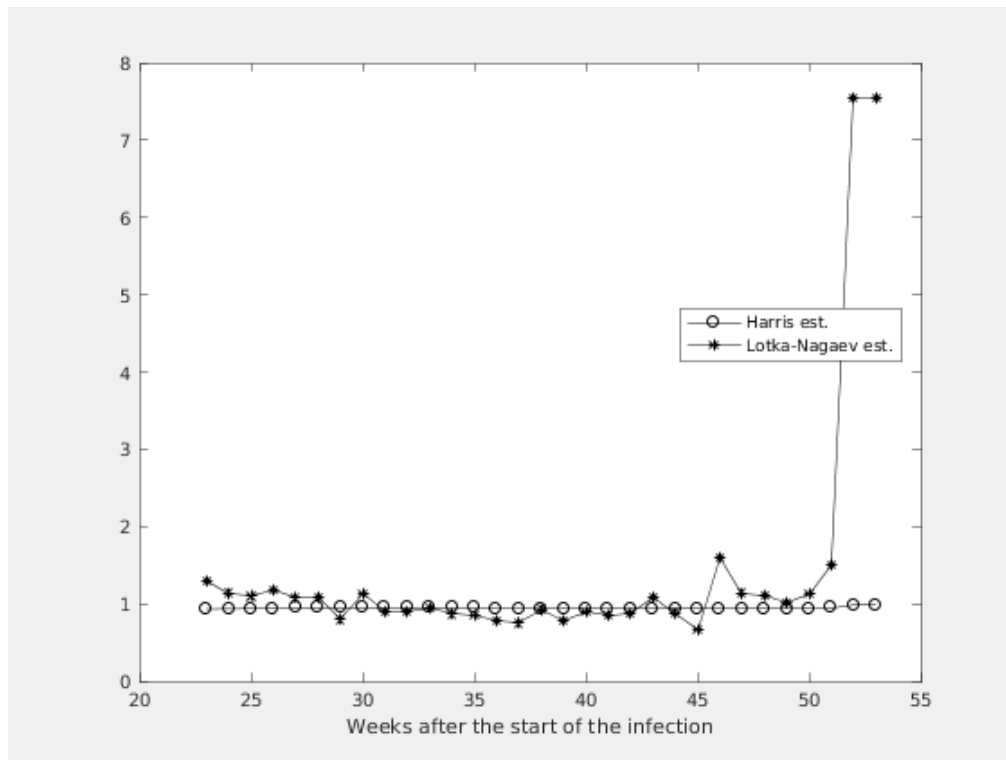
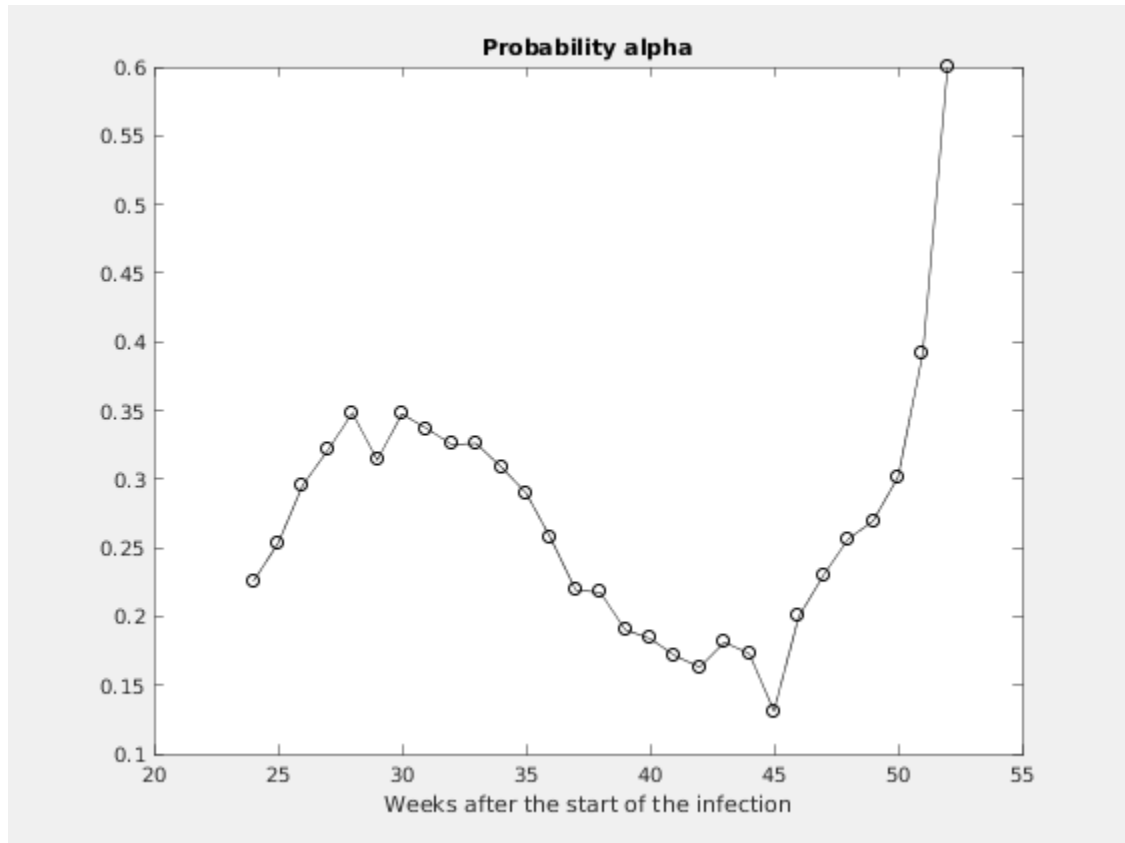
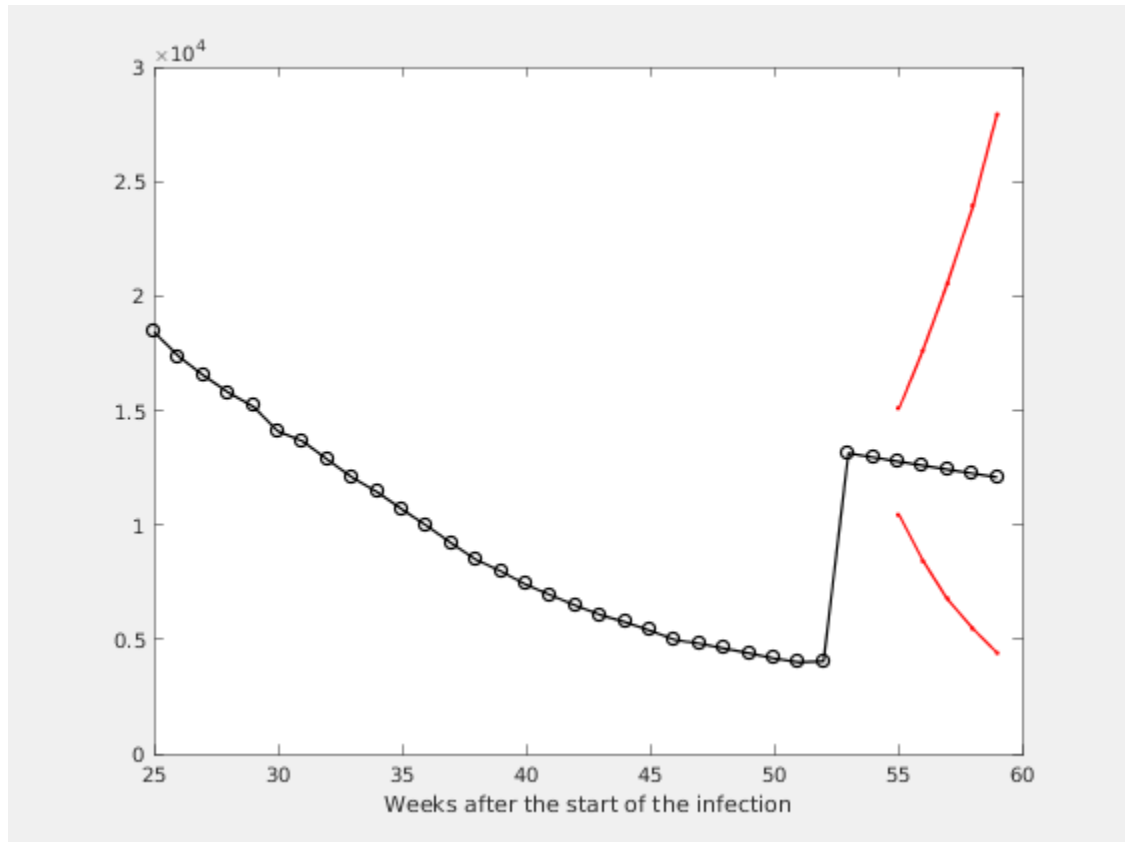


Figure 2.2. Figure

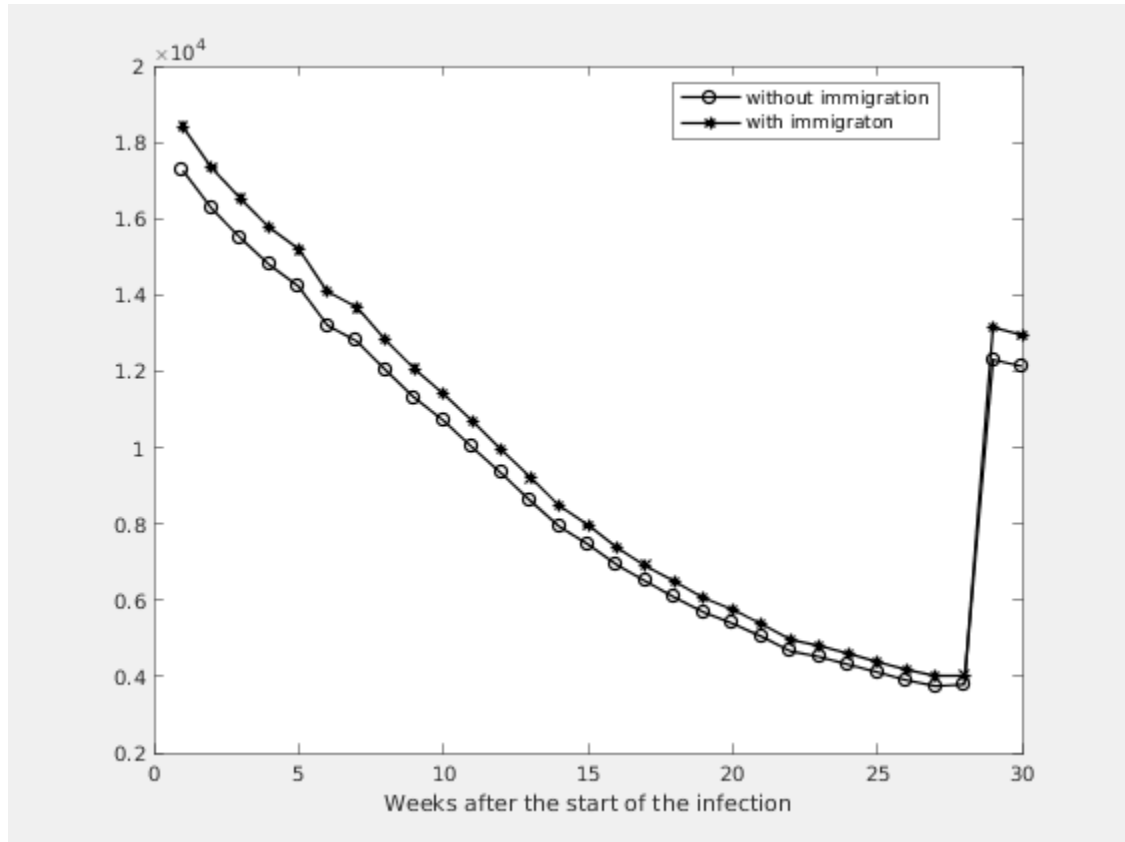




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9421	0.8275 - 1.0567	0.2302	4601	4311
3	0.9427	0.8296 - 1.0559	0.2567	4394	4116
2	0.9451	0.8333 - 1.0569	0.2696	4169	3905
1	0.9862	0.8750 - 1.0973	0.3015	4003	3750
0	0.9862	0.8760 - 1.0963	0.3917	4046	3790