

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

**Poland - week 53**

**N. Yanev, V. Stoimenova, D. Atanasov**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Poland - 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 Poland. 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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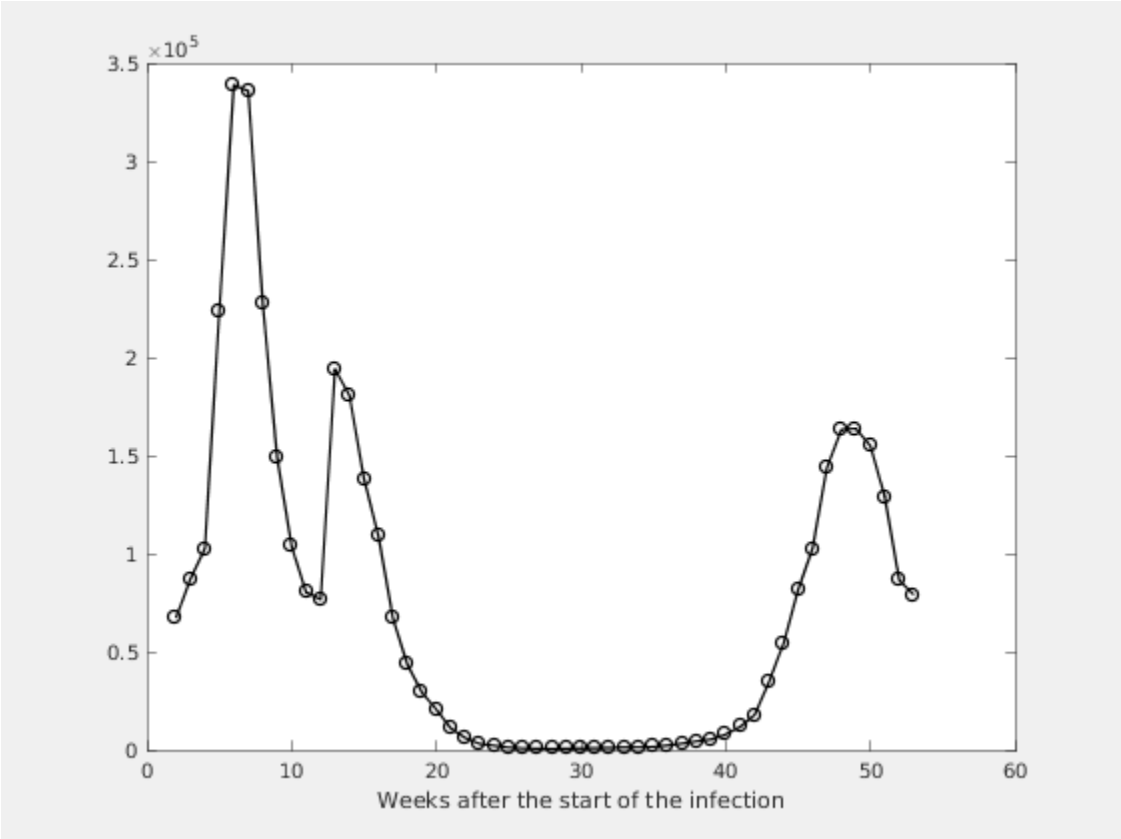
## List of Figures

1.1. Number of the weekly 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

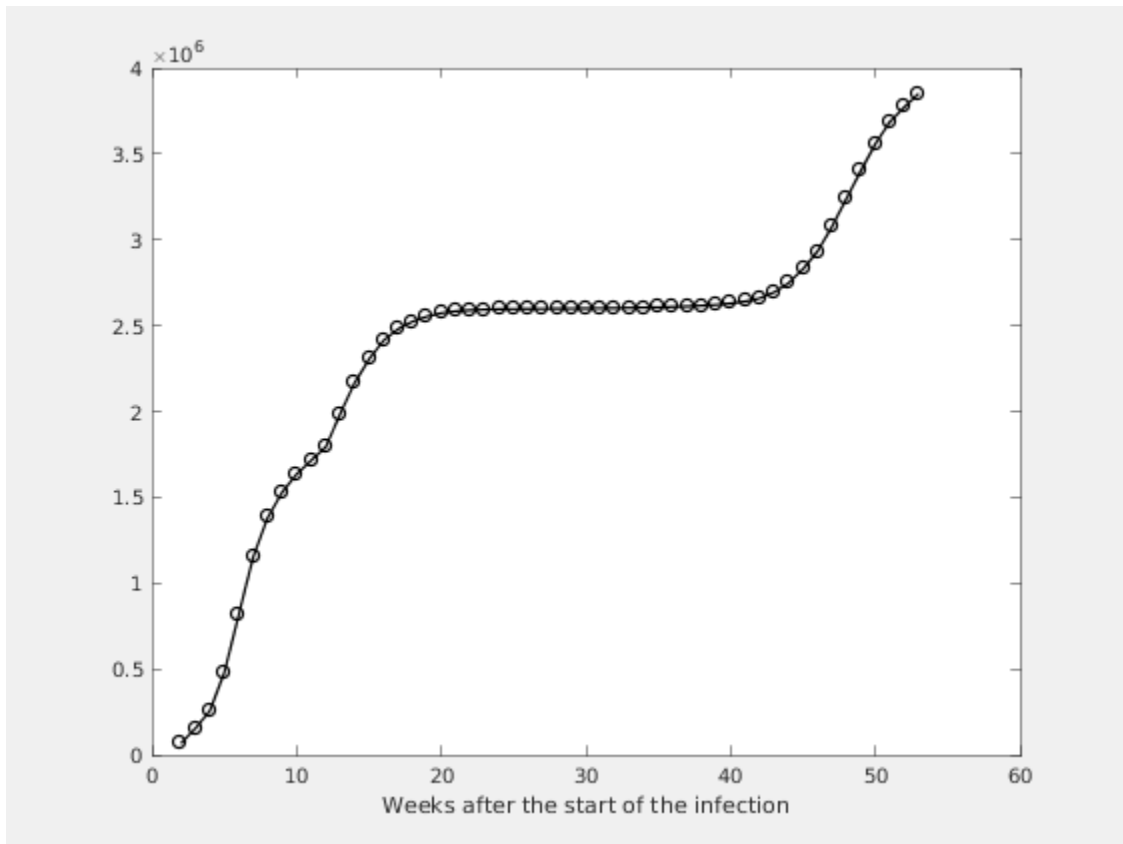
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# Chapter 1. Observed Infection data

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



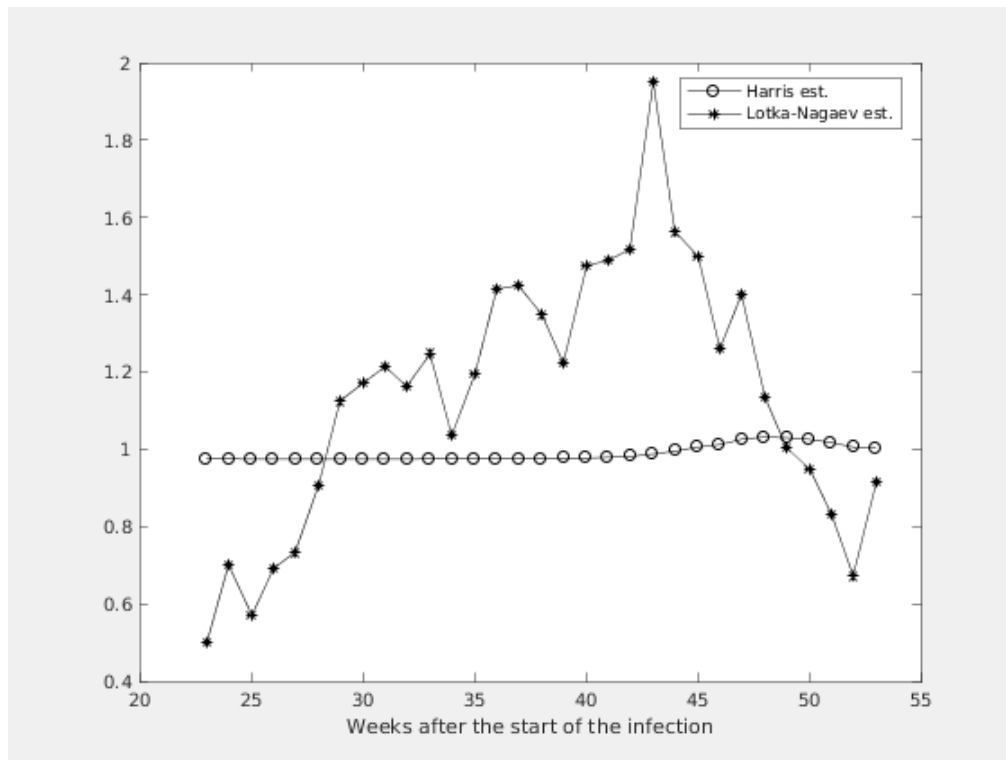
**Figure 1.2. Number of the total registered cases**



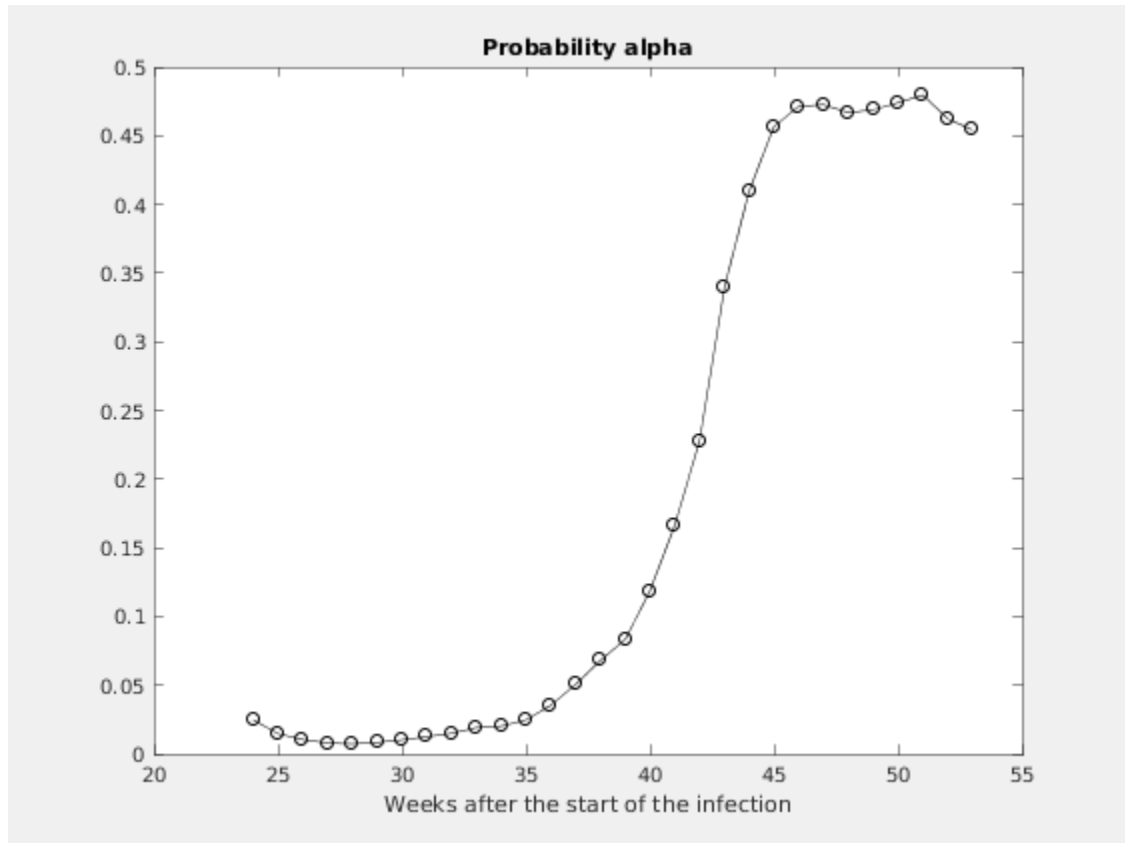
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# Chapter 2. Estimating of the main parameter and some predictions

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

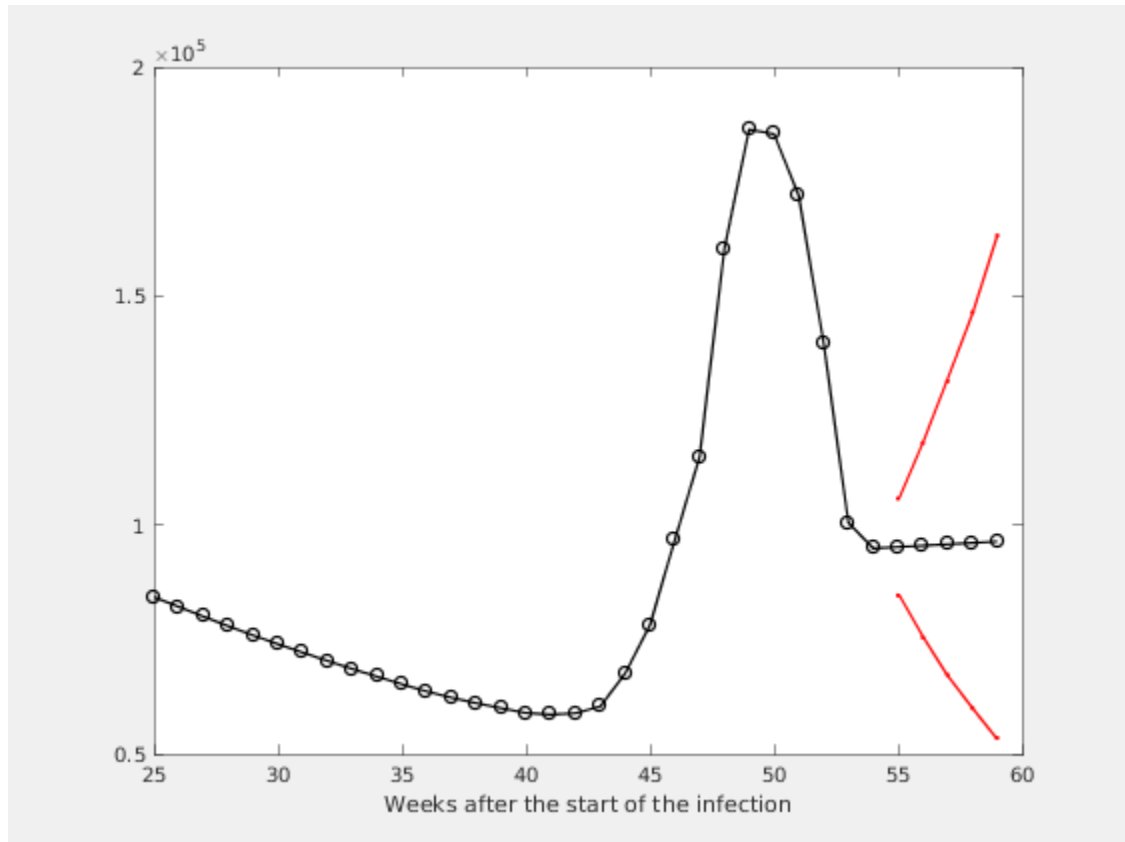


**Figure 2.2. Figure**

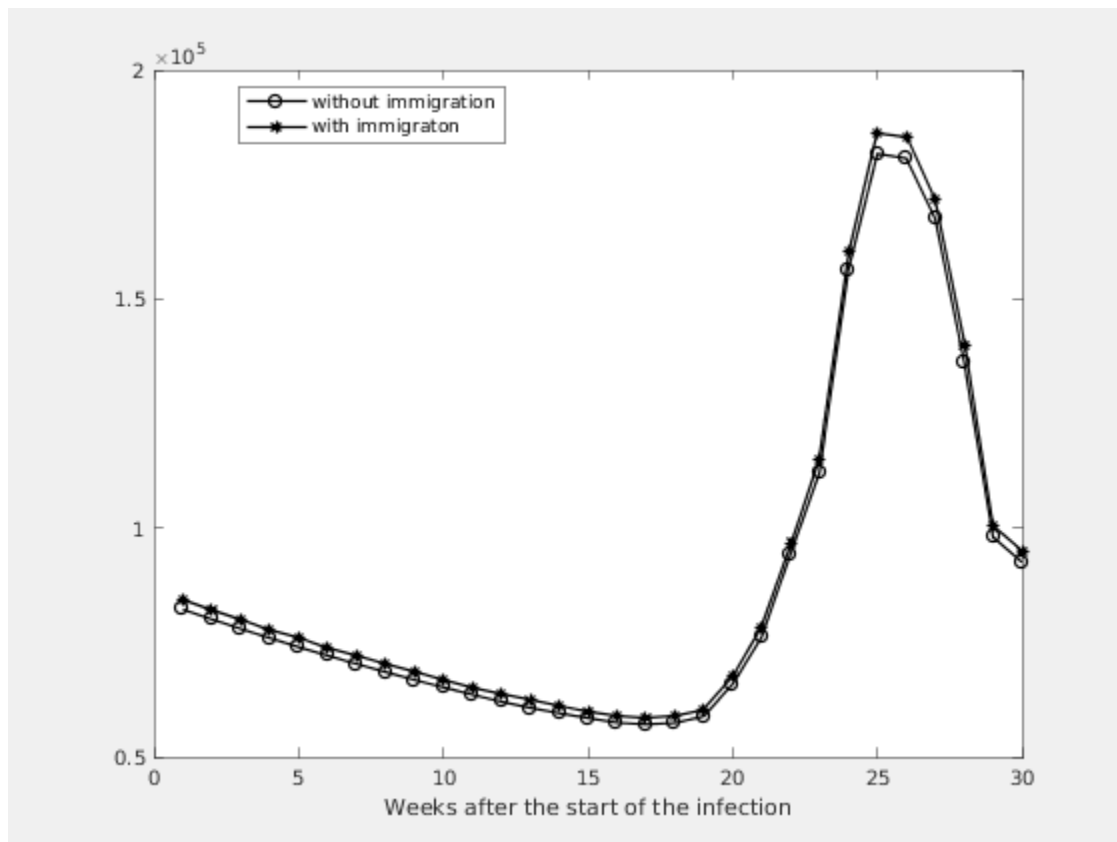




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0298	0.8978 - 1.1618	0.4726	160370	156346
3	1.0258	0.8981 - 1.1534	0.4669	186371	181695
2	1.0173	0.8942 - 1.1404	0.4689	185377	180725
1	1.0052	0.8862 - 1.1243	0.4741	171849	167537
0	1.0031	0.8874 - 1.1188	0.4796	139775	136268