

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

**United\_Kingdom - 20201214**

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## **Branching stochastic processes as models of Covid-19 epidemic development : United\_Kingdom - 20201214**

### **Abstract**

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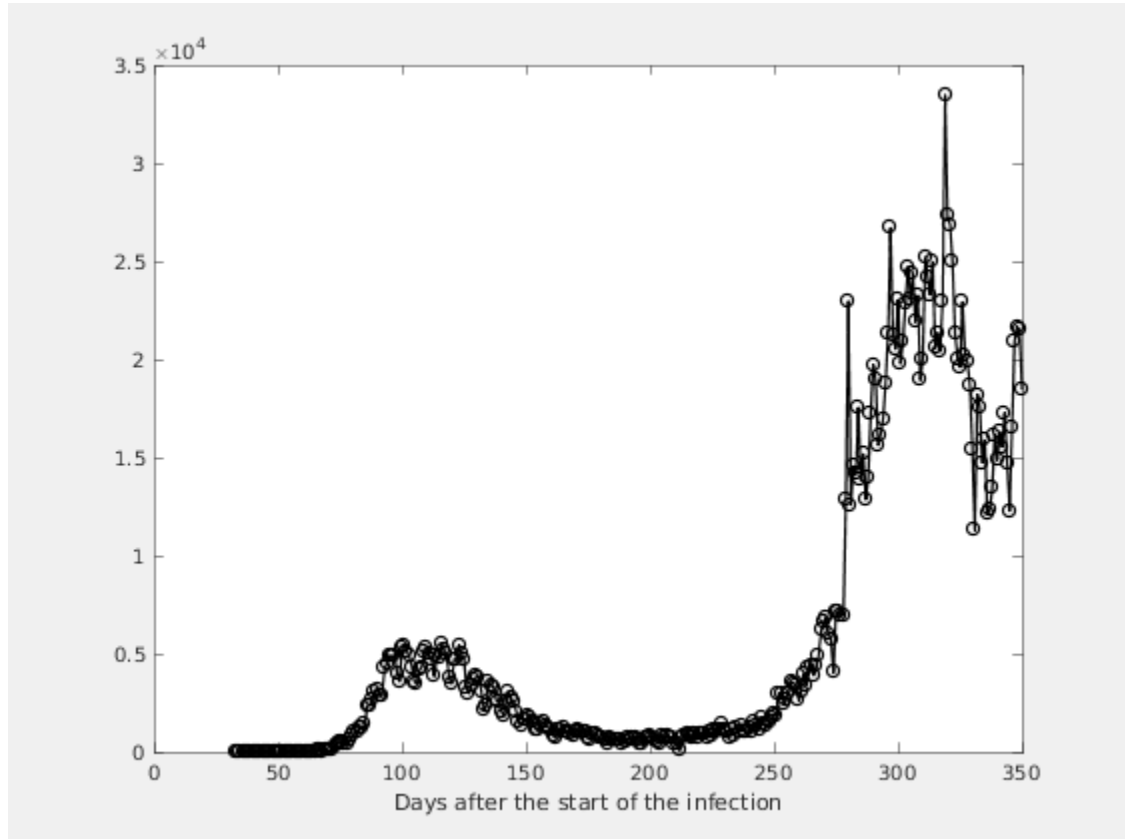
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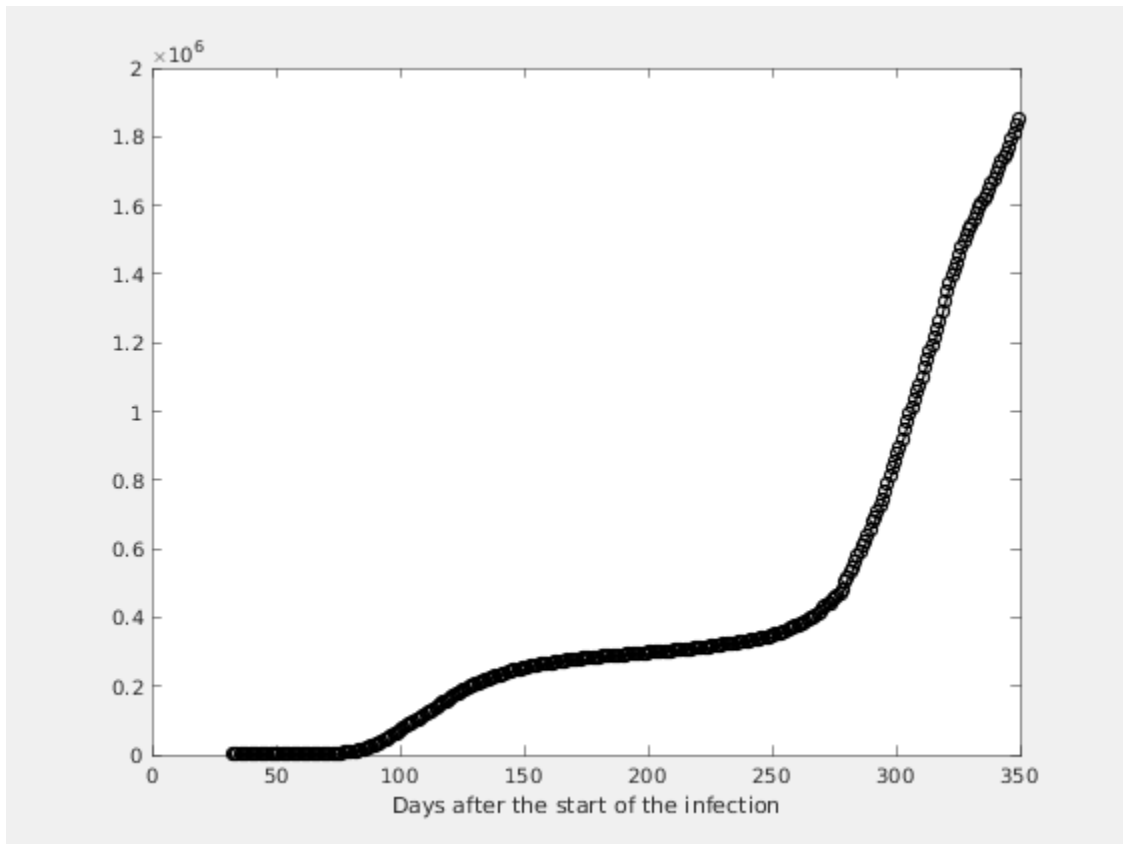
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the 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

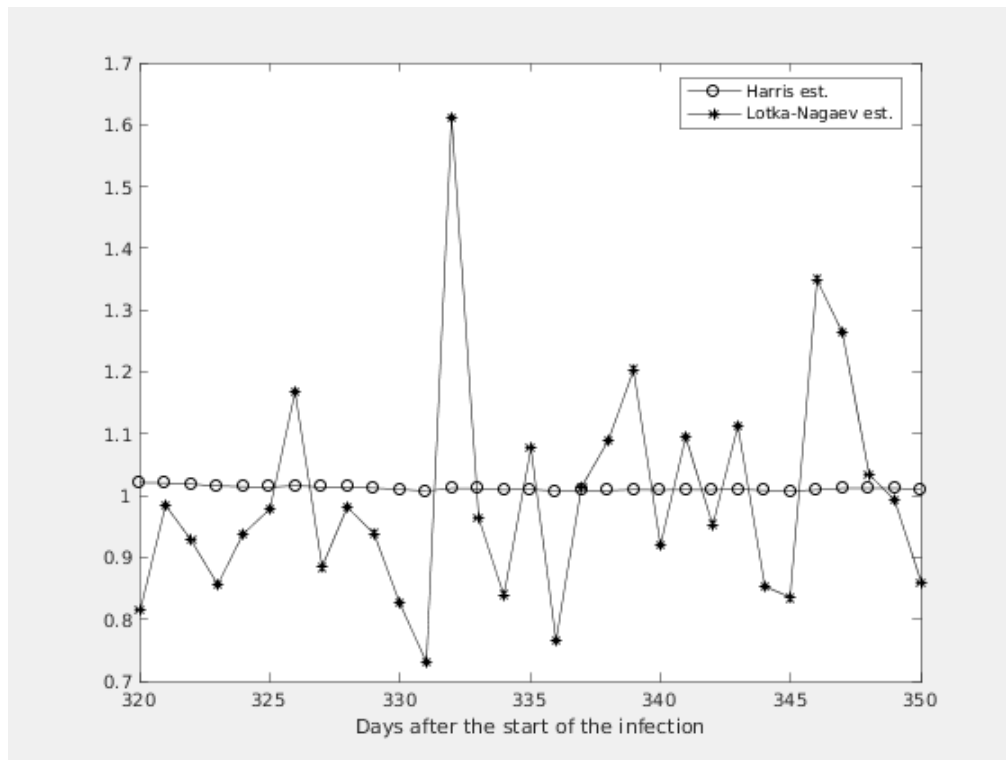
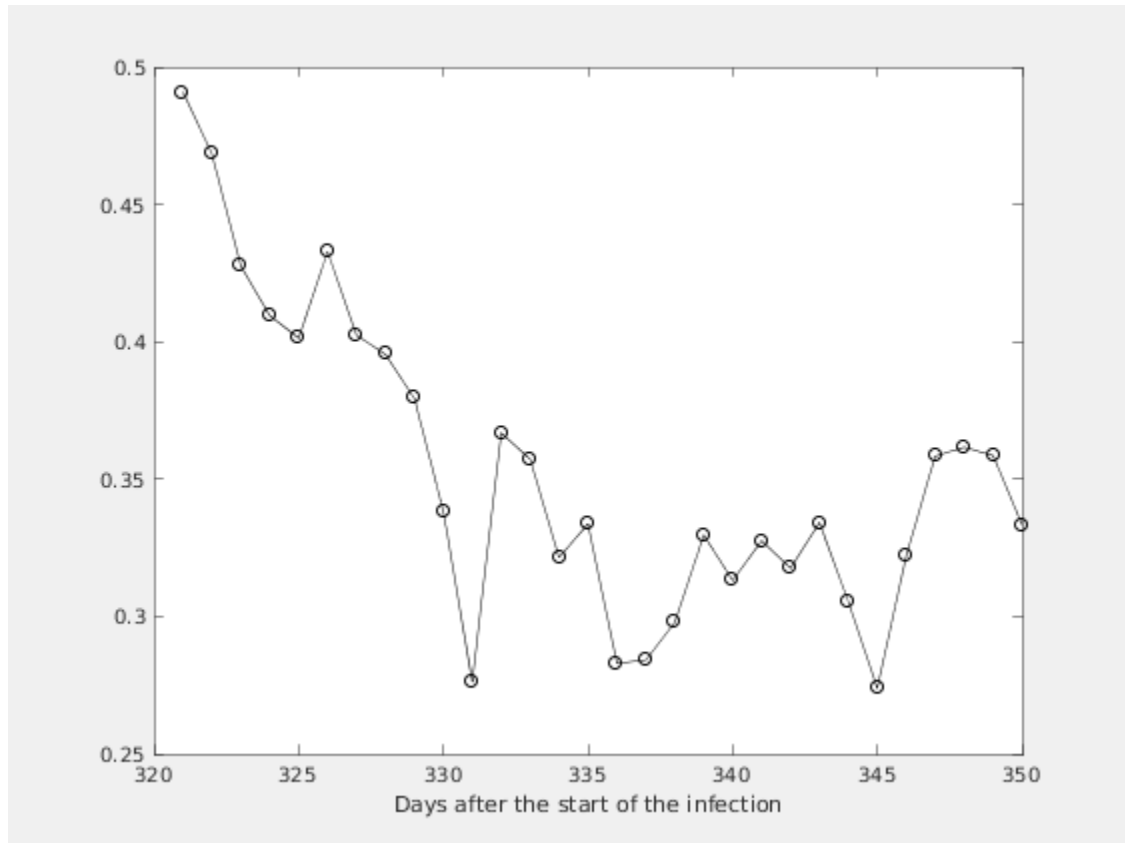
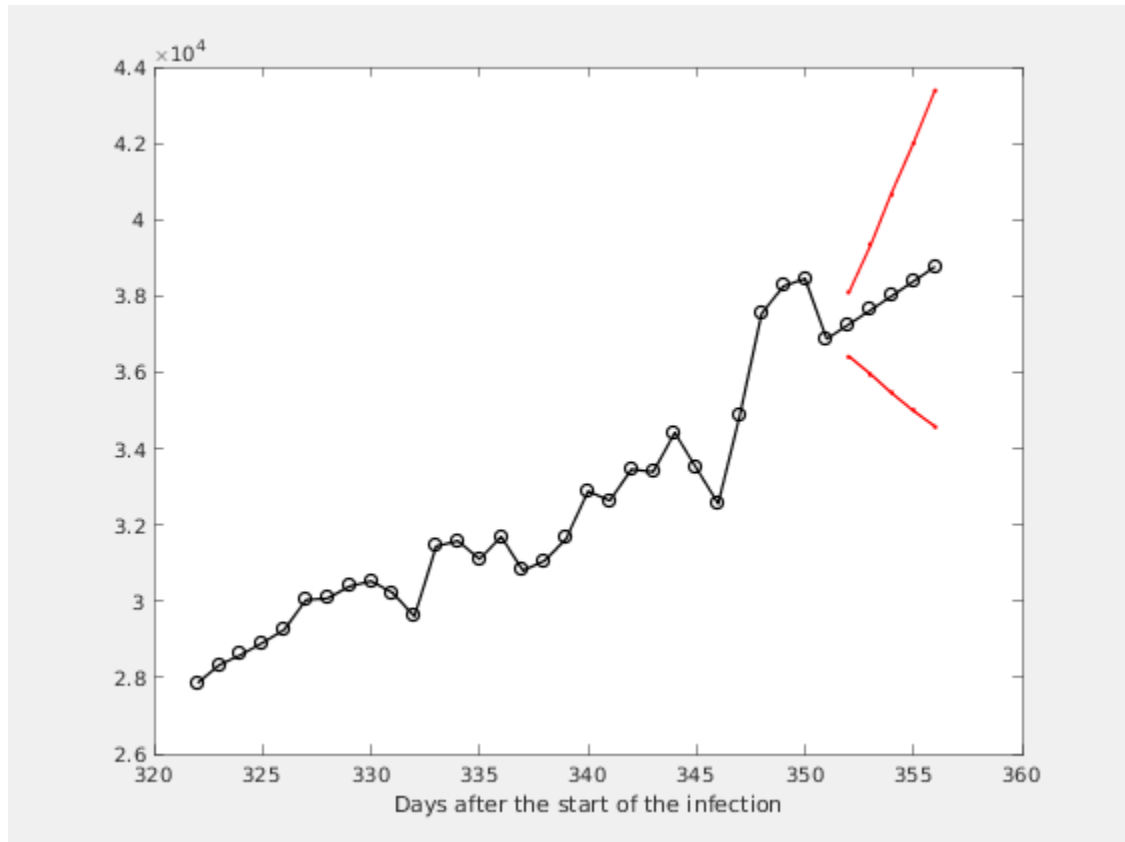


Figure 2.2. Figure

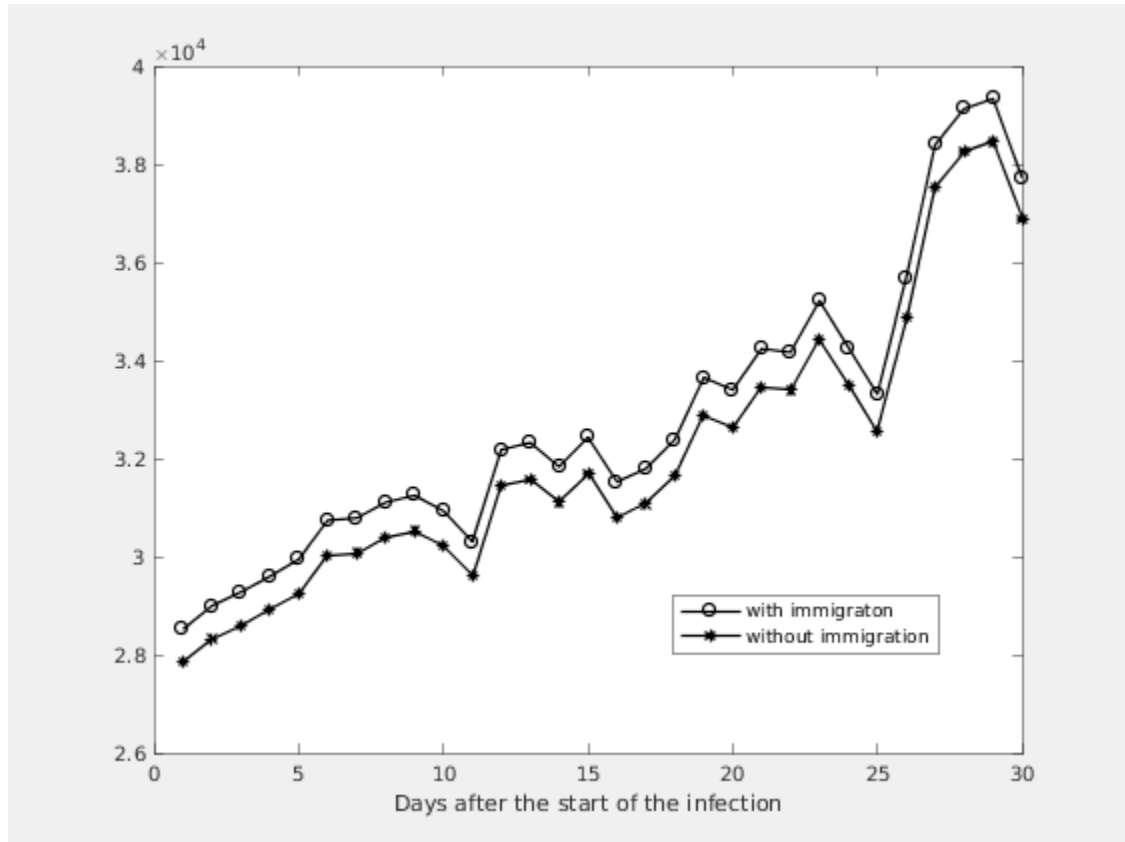




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	$c_i$	alpha	M1	A1
4	1.0095	0.9861 - 1.0328	0.3054	33482	34260
3	1.0119	0.9886 - 1.0351	0.2739	32555	33314
2	1.0121	0.9887 - 1.0355	0.3221	34883	35690
1	1.0119	0.9885 - 1.0353	0.3583	37539	38400
0	1.0101	0.9868 - 1.0333	0.3616	38255	39131