

20 March 2020

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# COVID-19 Projections

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Didier Darcet

# COVID-19 Cases' Projection Method

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At the beginning, epidemic processes are exponential by nature, in other words, the number of cases of infection accelerates.

Making projections therefore requires to capture the derivative of the acceleration, named 'the jolt' by mathematicians.

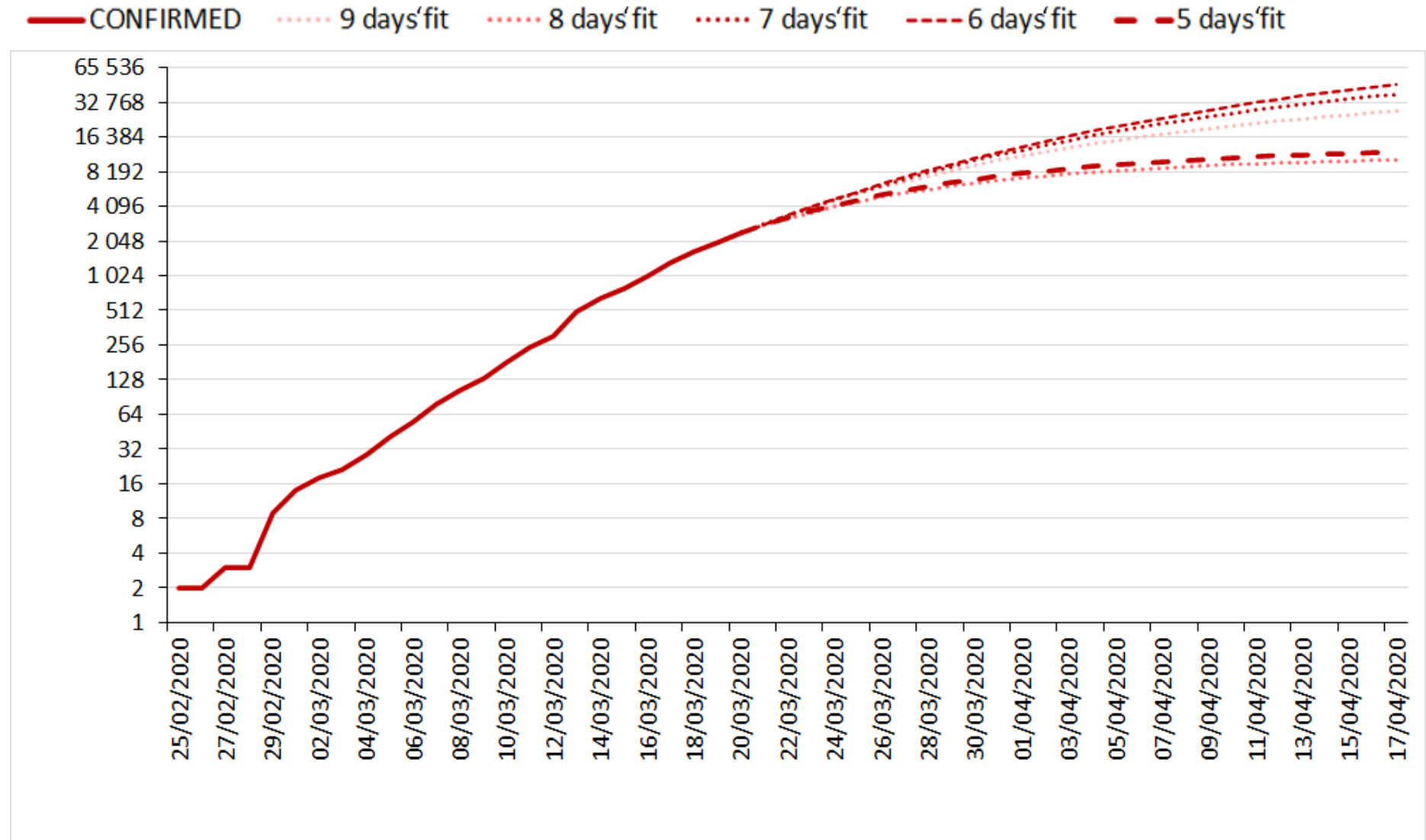
In the following projections, we fit the accelerating or fading nature of the jolt, and project its dynamics over the subsequent four weeks.

The jolt is fitted with an exponential function over, respectively, the previous 5, 6, 7, 8 and 9 days. Large numbers are truncated to facilitate the reading of the charts.

Fitting over various windows provides an information on the most recent dynamics of the COVID-19 diffusion. The thicker dotted red line is the shortest trend, i.e. calculated over the previous five days.

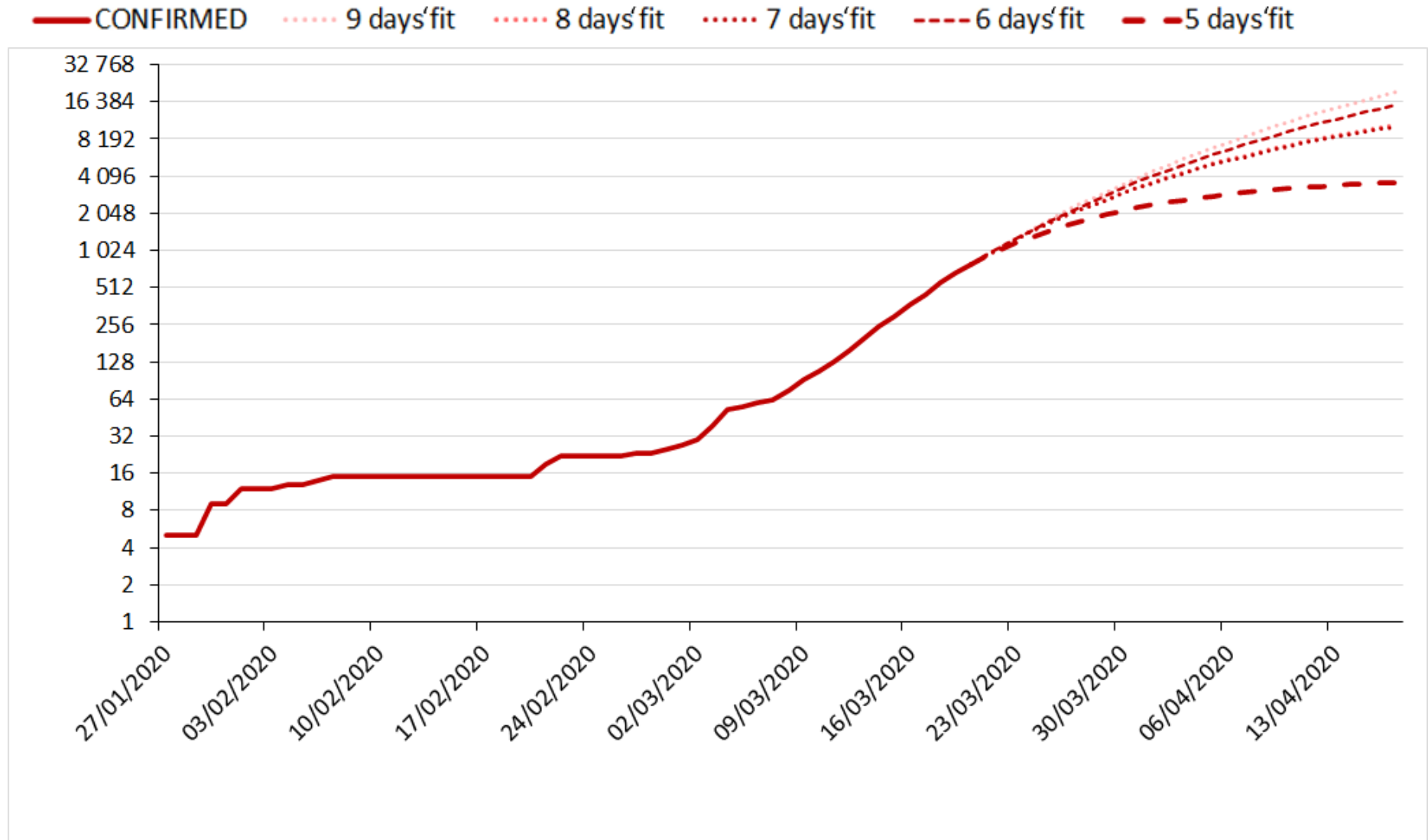
During the early days of an epidemic, projections can be extremely volatile, and it is therefore recommended not to draw black-and-white conclusions from a daily report, but to follow the evolution over many days.

# Austria



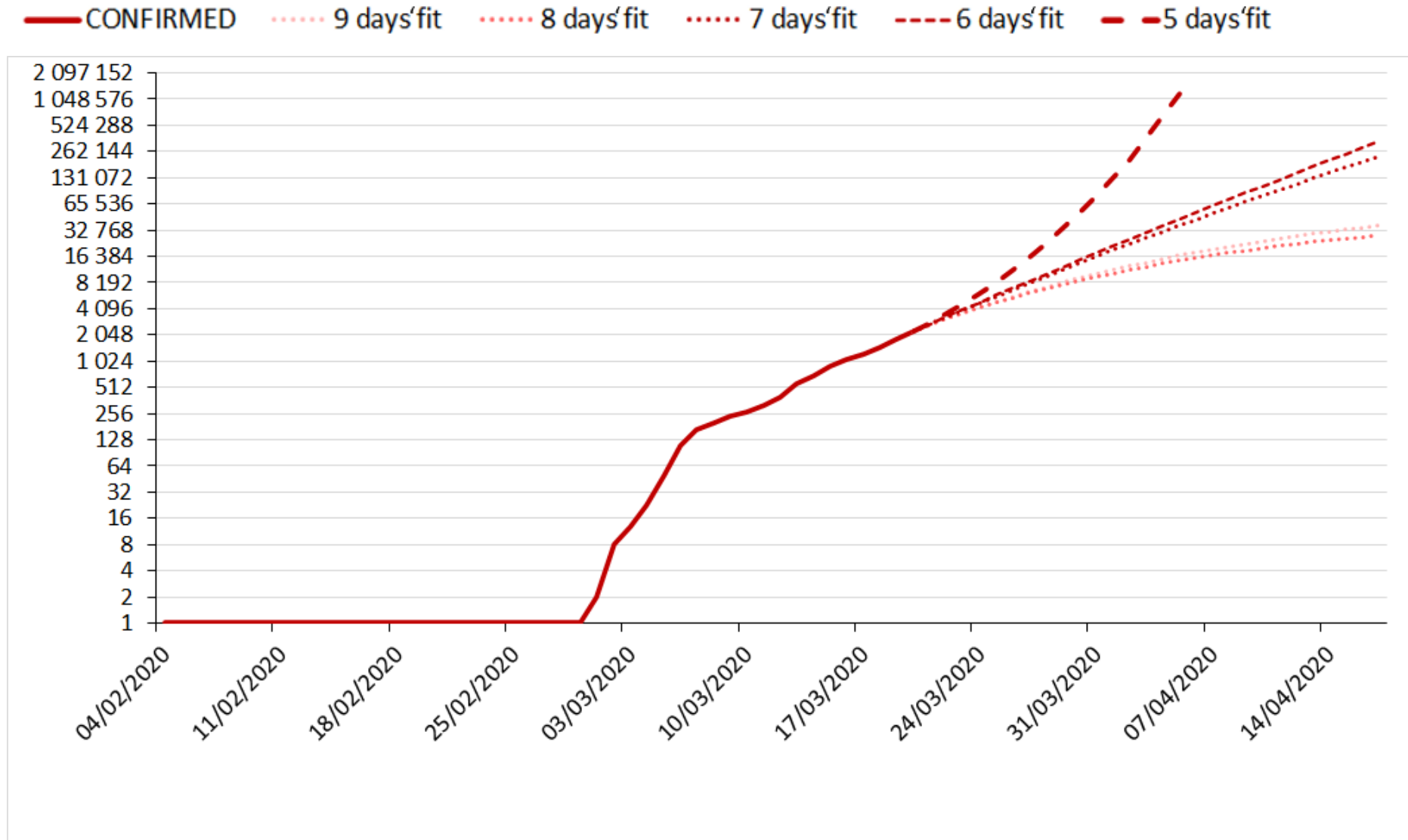
Data: The Johns Hopkins University, Politolog.com

# Australia



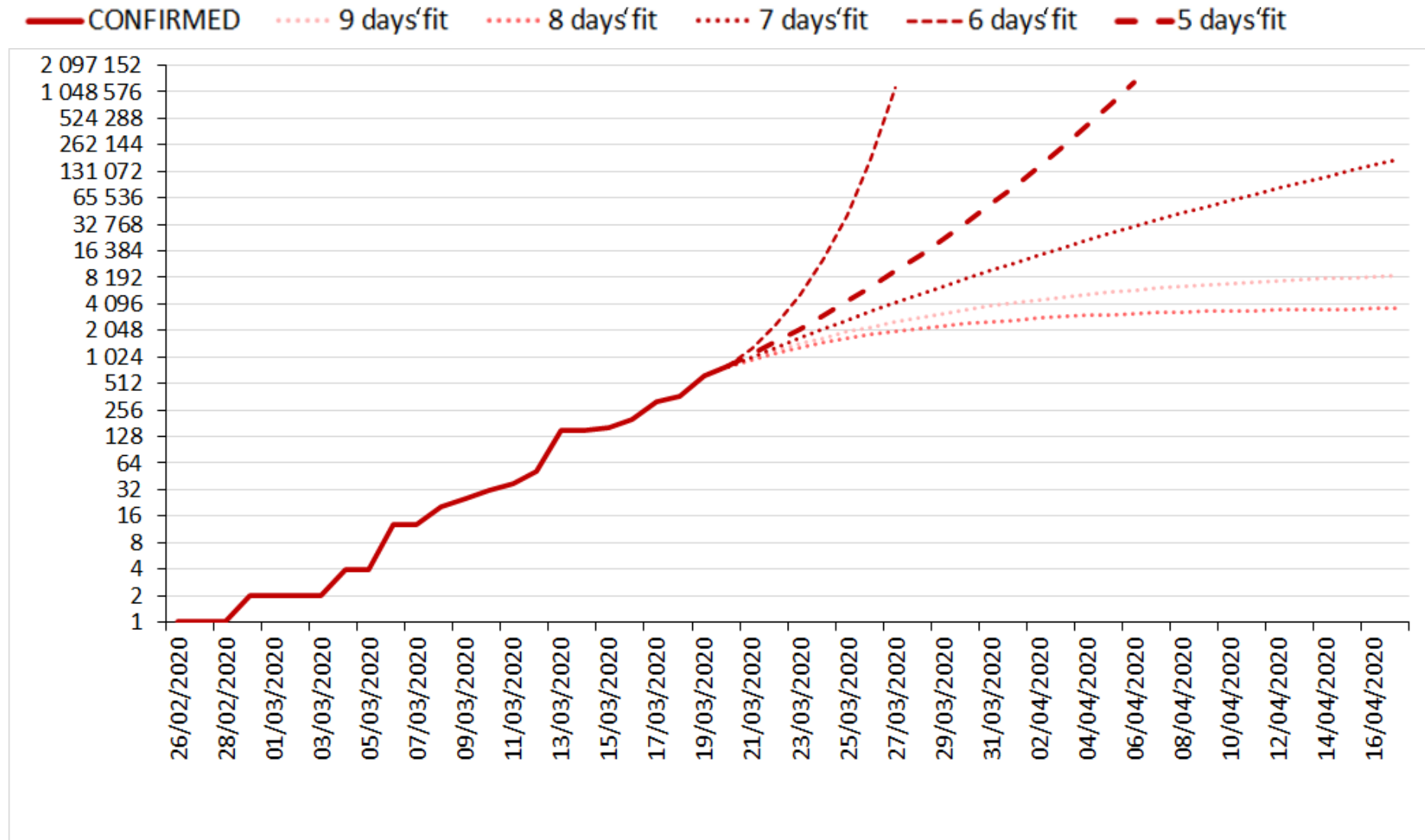
Data: The Johns Hopkins University, Politolog.com

# Belgium



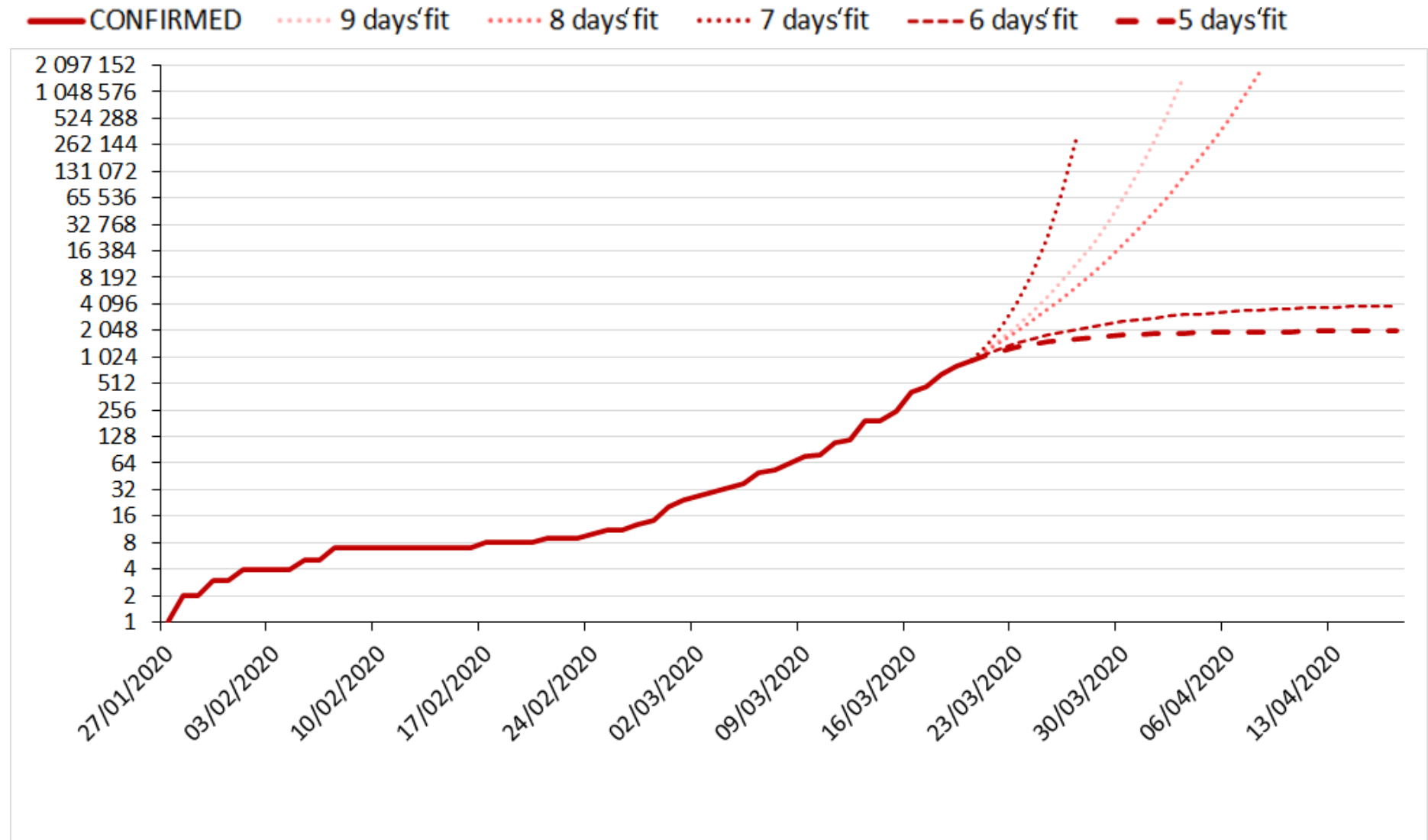
Data: The Johns Hopkins University, Politolog.com

# Brazil



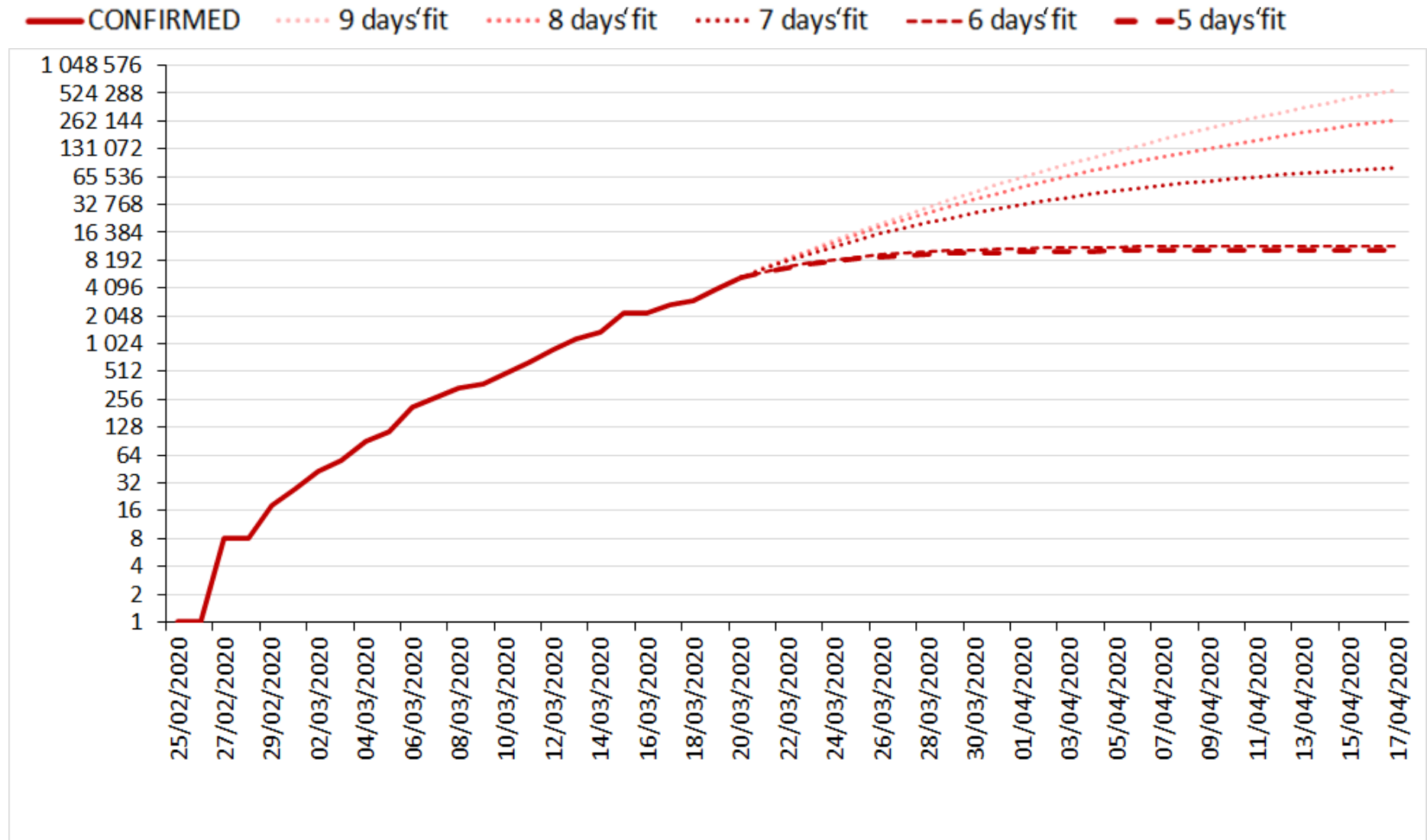
Data: The Johns Hopkins University, Politolog.com

# Canada



Data: The Johns Hopkins University, Politolog.com

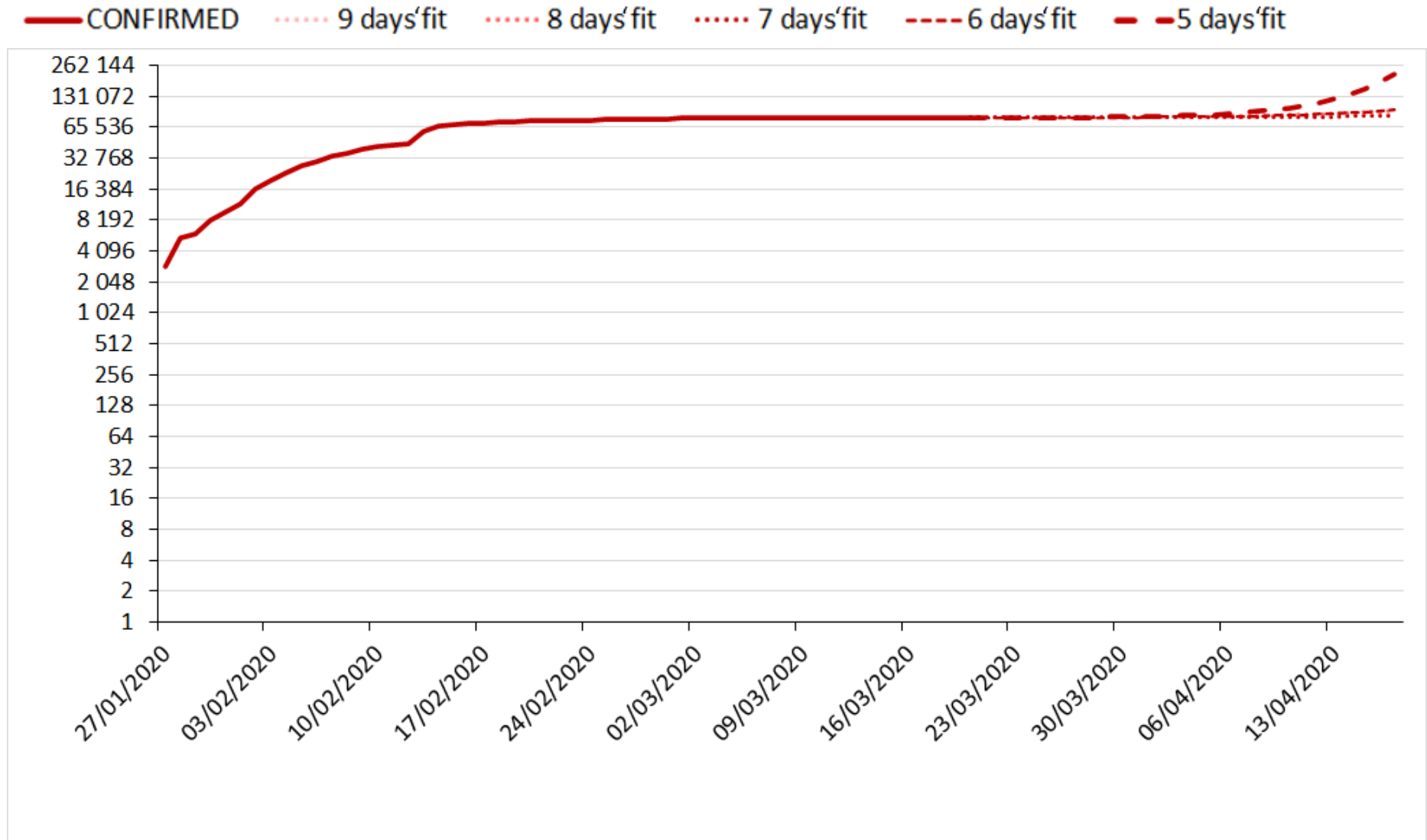
# Switzerland



Data: The Johns Hopkins University, Politolog.com

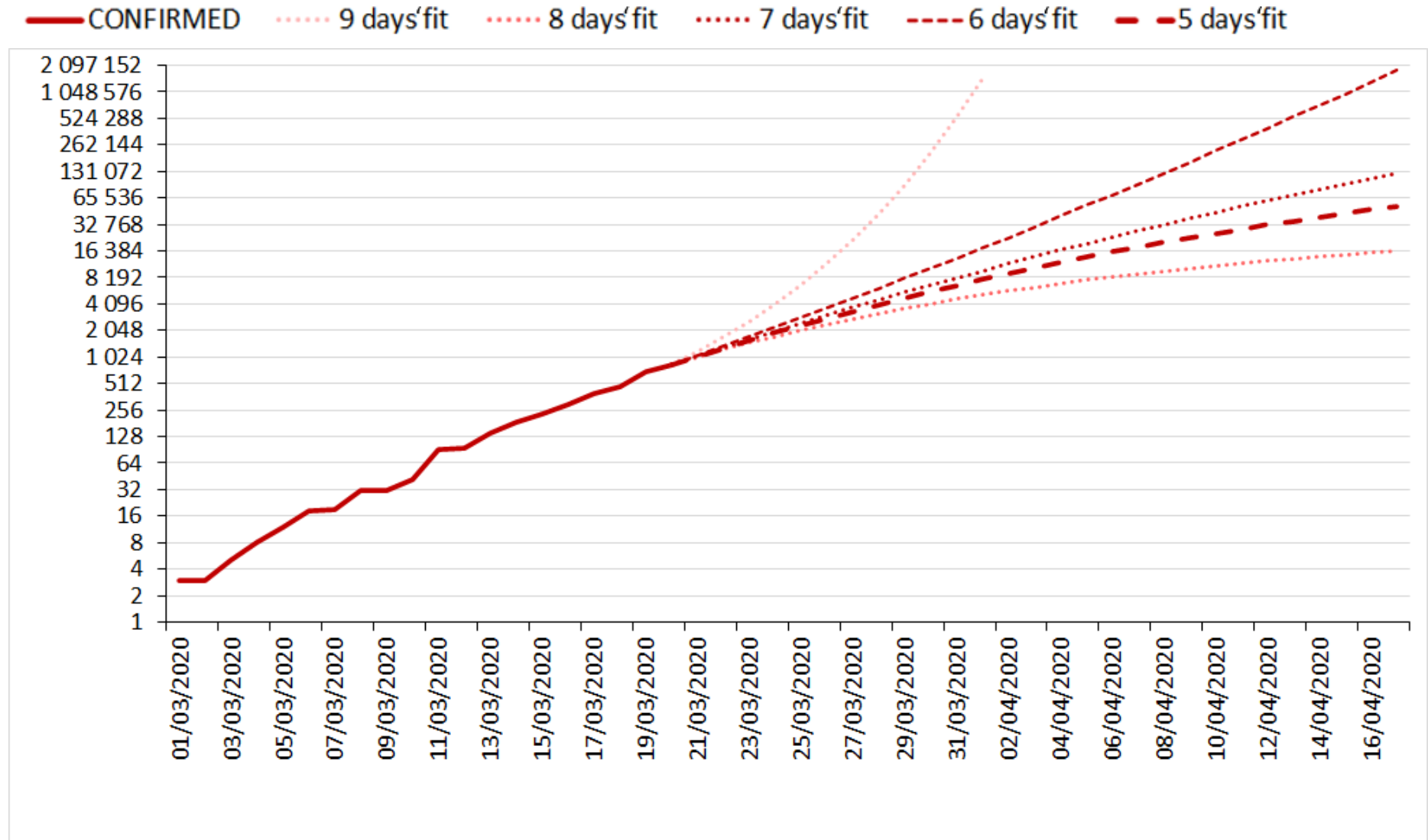


# China



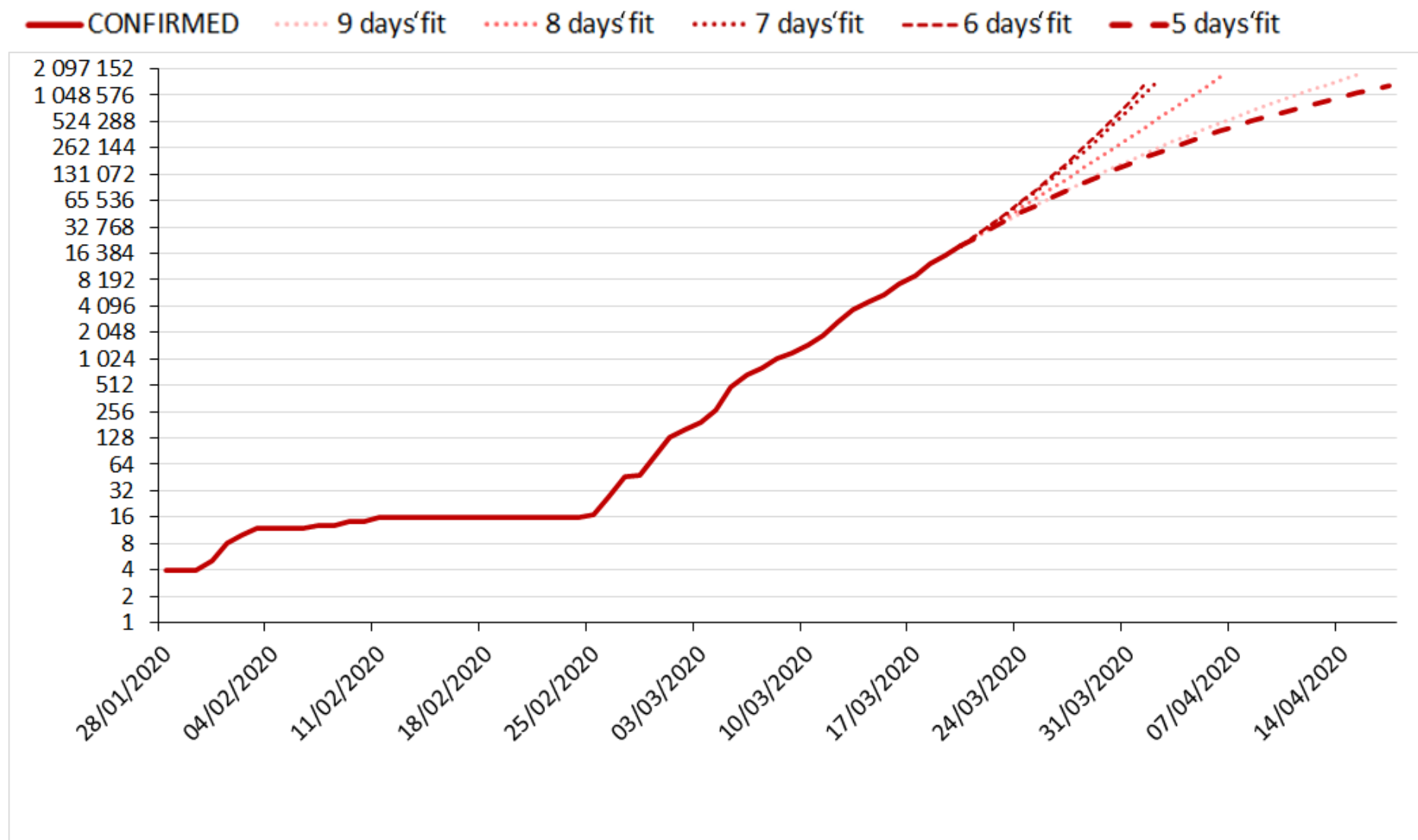
Data: The Johns Hopkins University, Politolog.com

# Czech Republic



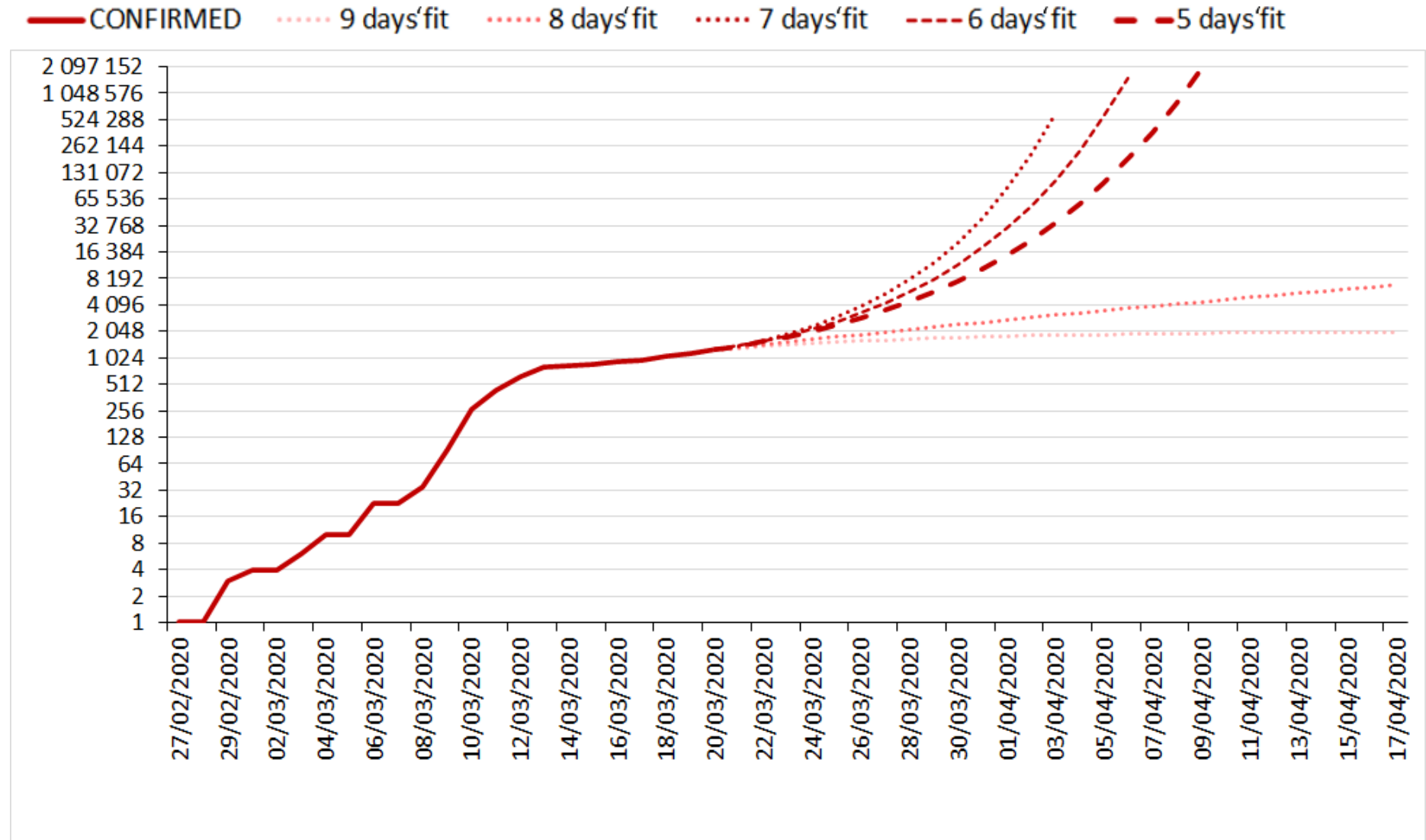
Data: The Johns Hopkins University, Politolog.com

# Germany



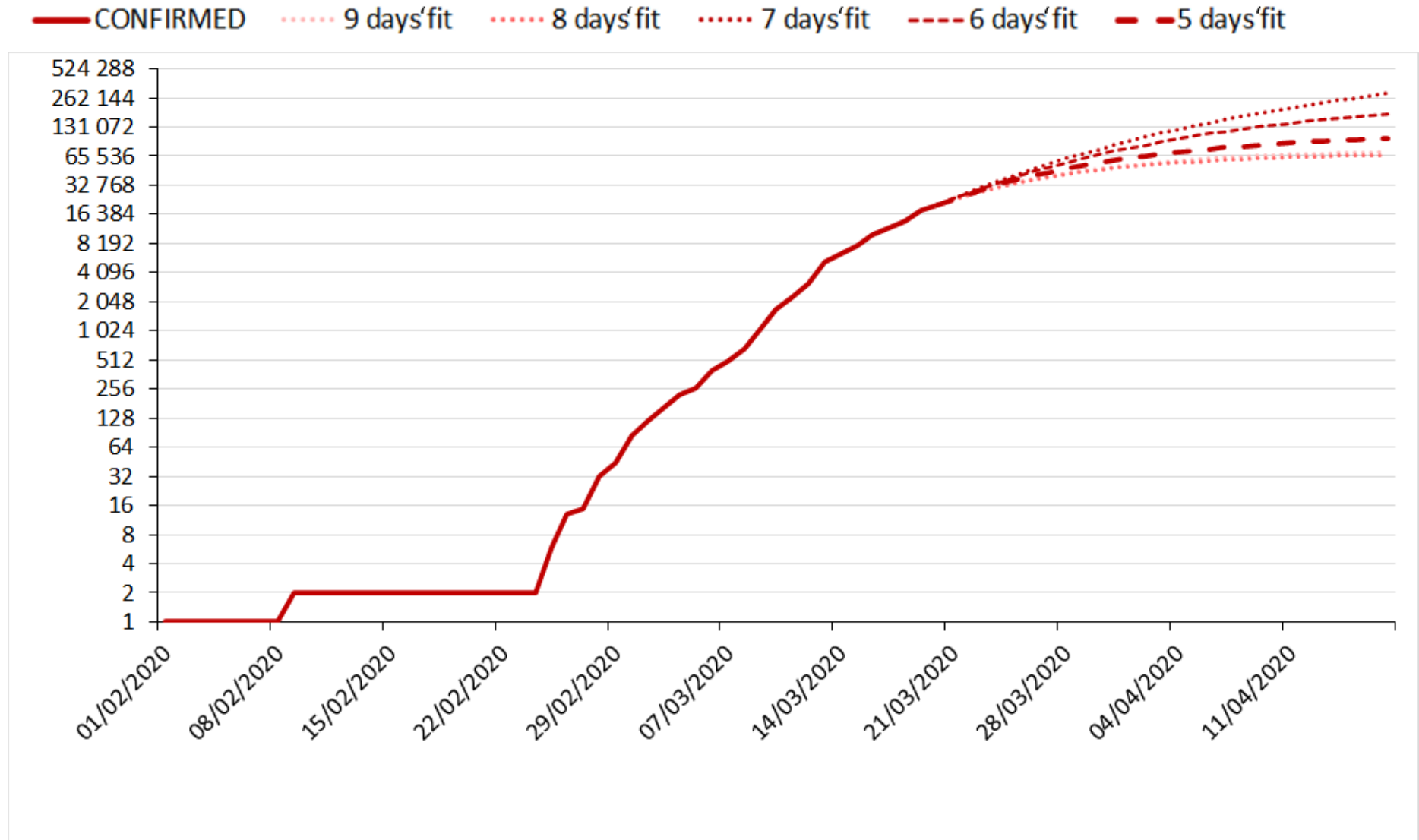
Data: The Johns Hopkins University, Politolog.com

# Denmark



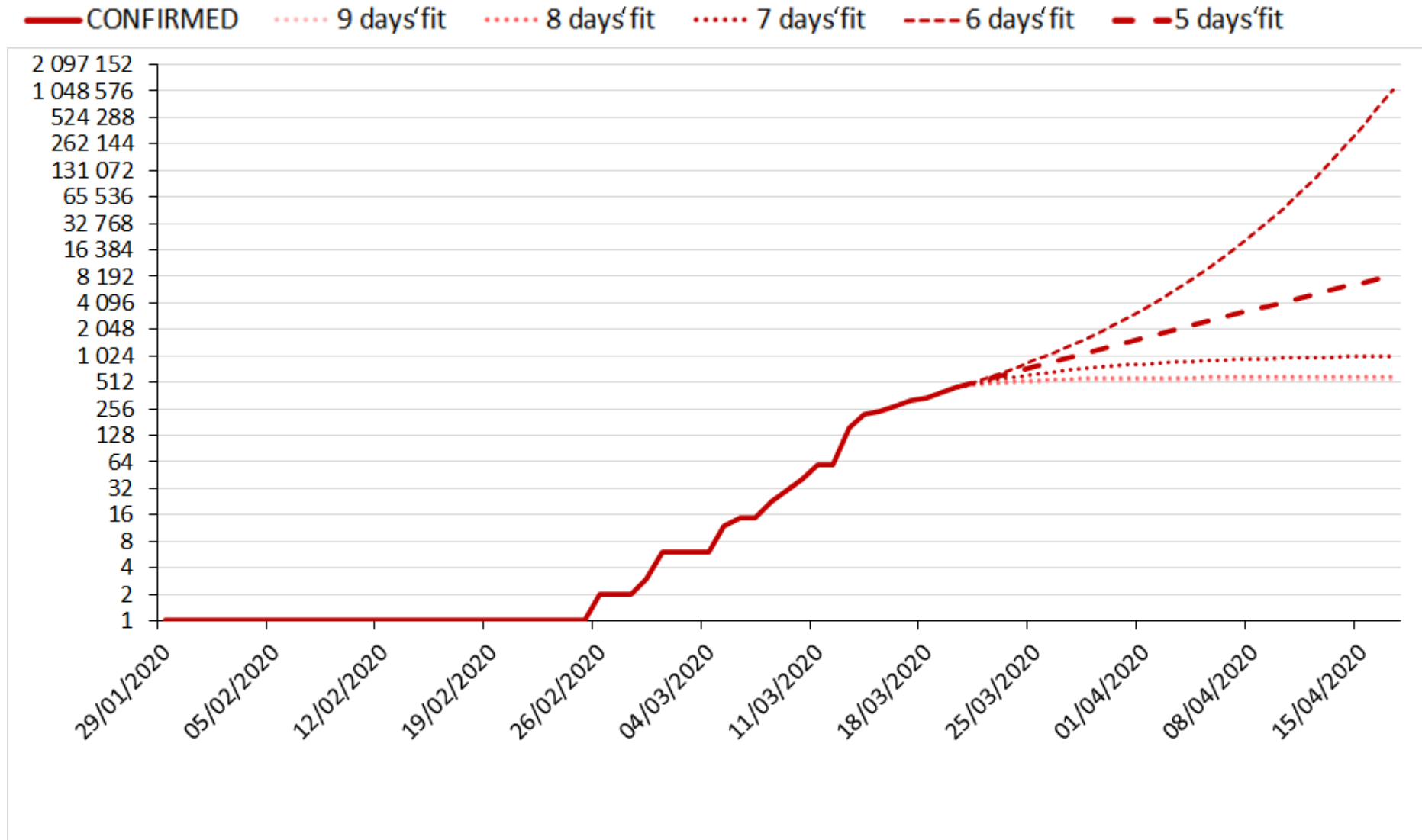
Data: The Johns Hopkins University, Politolog.com

# Spain



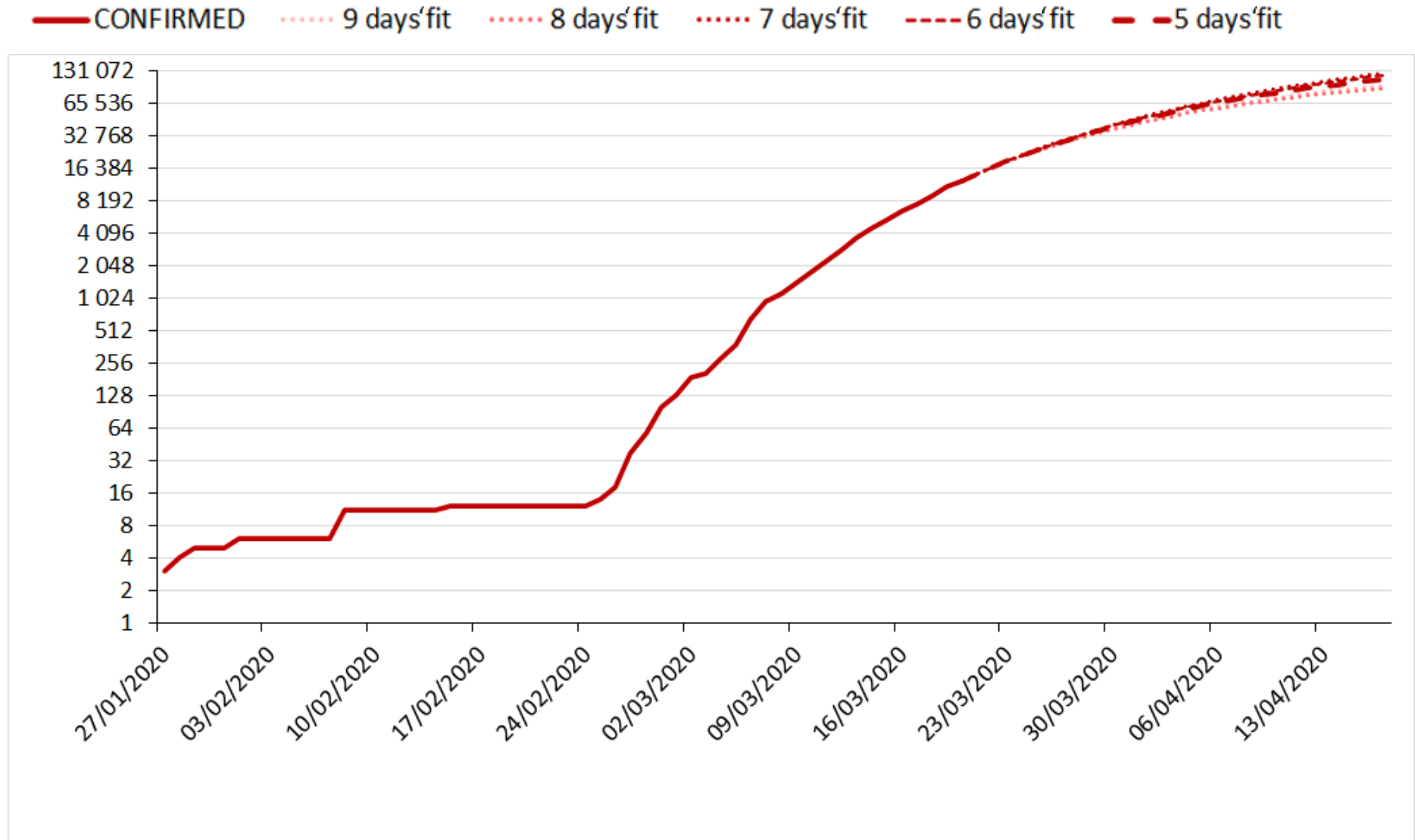
Data: The Johns Hopkins University, Politolog.com

# Finland



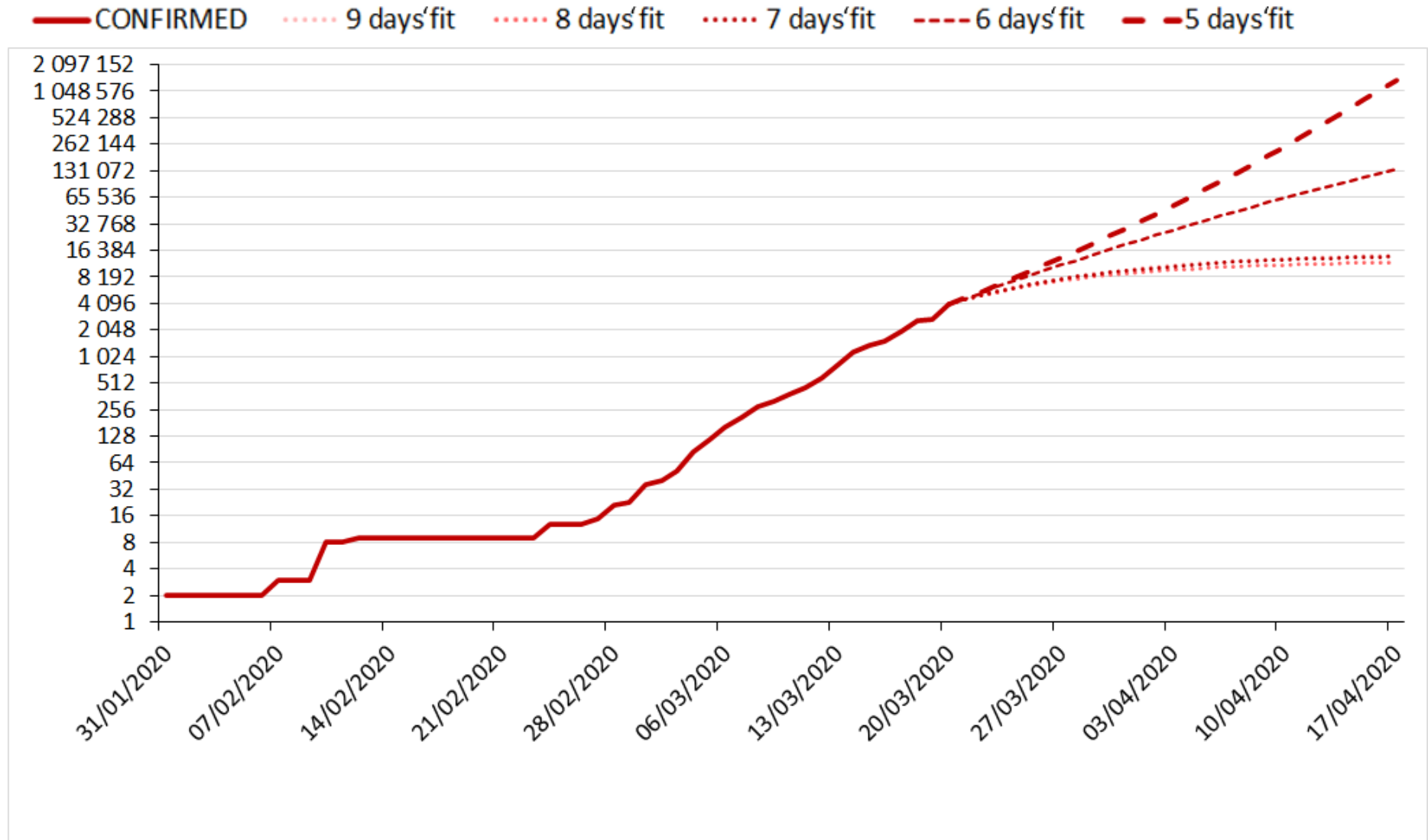
Data: The Johns Hopkins University, Politolog.com

# France



Data: The Johns Hopkins University, Politolog.com

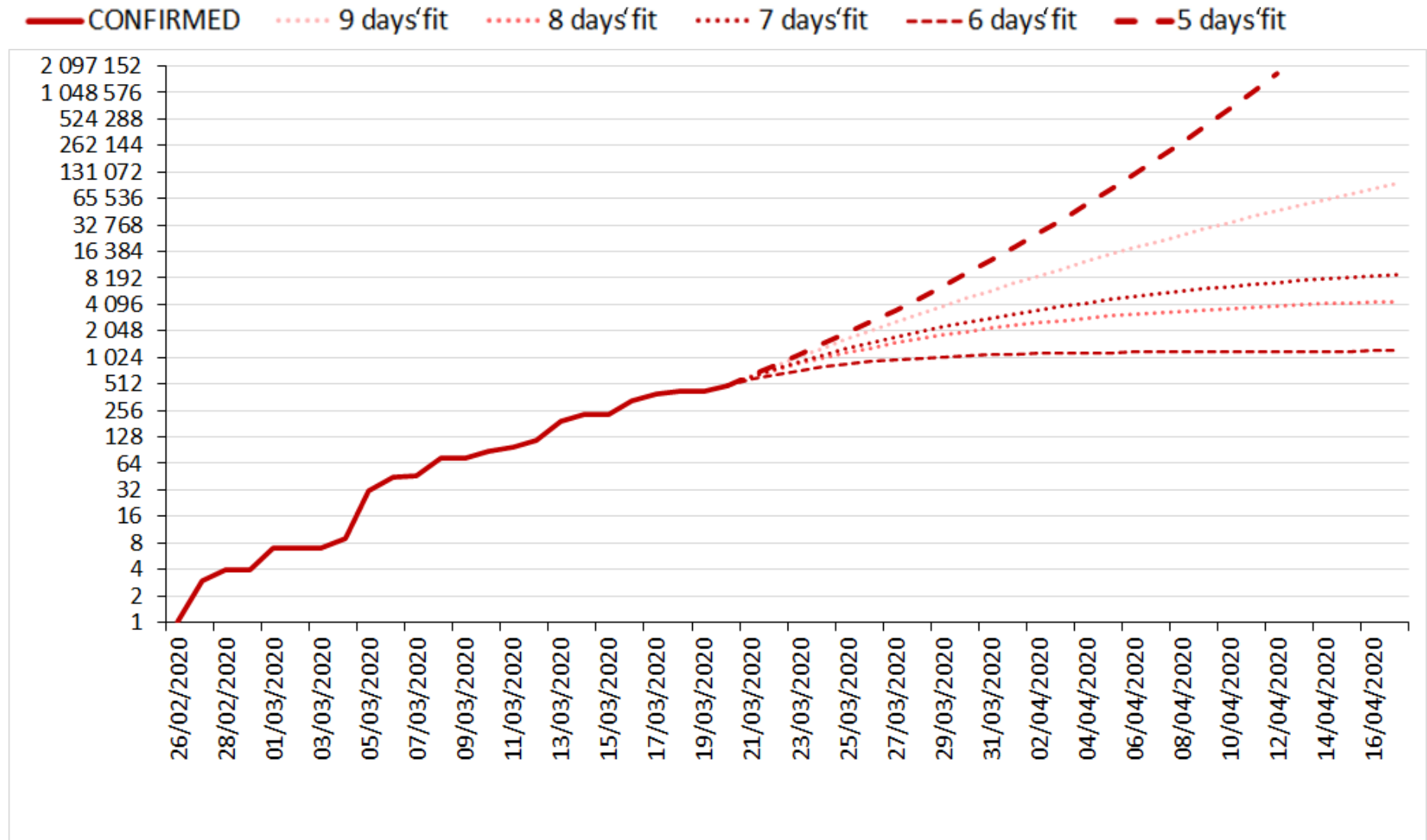
# United Kingdom



Data: The Johns Hopkins University, Politolog.com

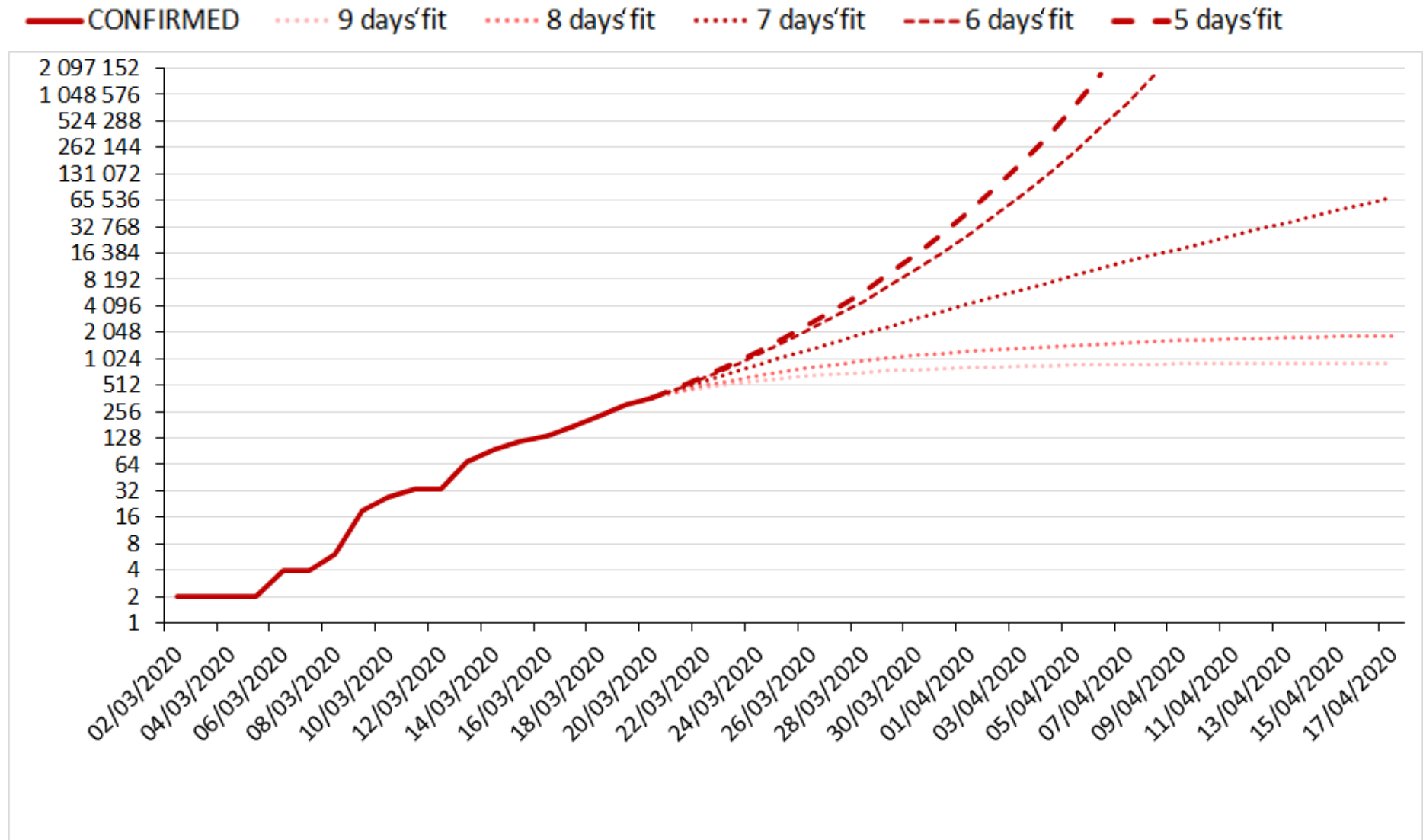


# Greece



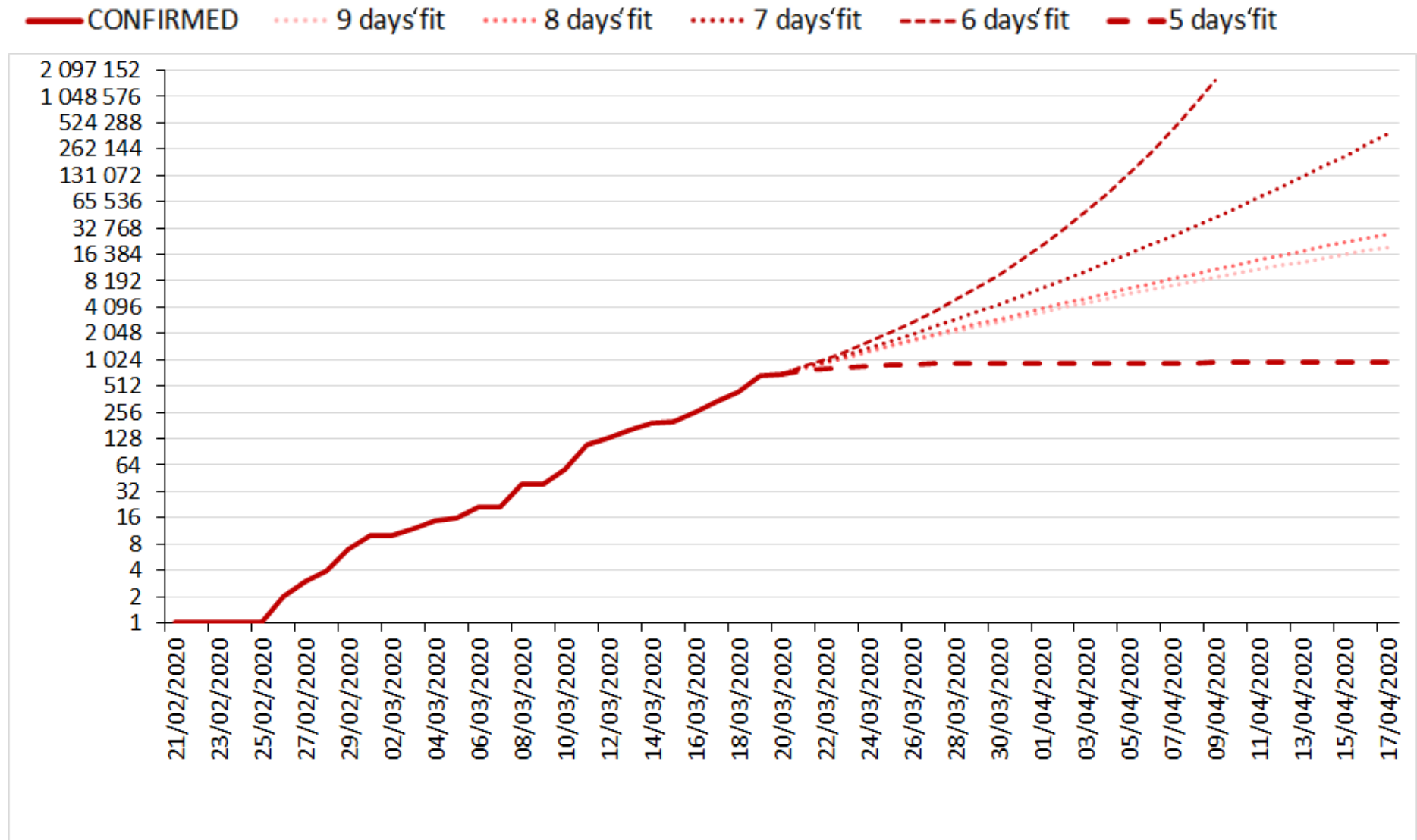
Data: The Johns Hopkins University, Politolog.com

# Indonesia



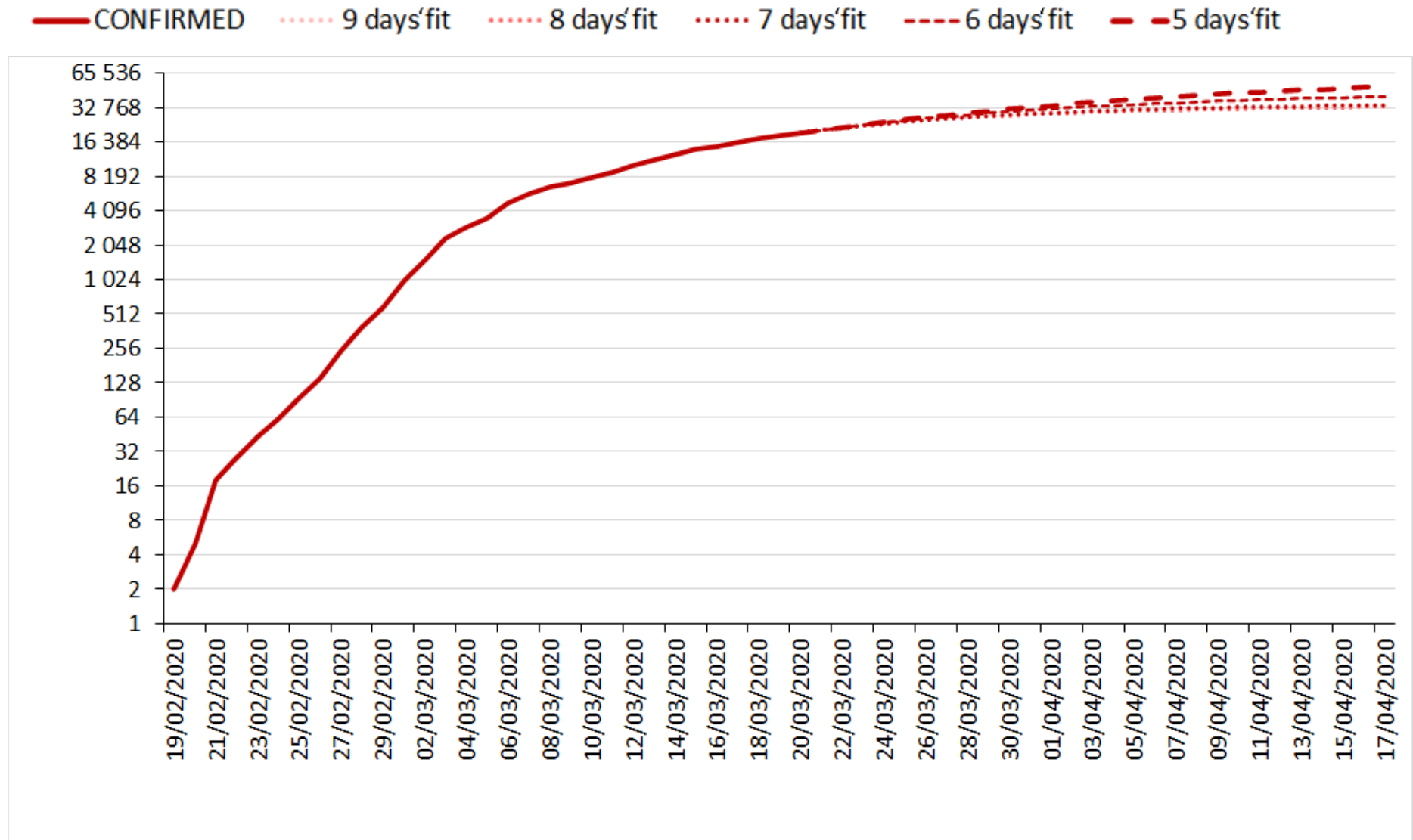
Data: The Johns Hopkins University, Politolog.com

# Israel



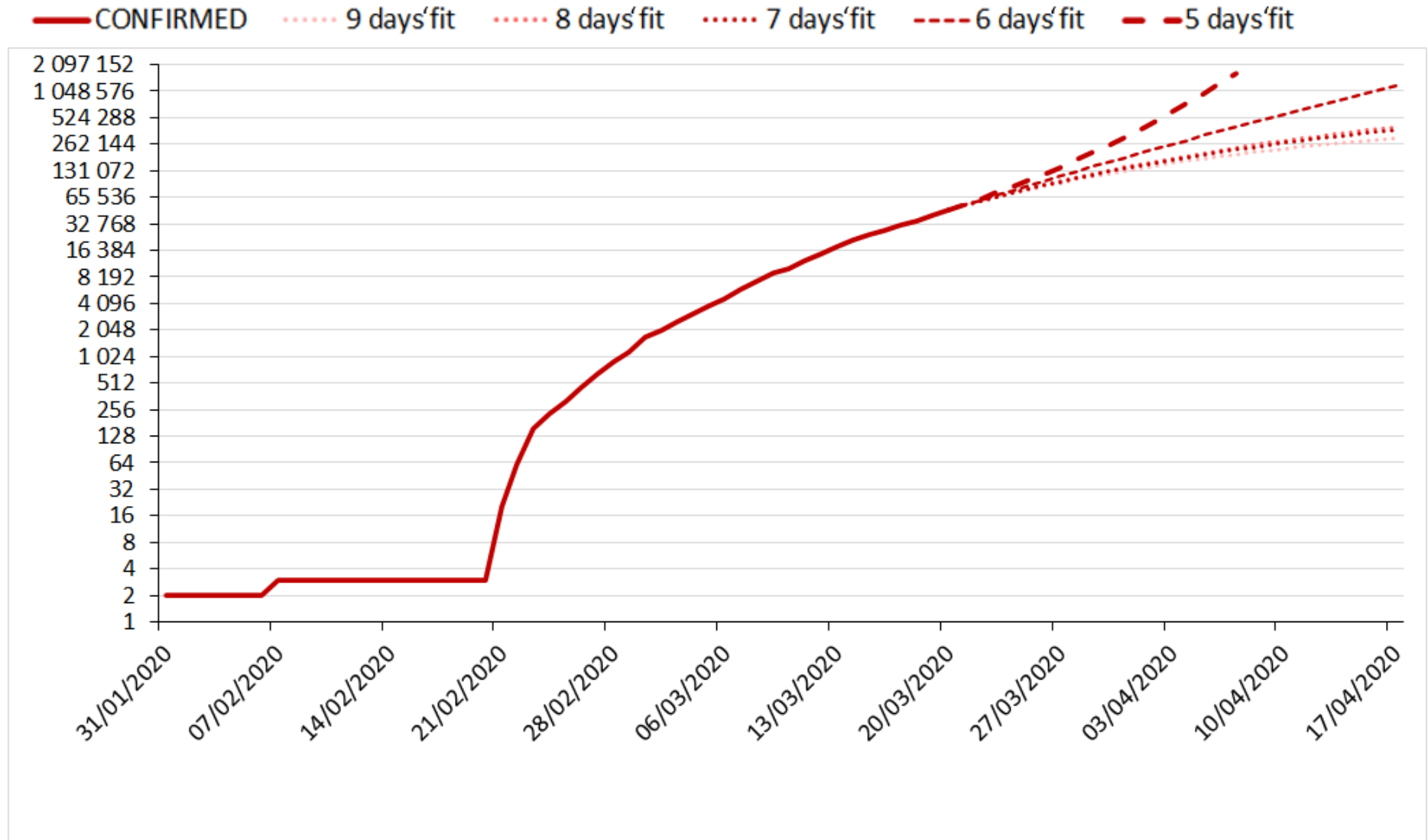
Data: The Johns Hopkins University, Politolog.com

# Iran



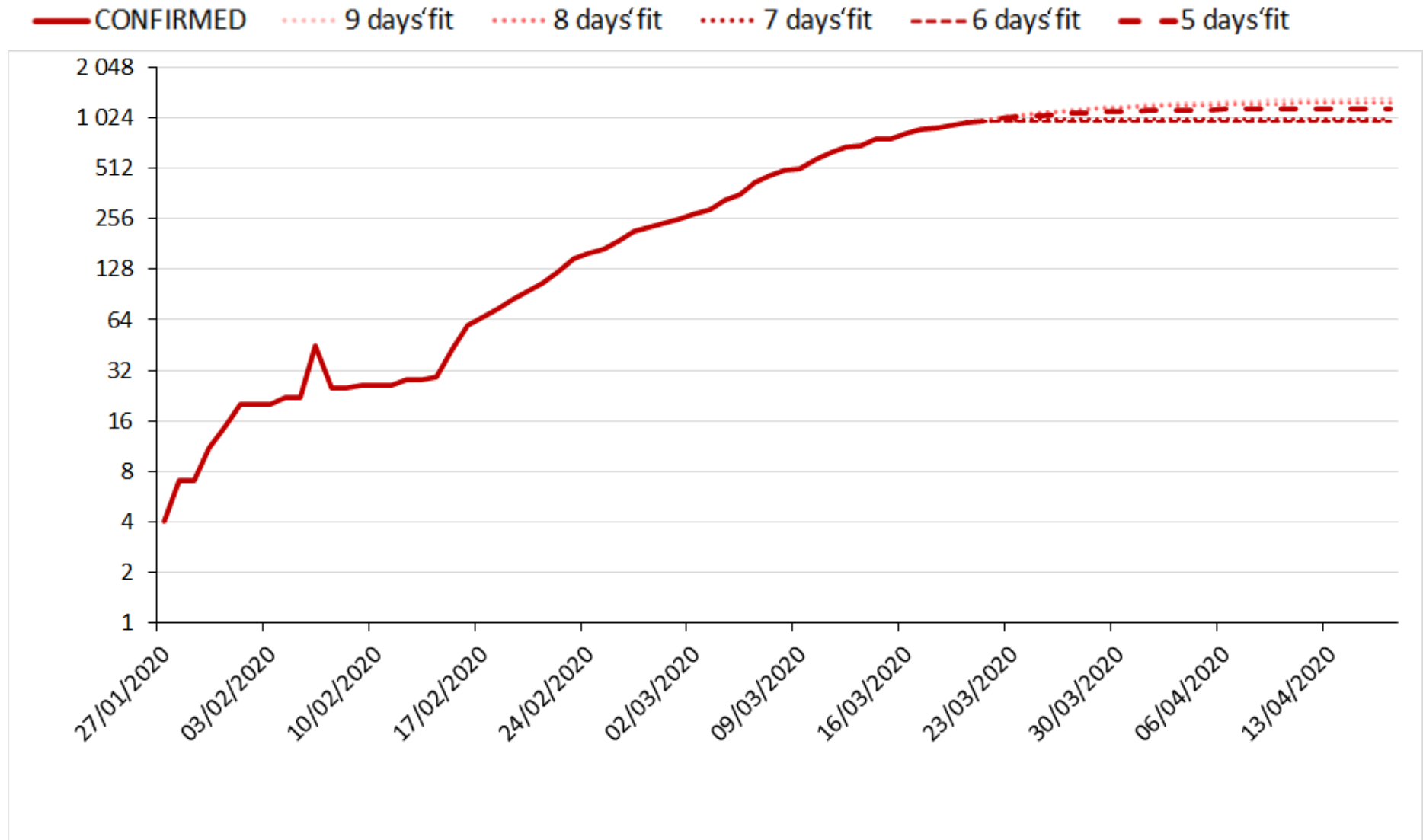
Data: The Johns Hopkins University, Politolog.com

# Italy



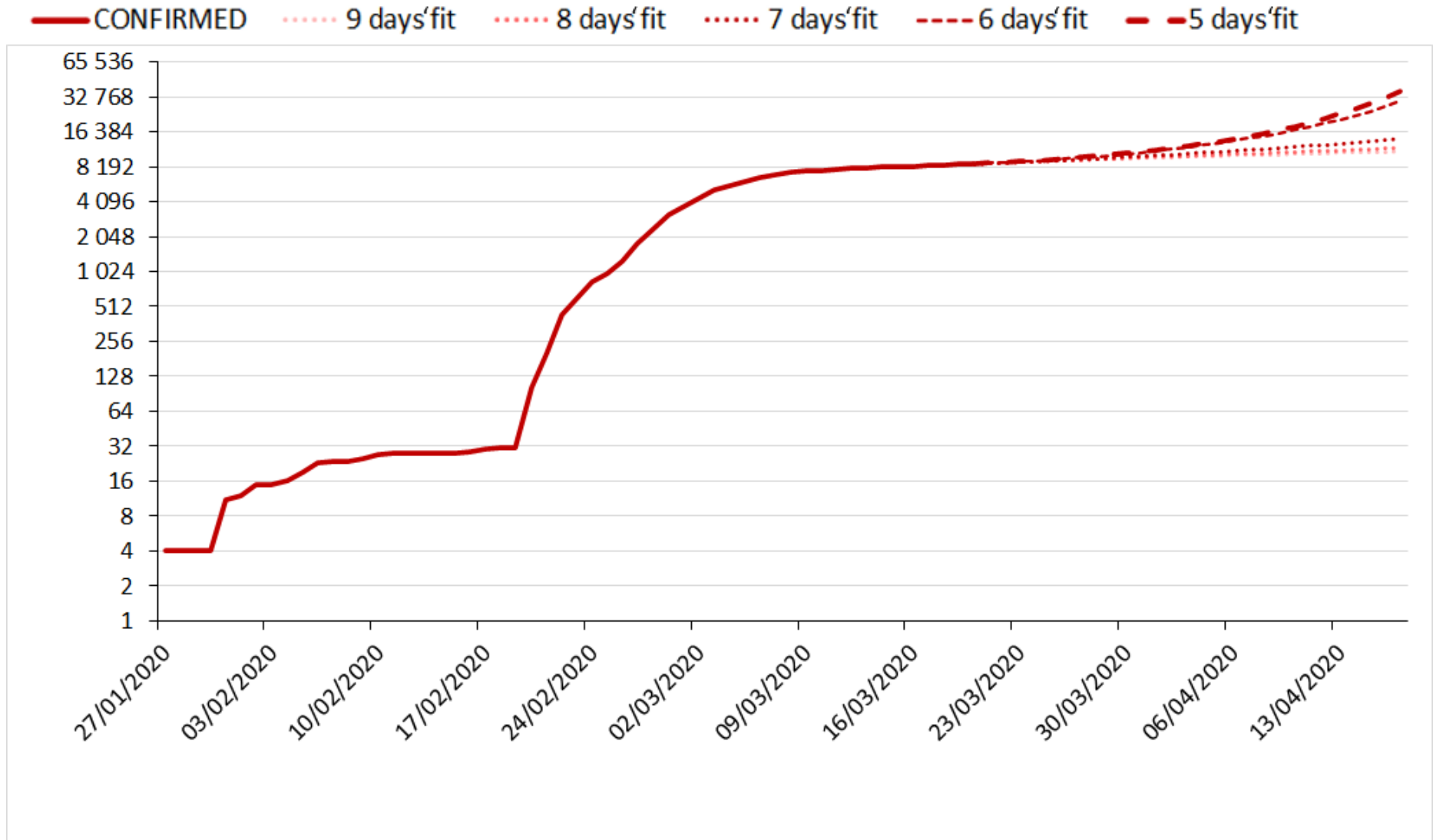
Data: The Johns Hopkins University, Politolog.com

# Japan



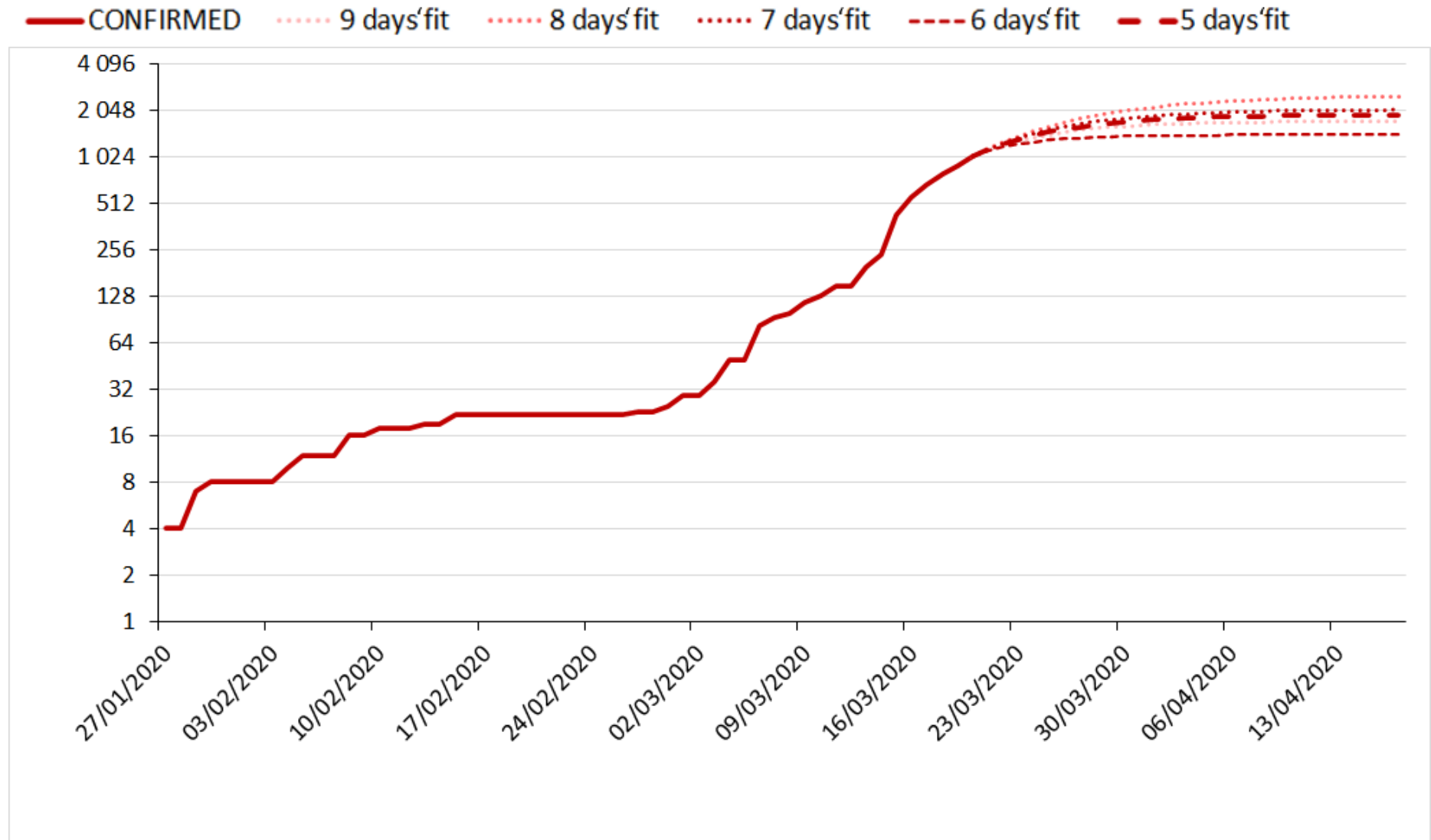
Data: The Johns Hopkins University, Politolog.com

# South Korea



Data: The Johns Hopkins University, Politolog.com

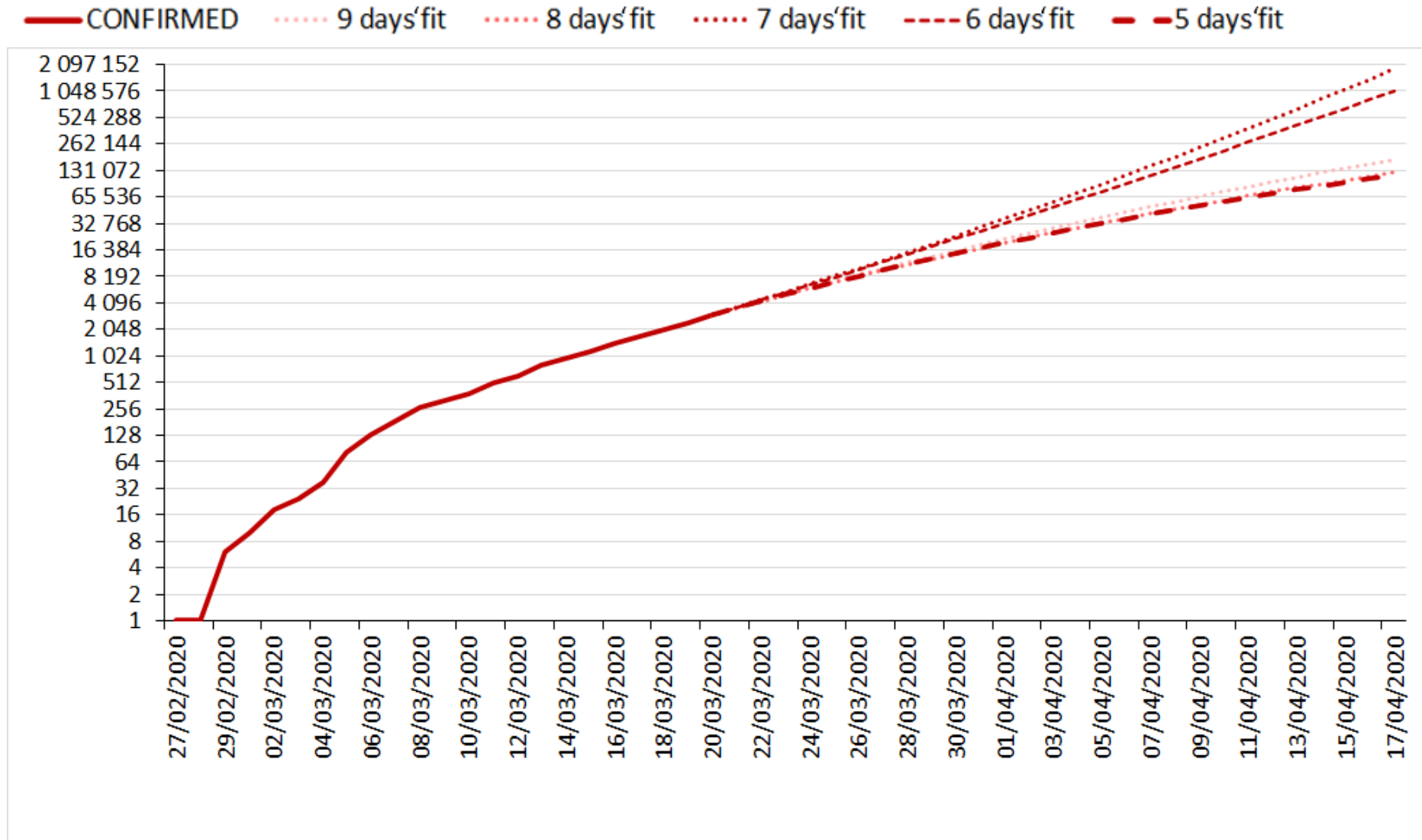
# Malaysia



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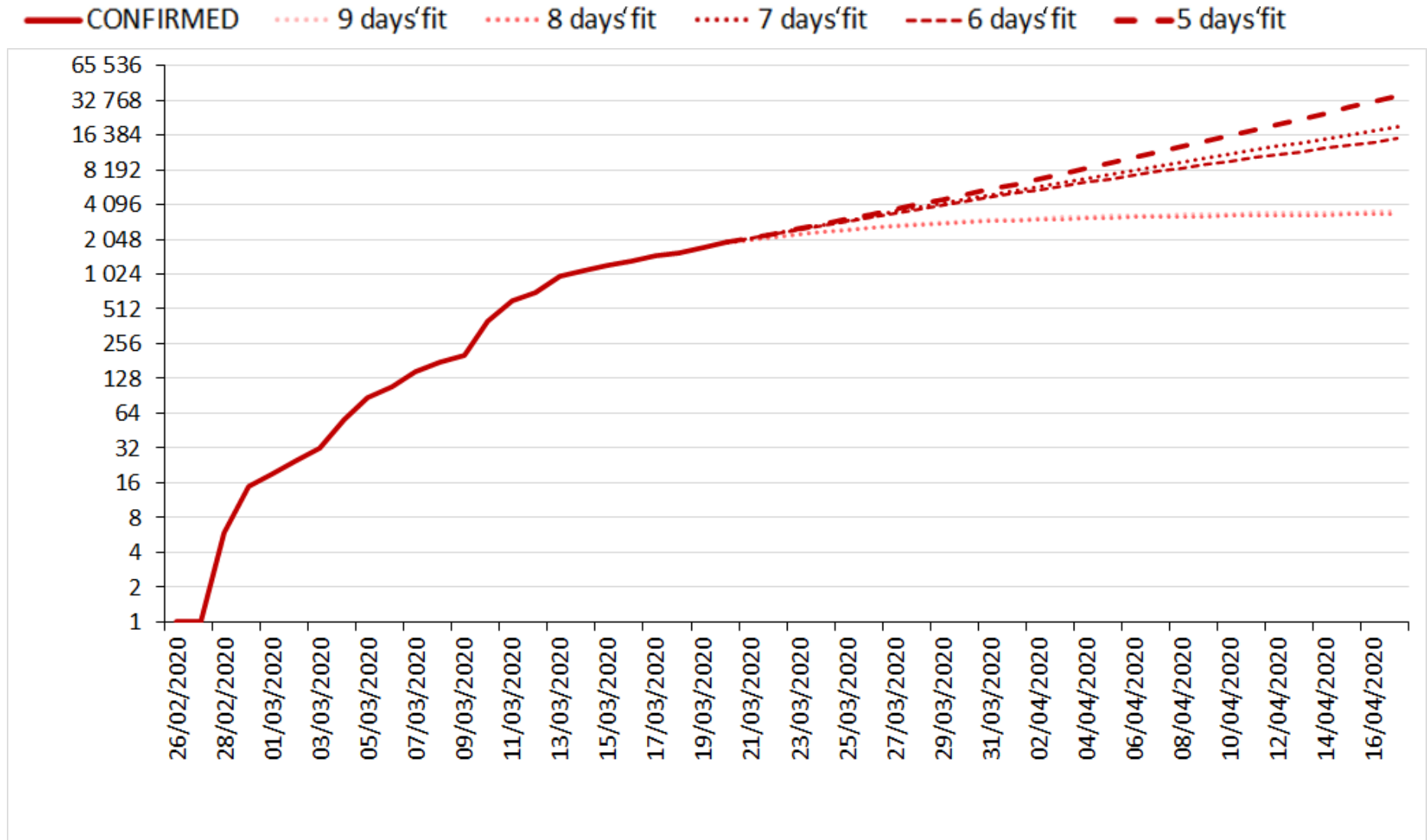


# Netherlands



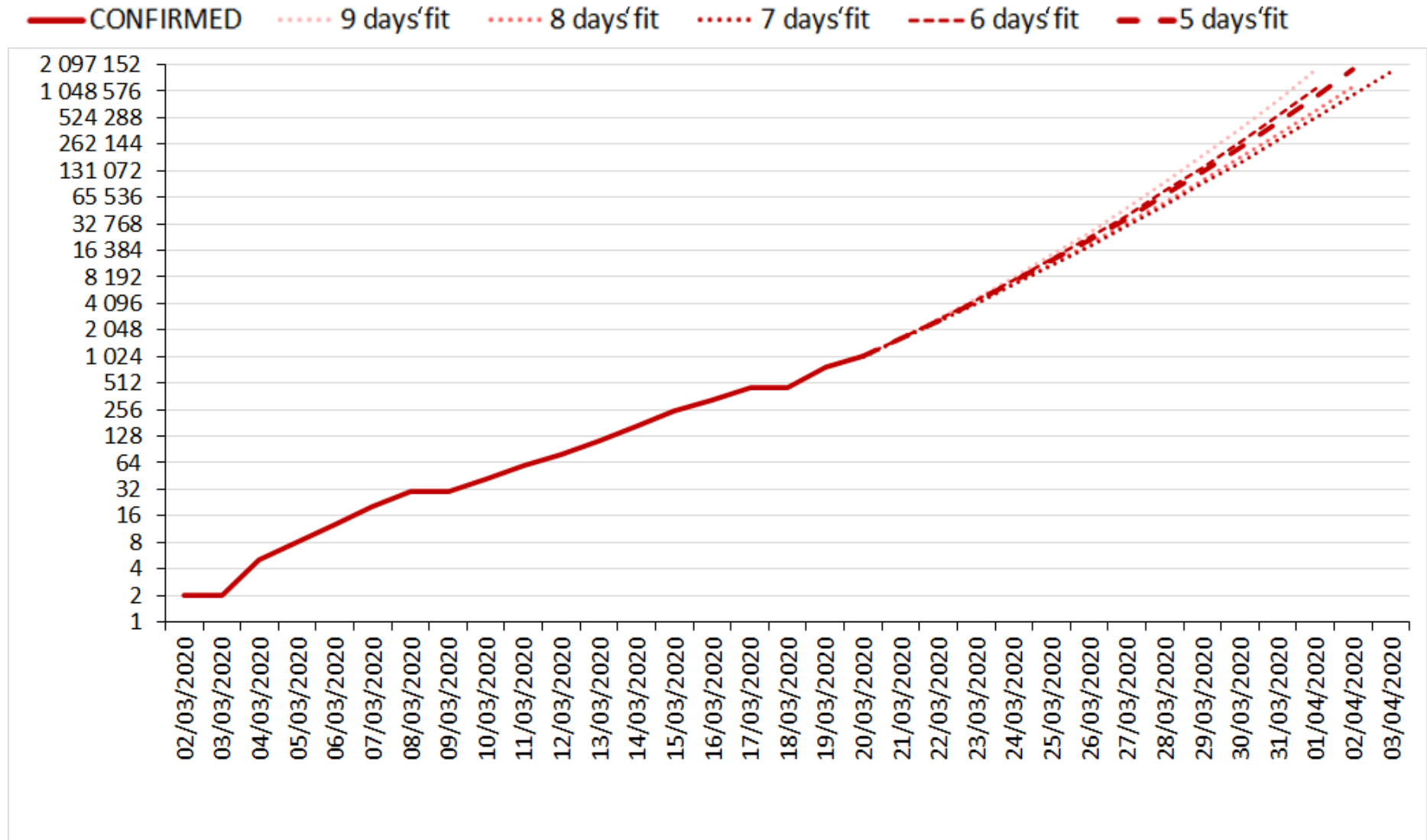
Data: The Johns Hopkins University, Politolog.com

# Norway



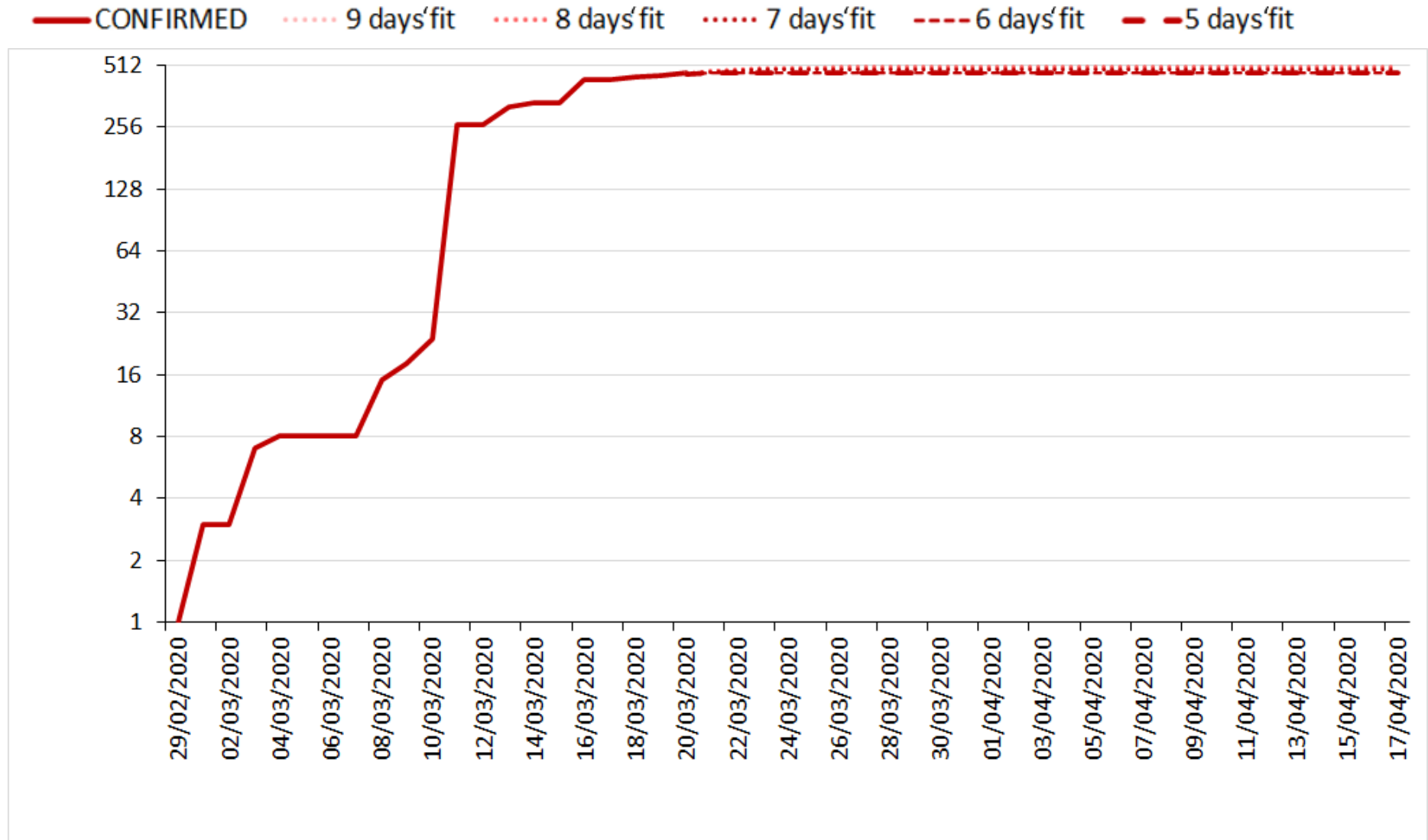
Data: The Johns Hopkins University, Politolog.com

# Portugal



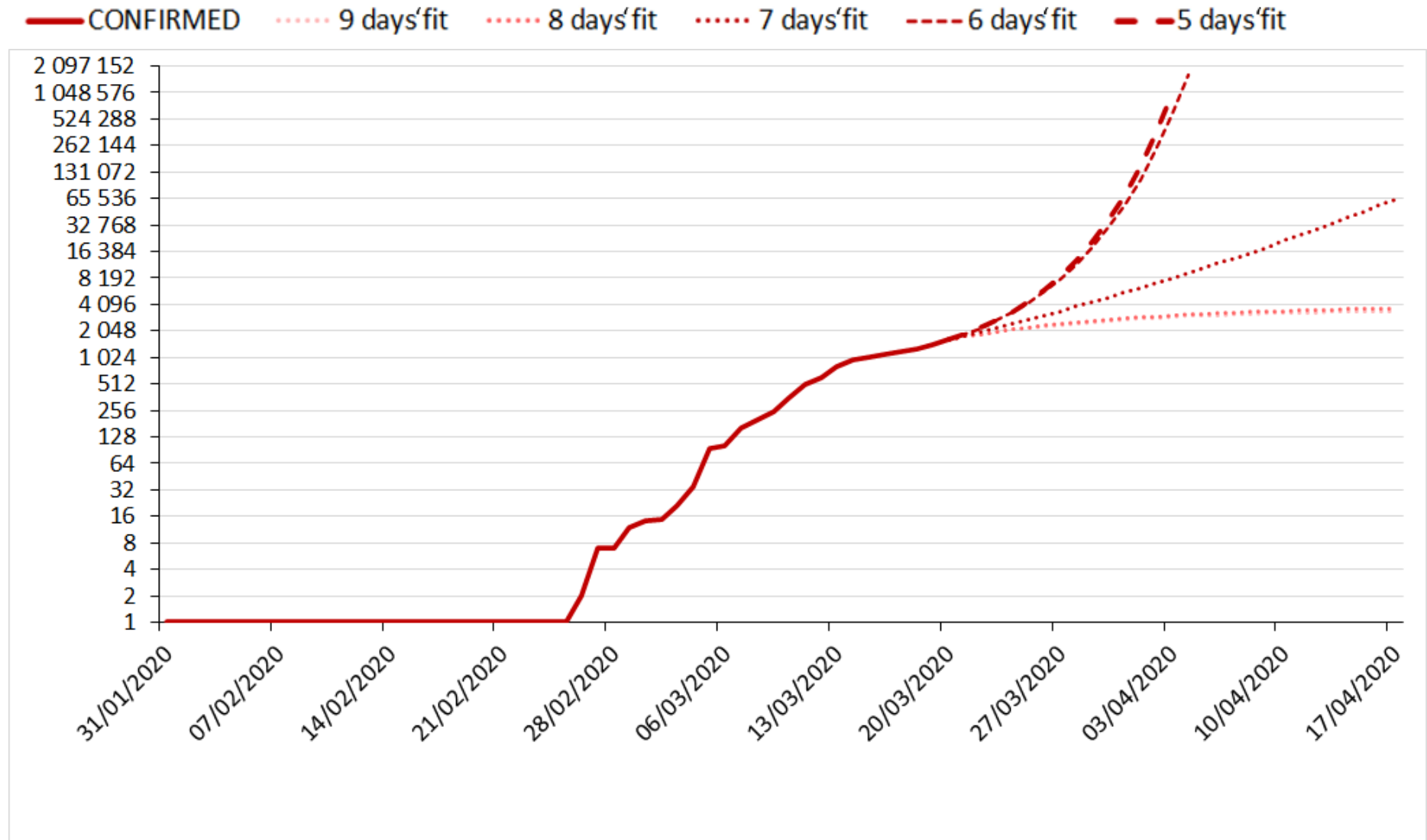
Data: The Johns Hopkins University, Politolog.com

# Qatar



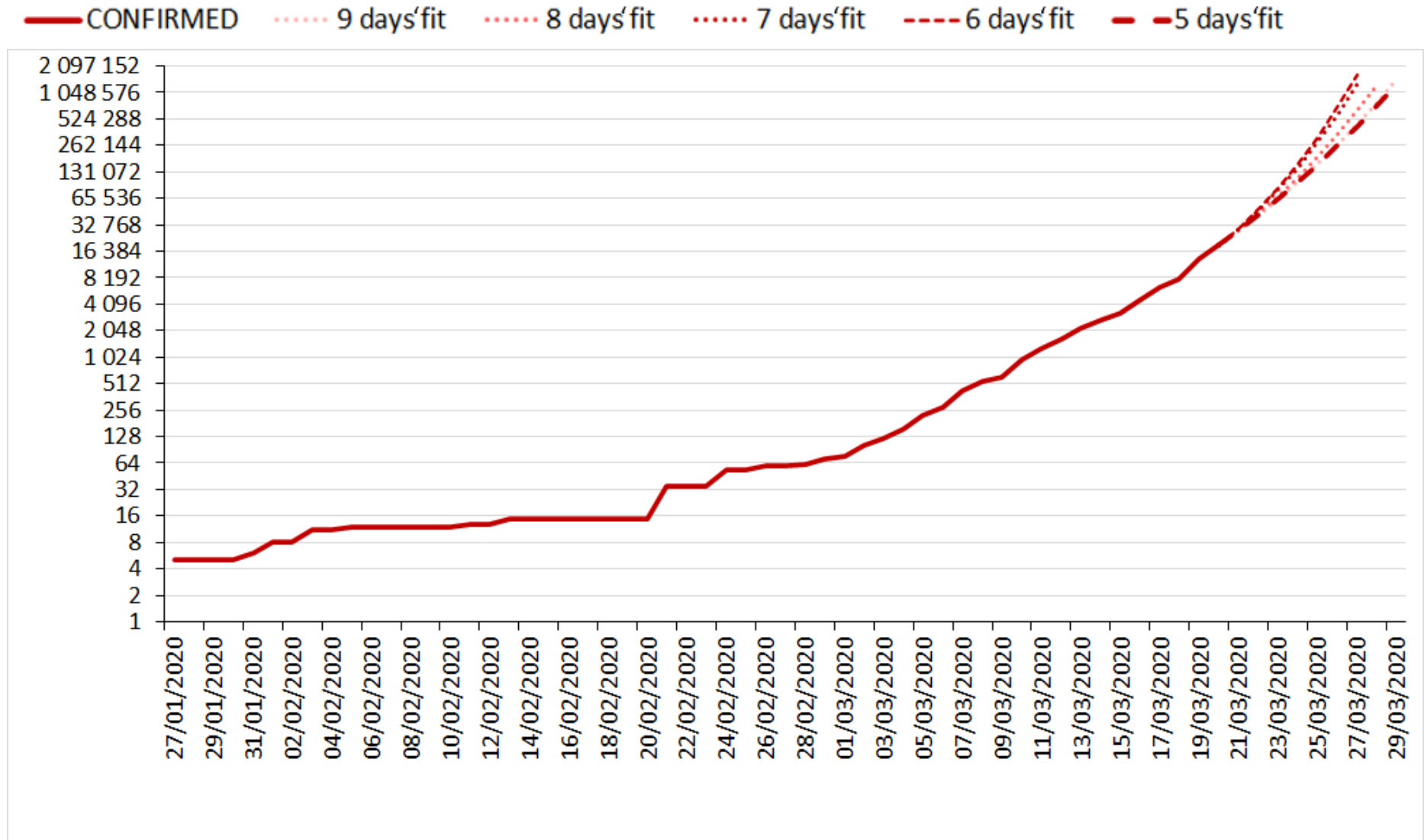
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# Sweden



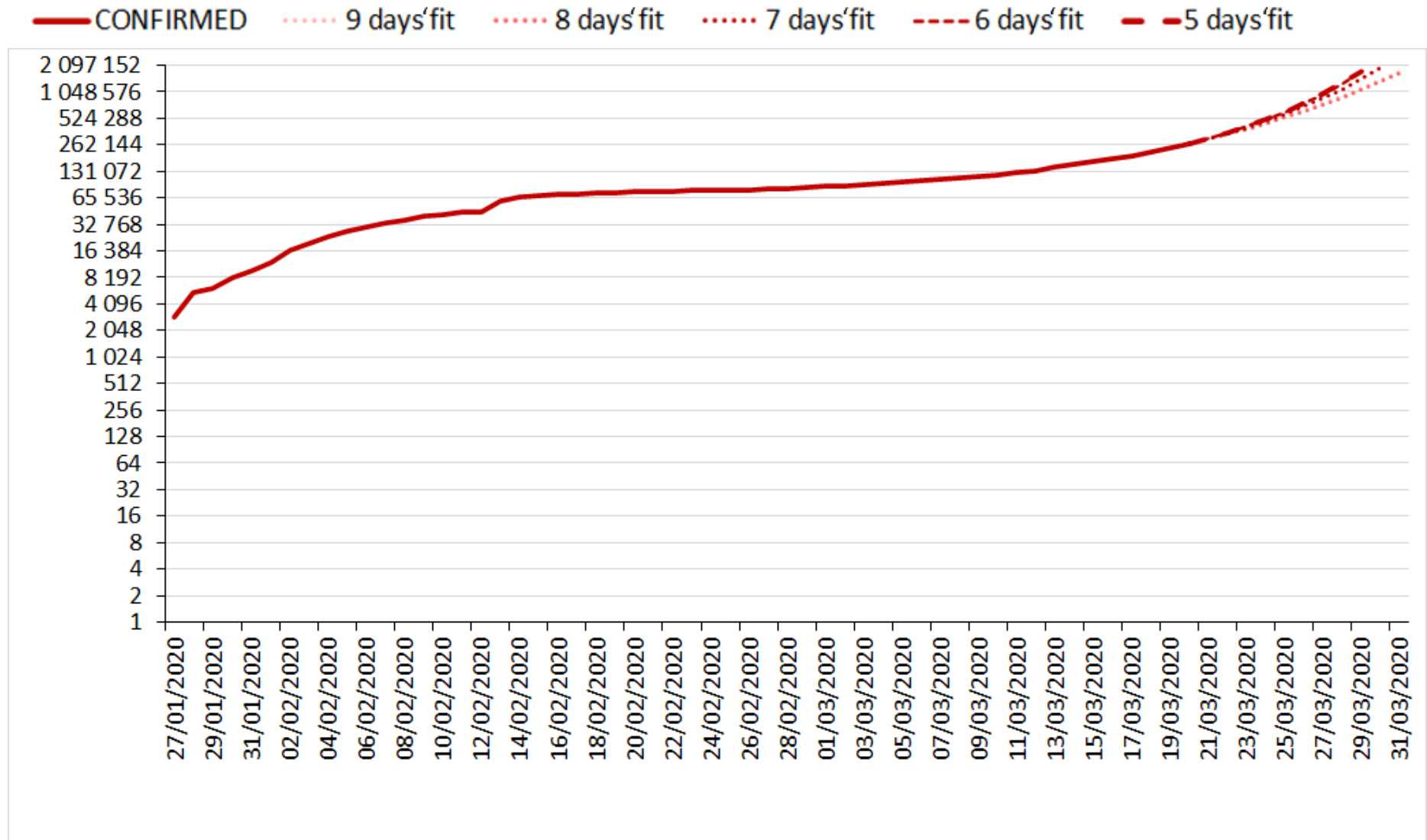
Data: The Johns Hopkins University, Politolog.com

# USA



Data: The Johns Hopkins University, Politolog.com

# World



Data: The Johns Hopkins University, Politolog.com



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