

02 April 2020

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# COVID-19 Projections

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Didier Darcet

# COVID-19 Cases' and Deaths' Projection Method

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

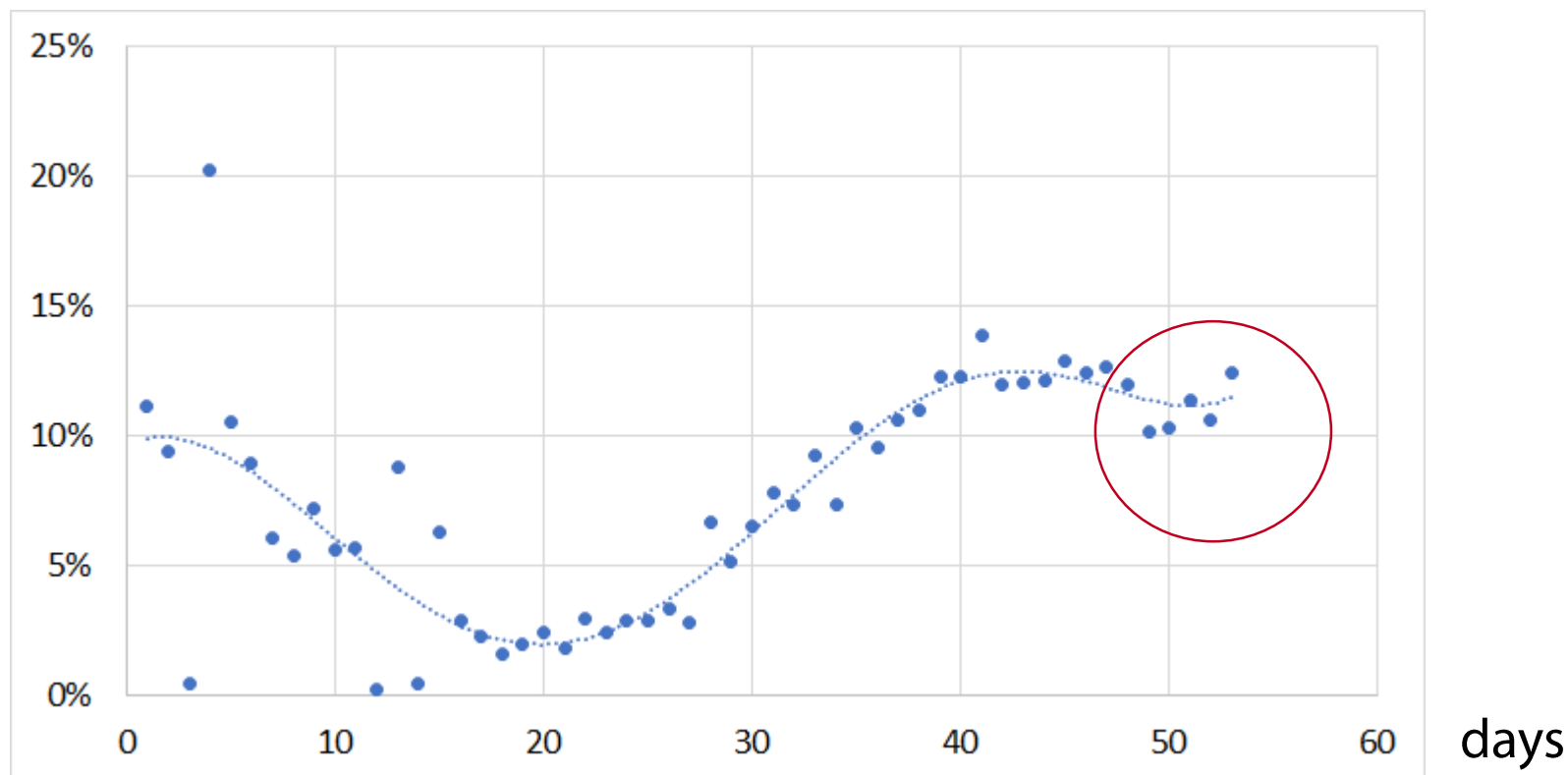
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# DEATHS - PROJECTIONS

# World

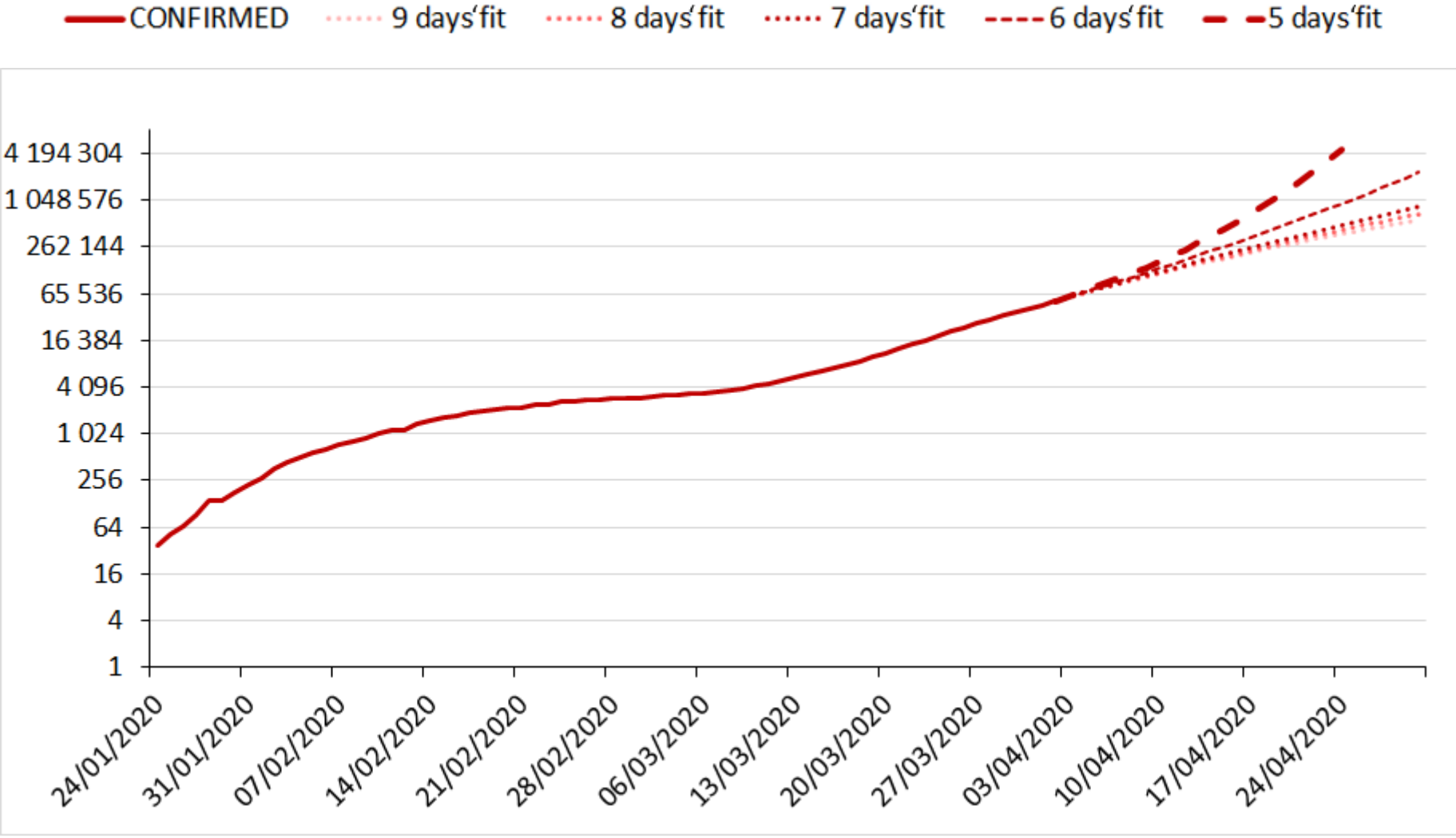
The number of deaths jumped on 2 April 2020 casting doubts on the downward trend of the jolt (the derivative of the acceleration) in the last 12 days. Projections will therefore significantly diverge when fitting the previous 5, 6, 7, 8 or 9 days.

jolt



Data: The Johns Hopkins University, Politolog.com

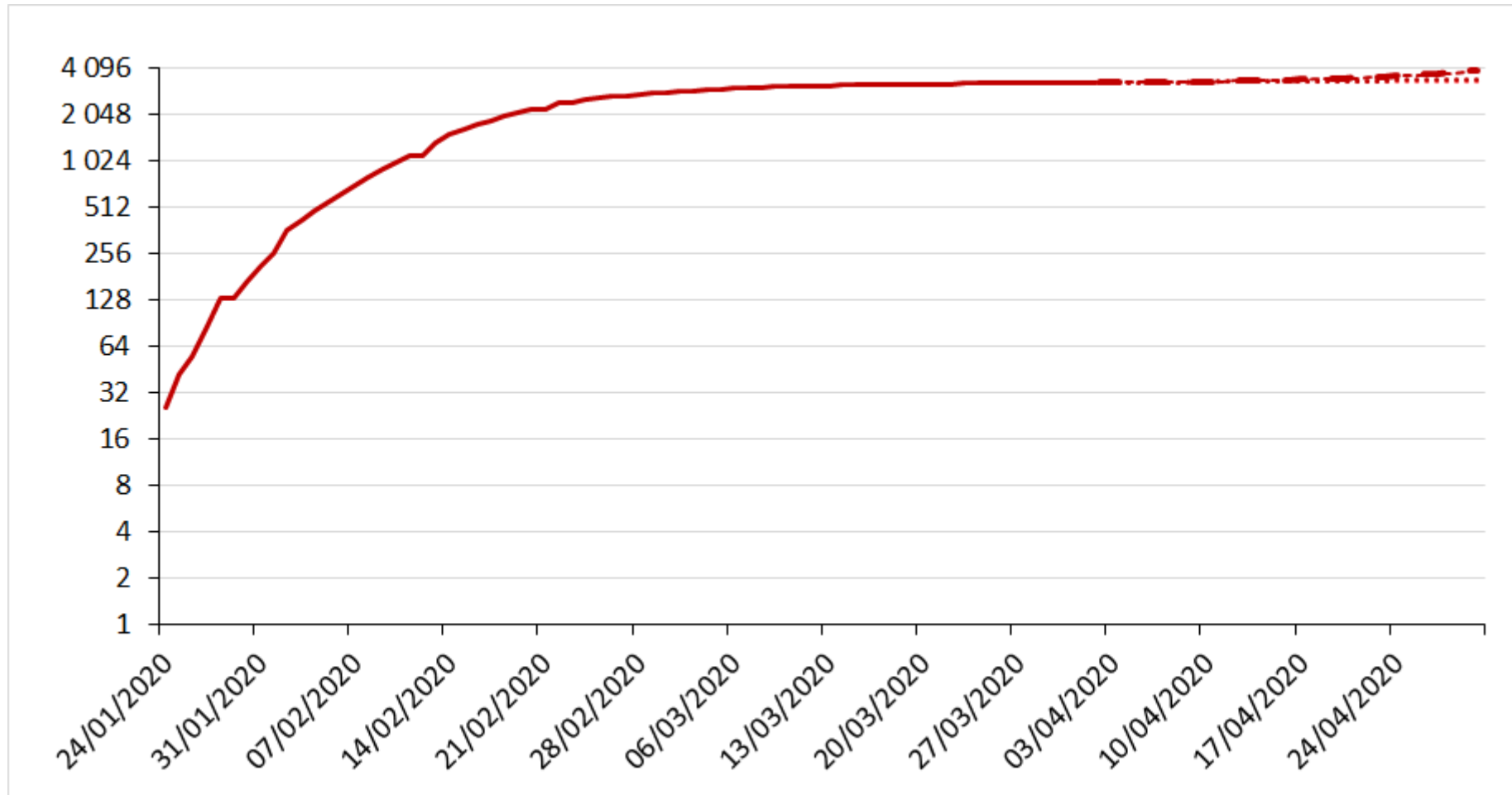
# World



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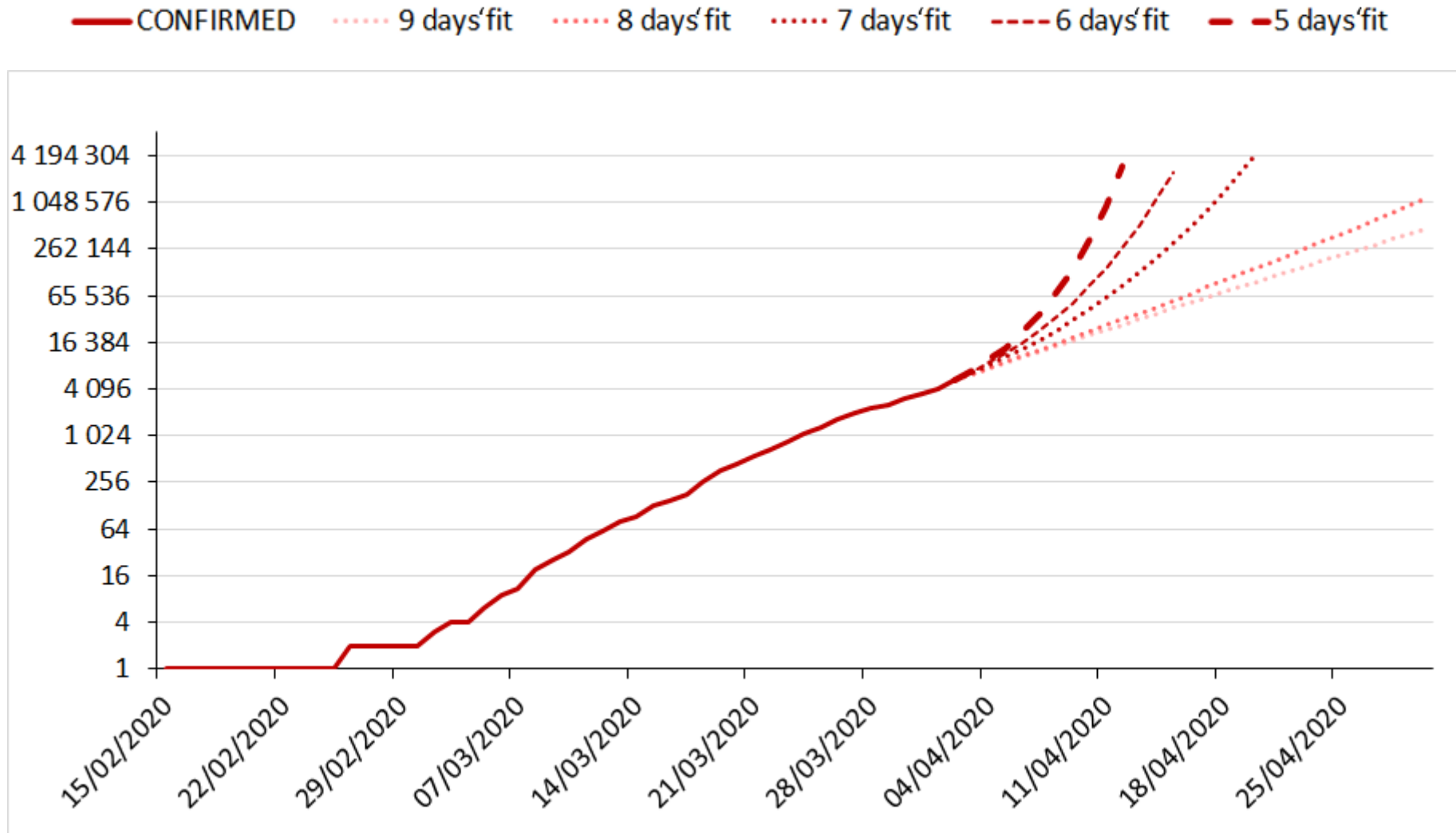
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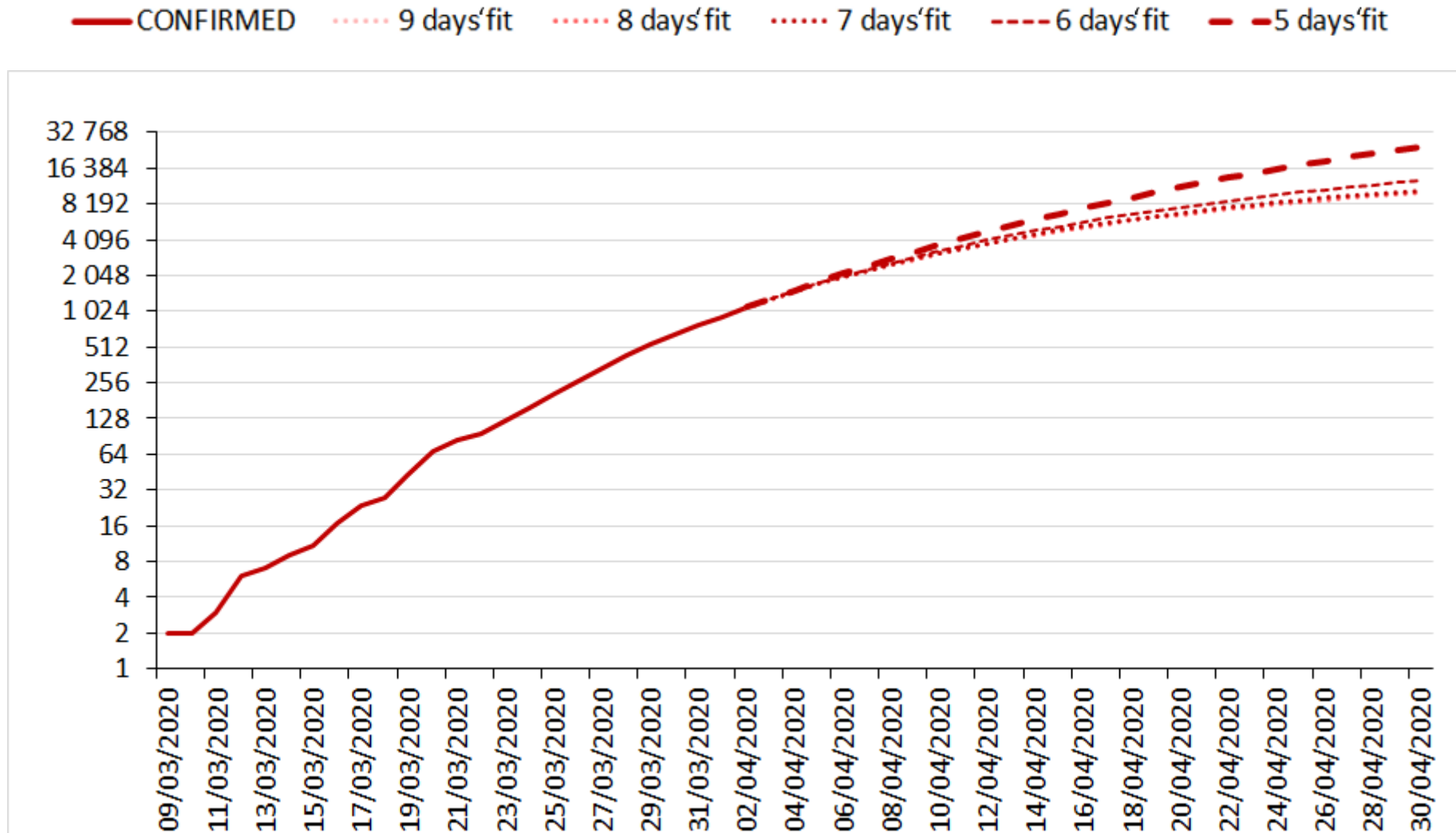
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# France



Data: The Johns Hopkins University, Politolog.com

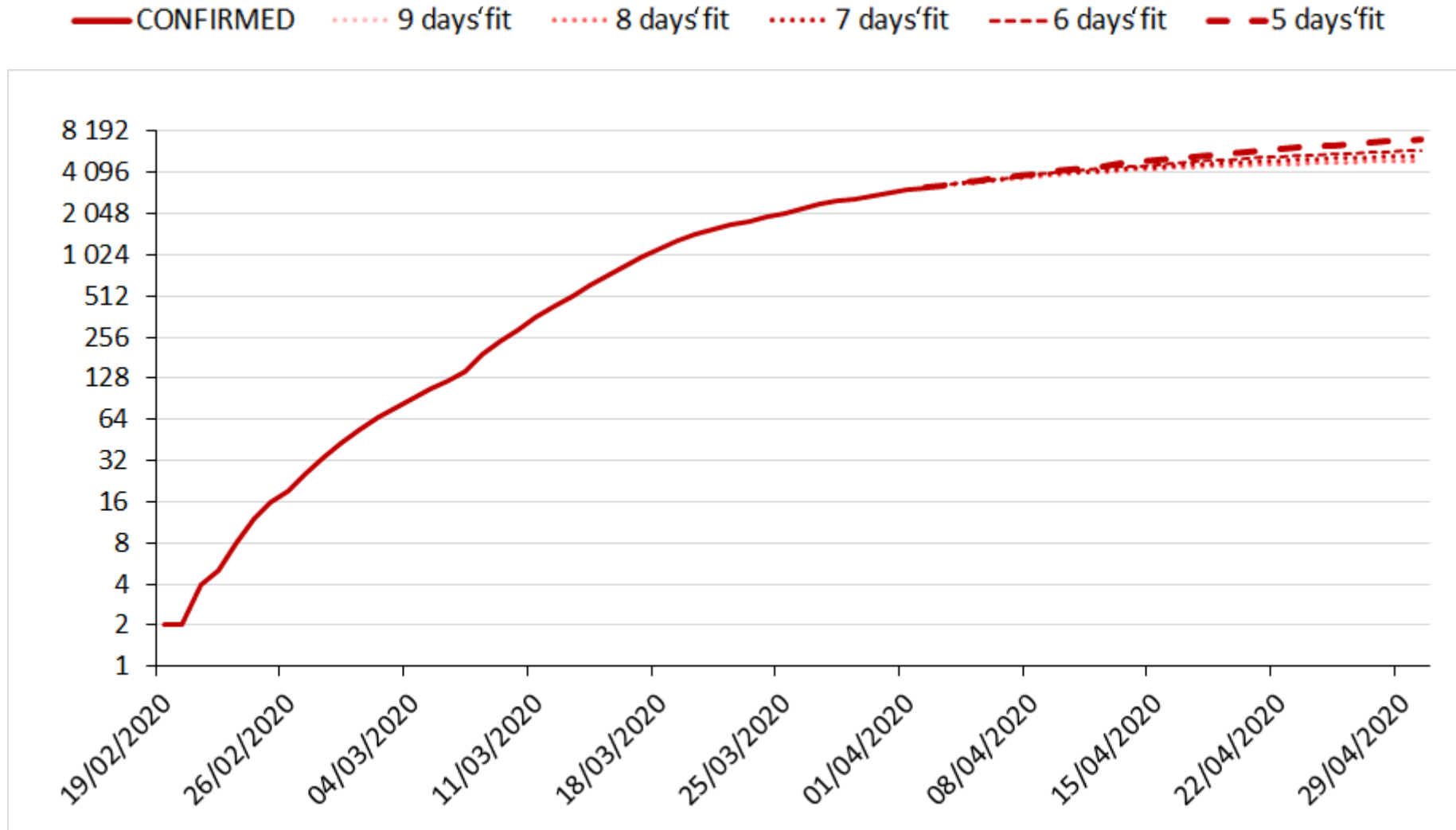
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Data: The Johns Hopkins University, Politolog.com



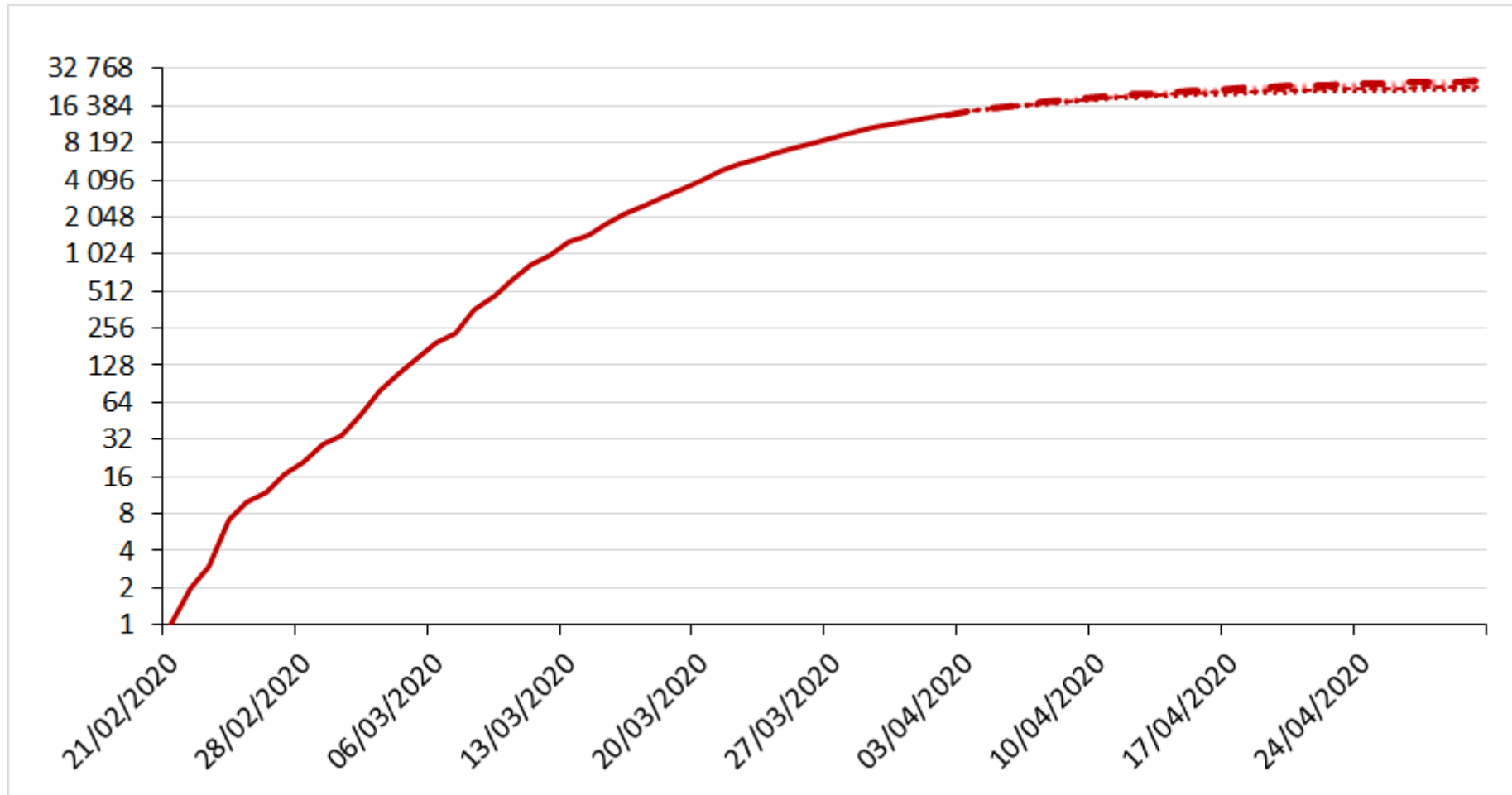
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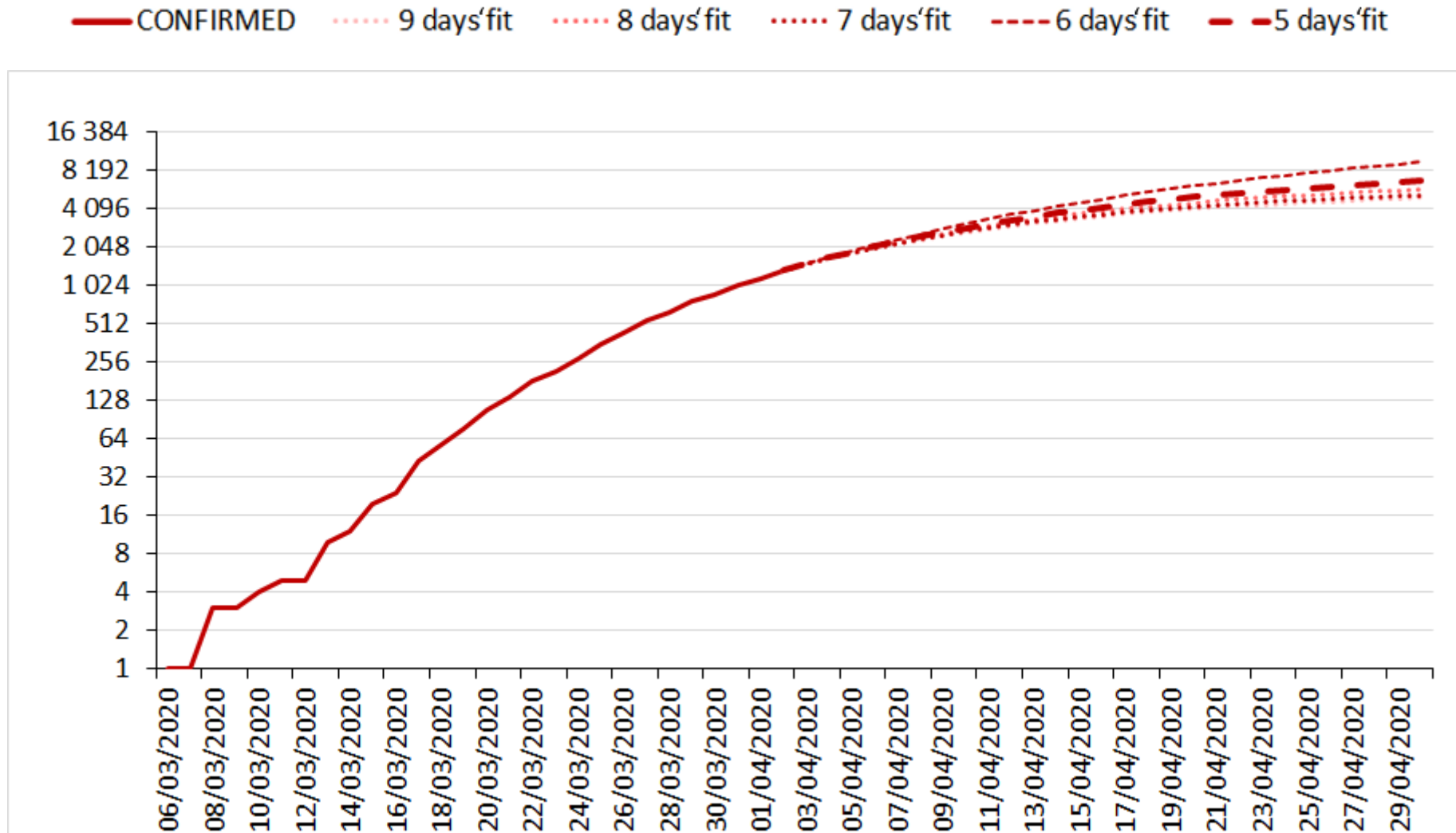
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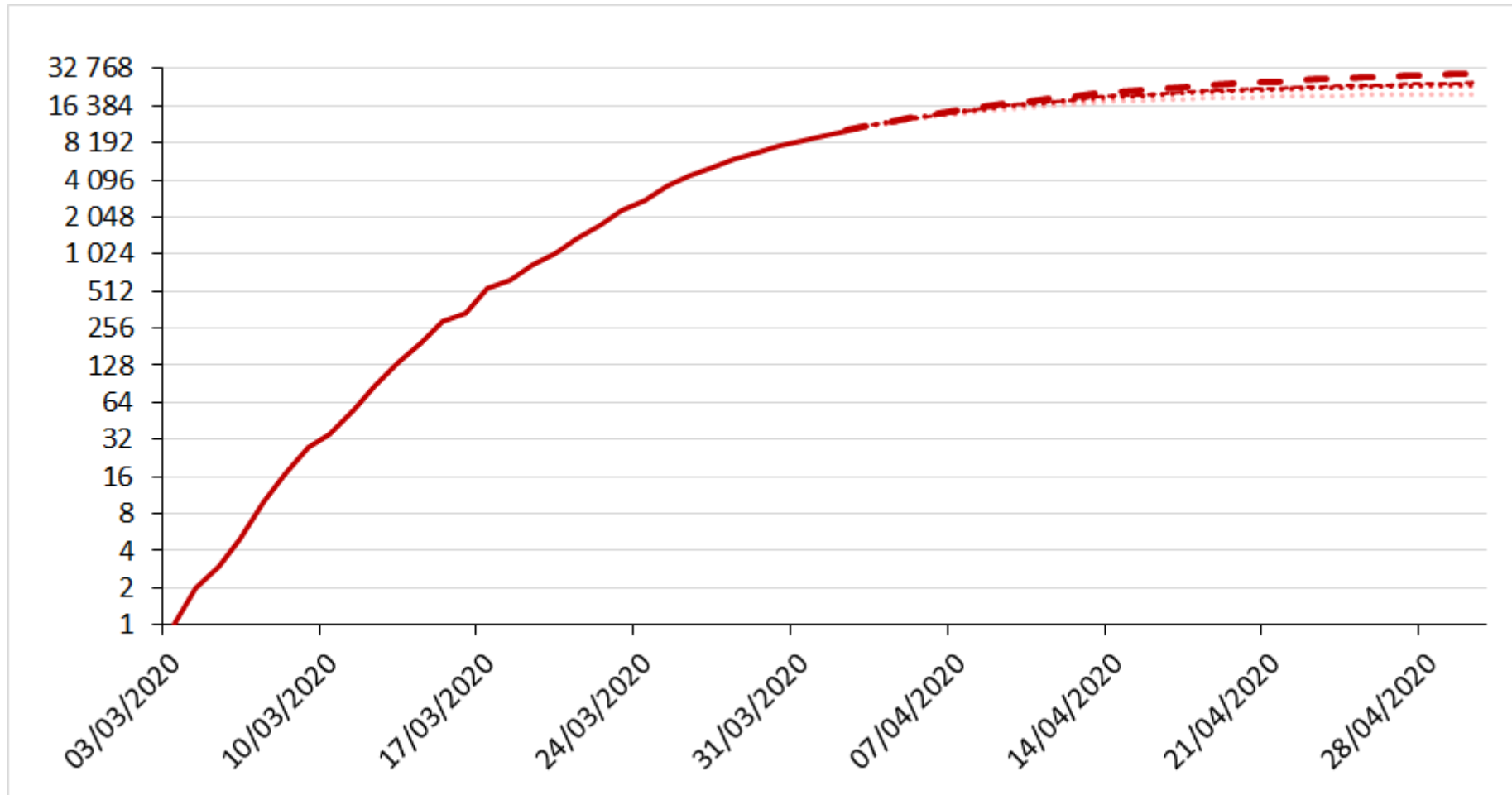
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Data: The Johns Hopkins University, Politolog.com

# Spain

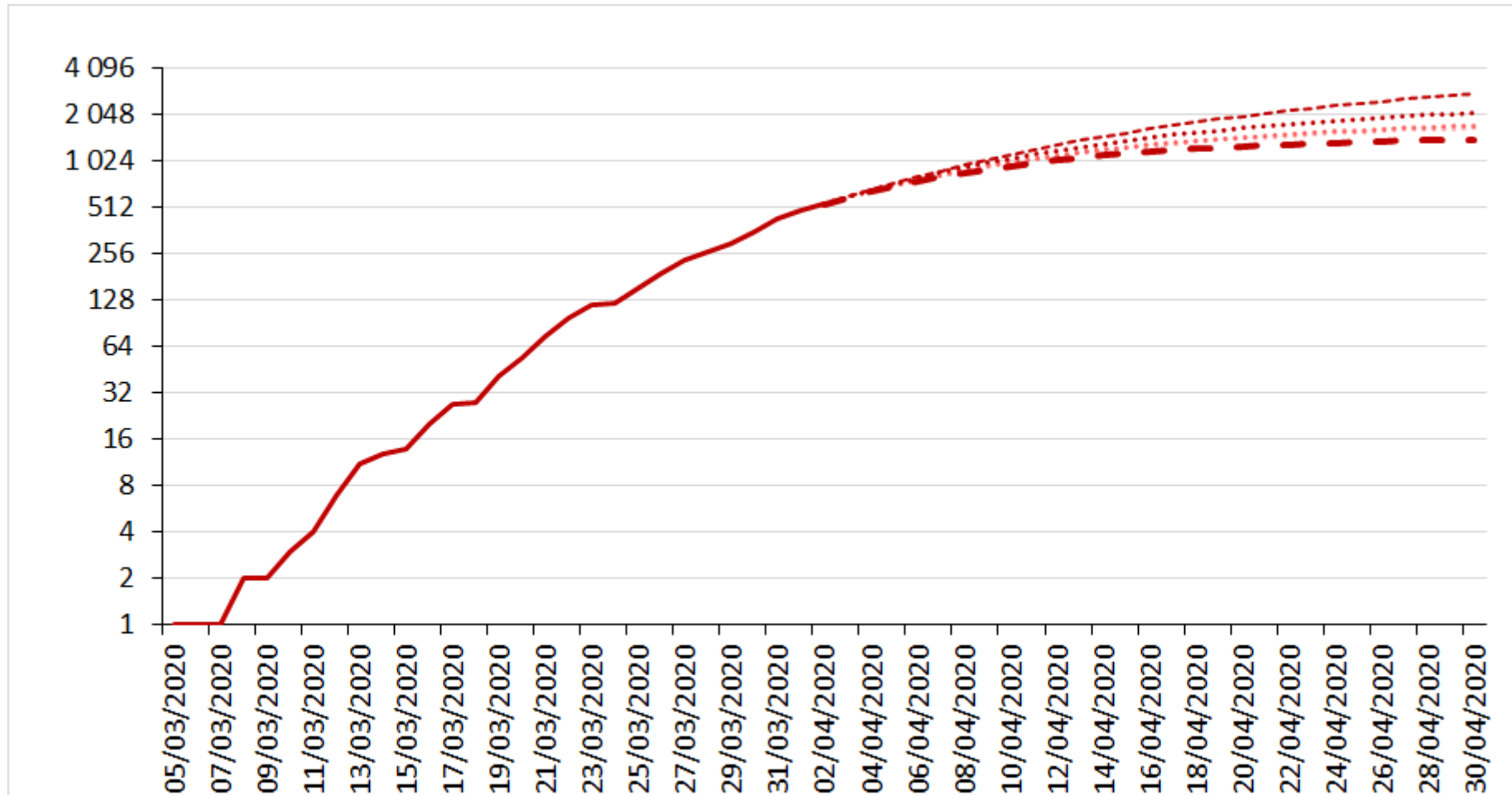
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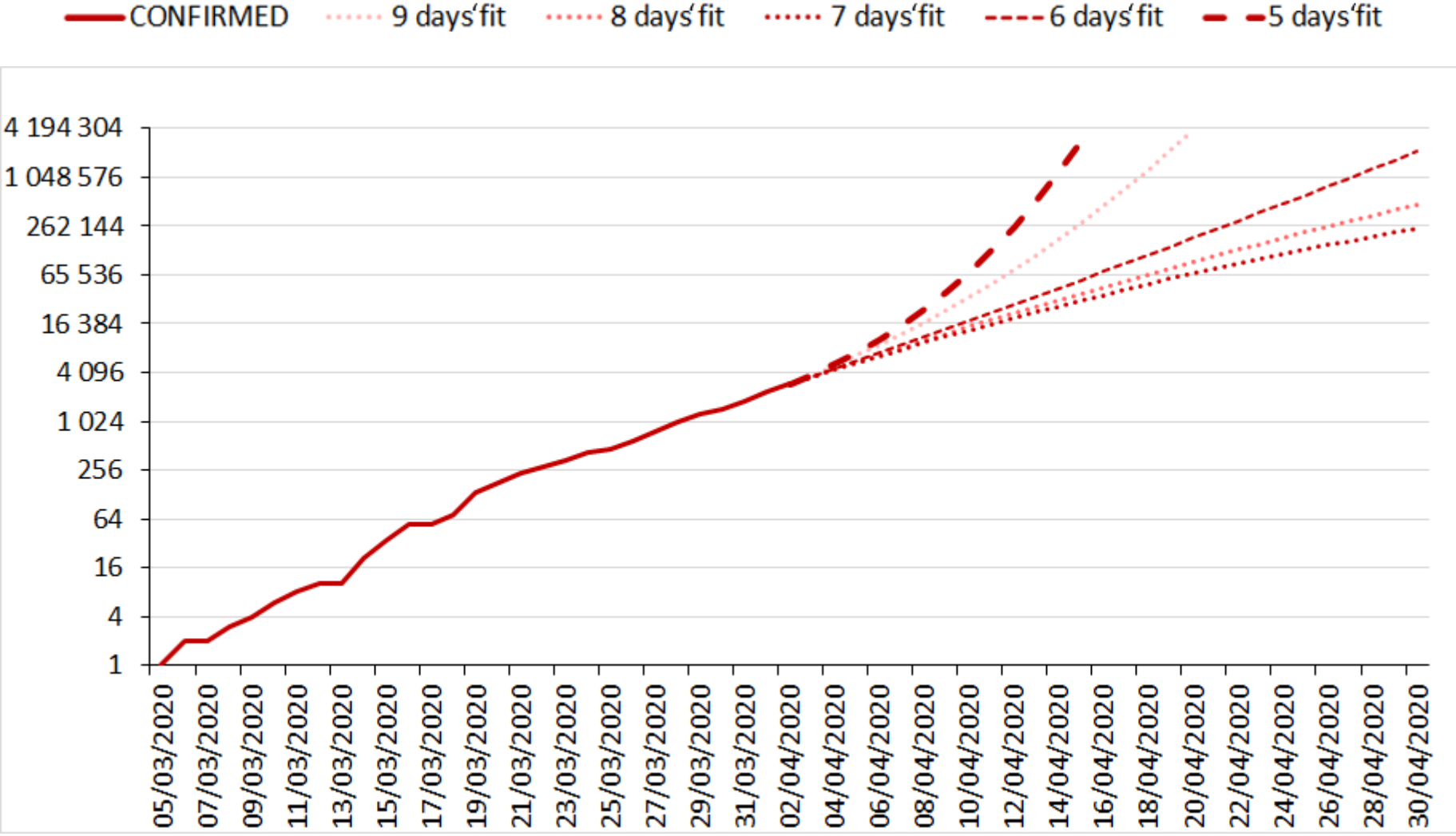
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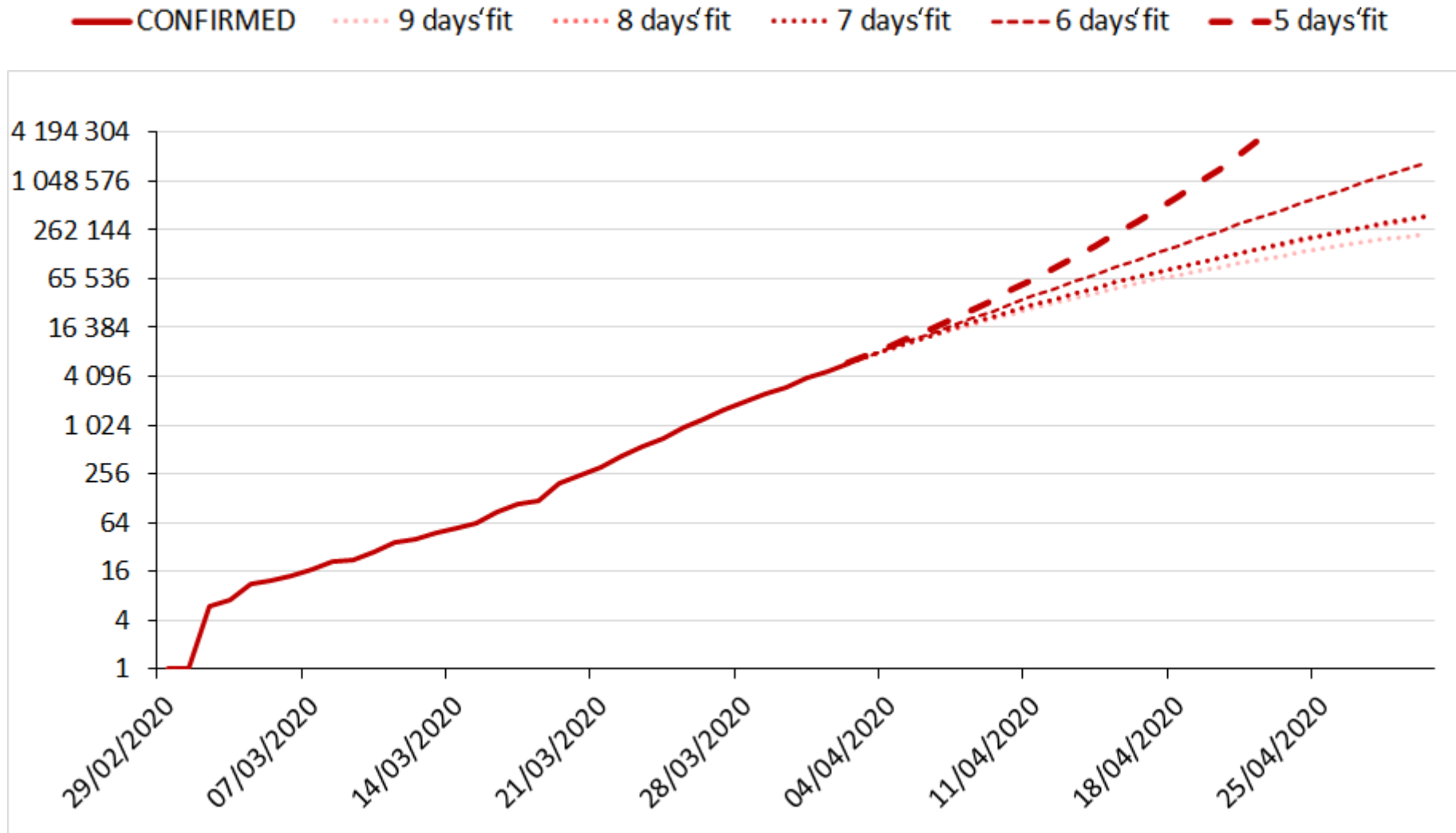
Data: The Johns Hopkins University, Politolog.com

# United Kingdom



Data: The Johns Hopkins University, Politolog.com

# USA



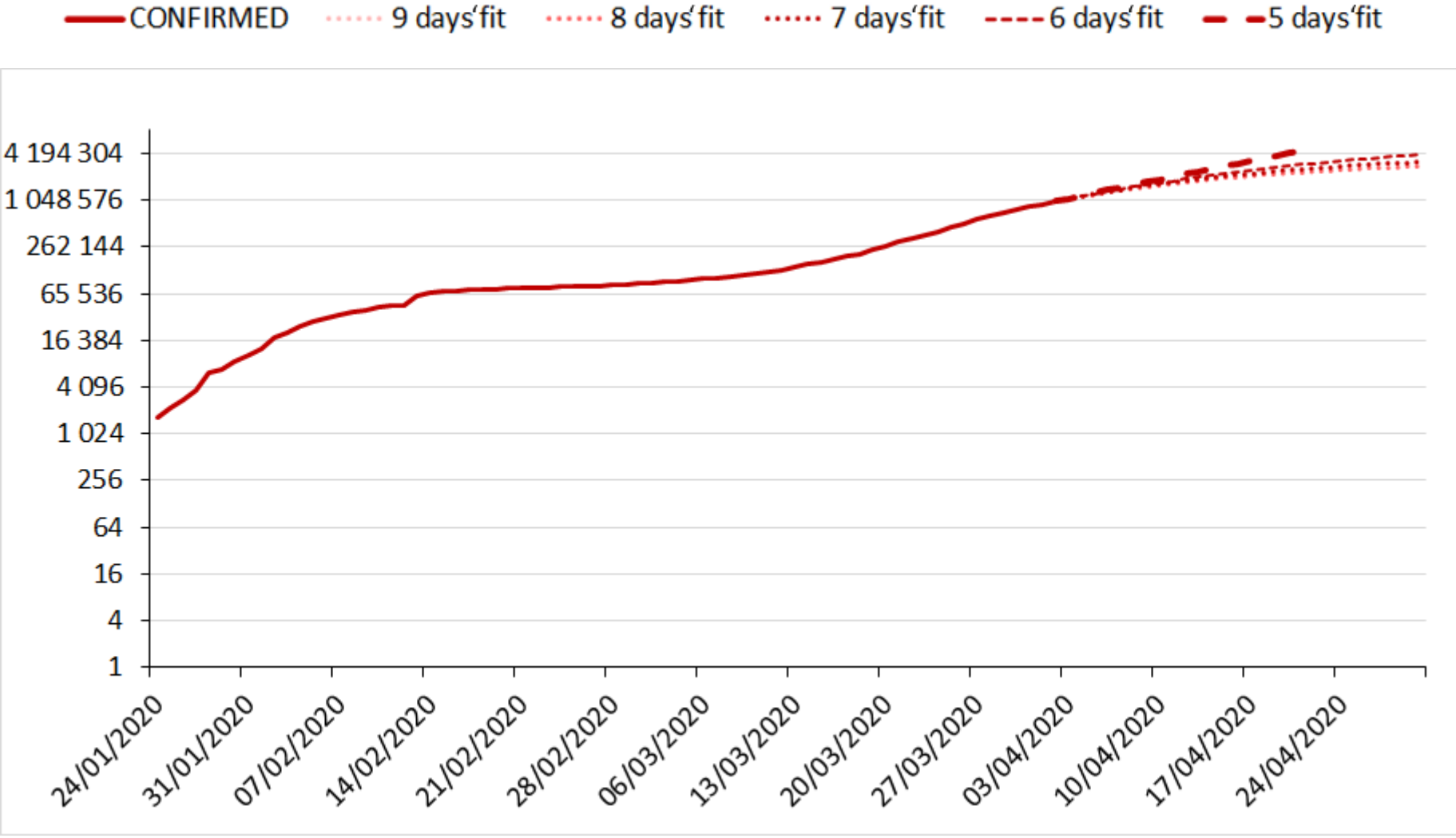
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# CUMULATED CASES - PROJECTIONS

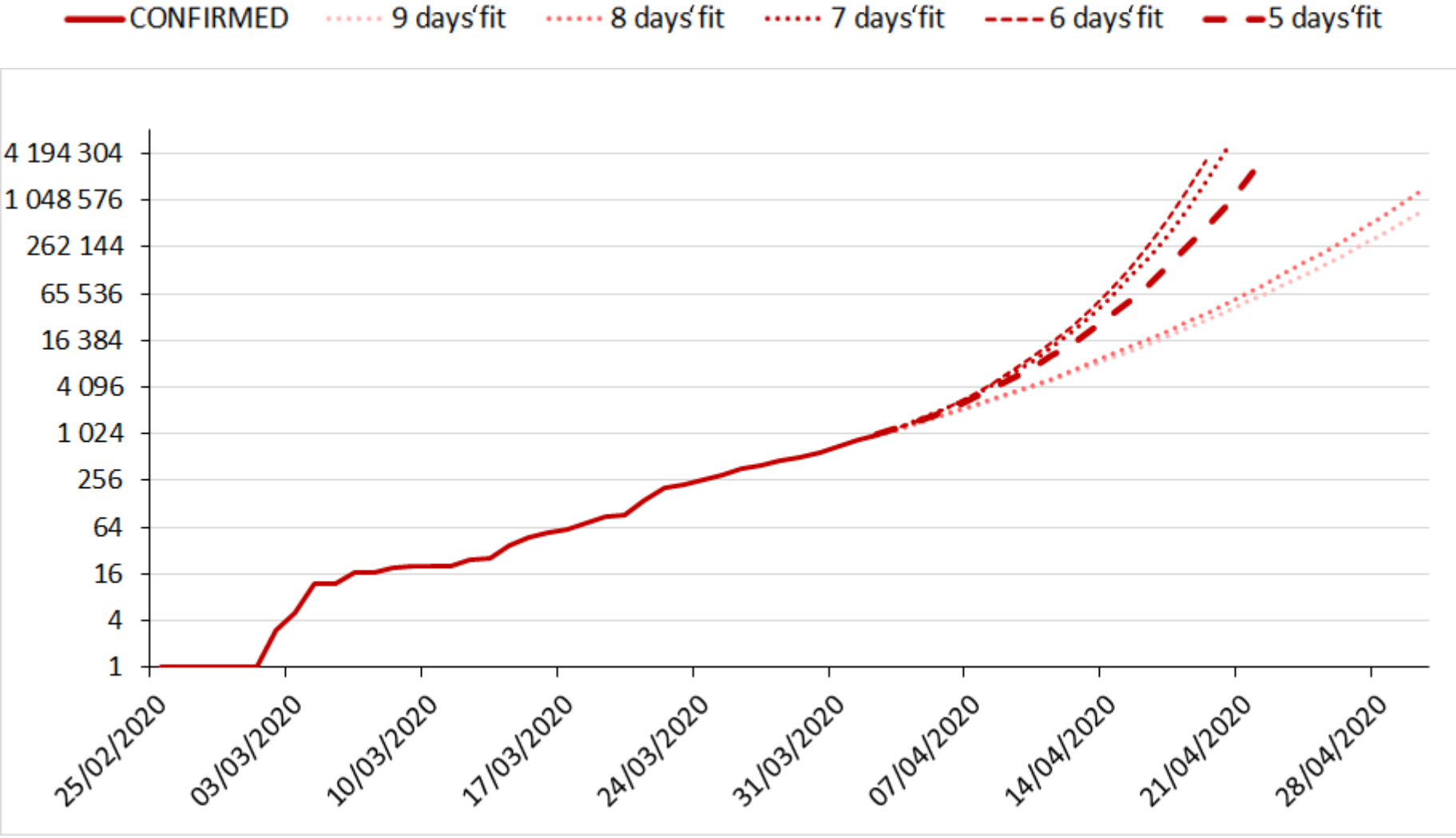


# World



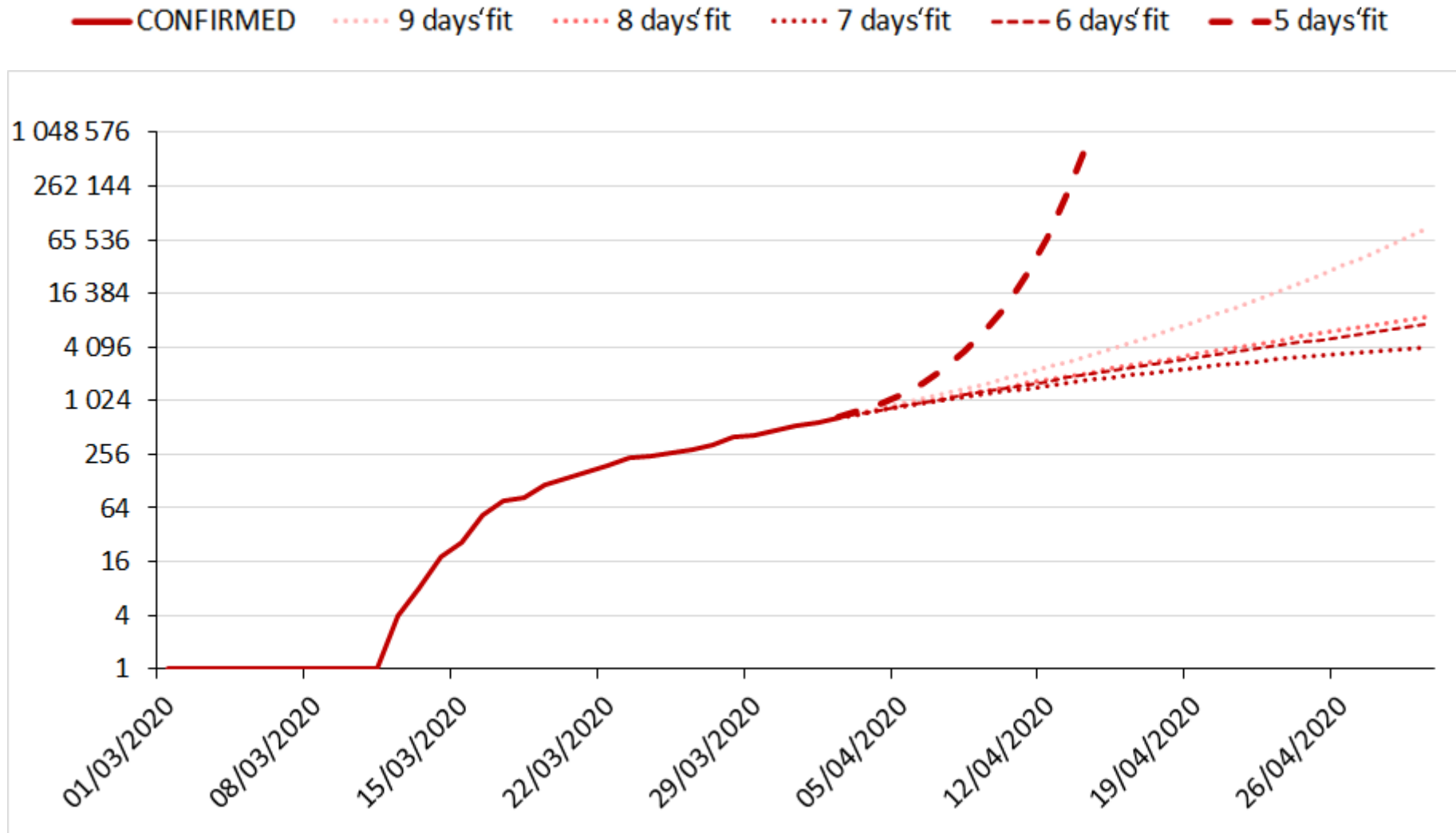
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Data: The Johns Hopkins University, Politolog.com

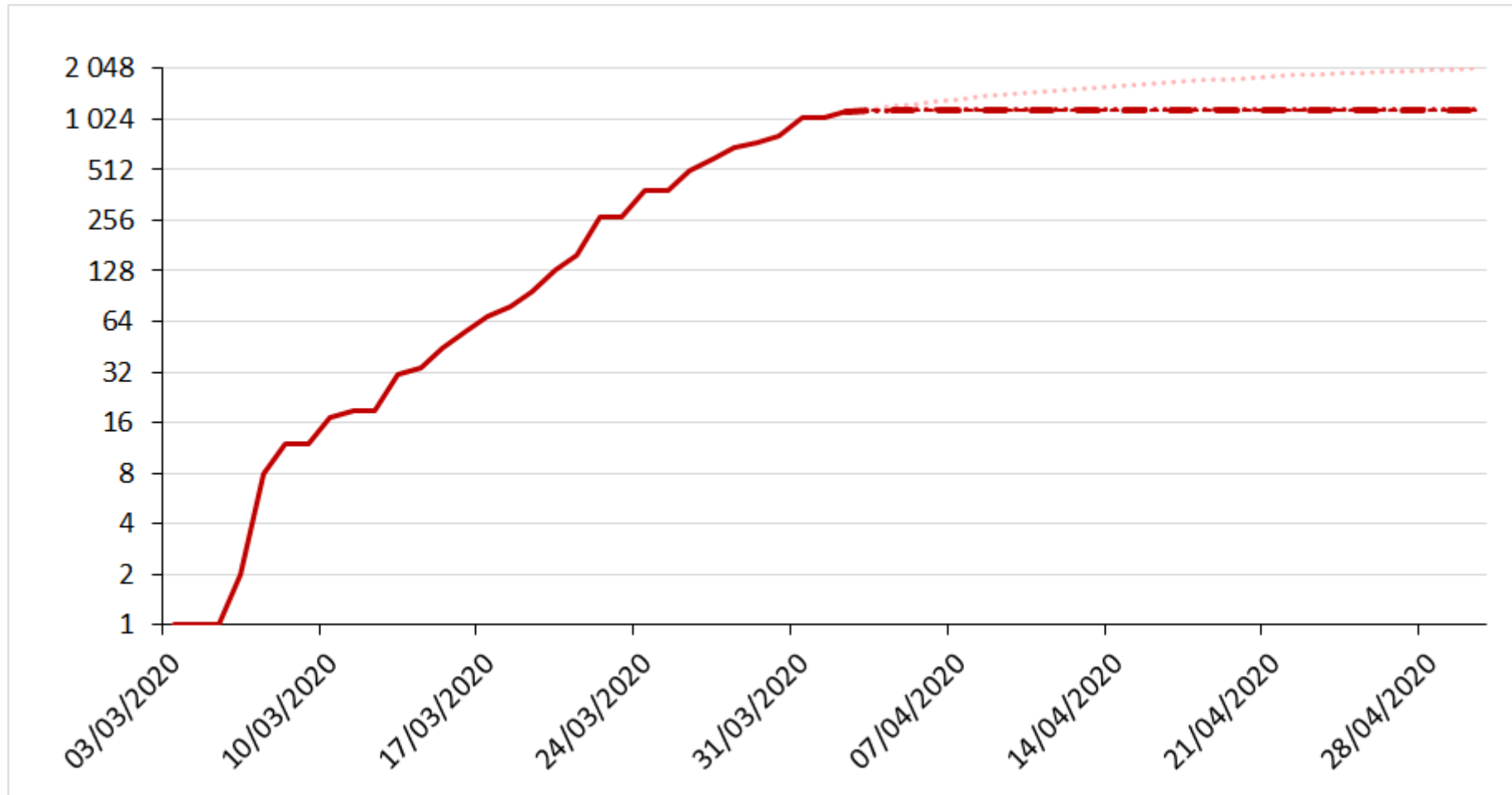
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Data: The Johns Hopkins University, Politolog.com

# Argentina

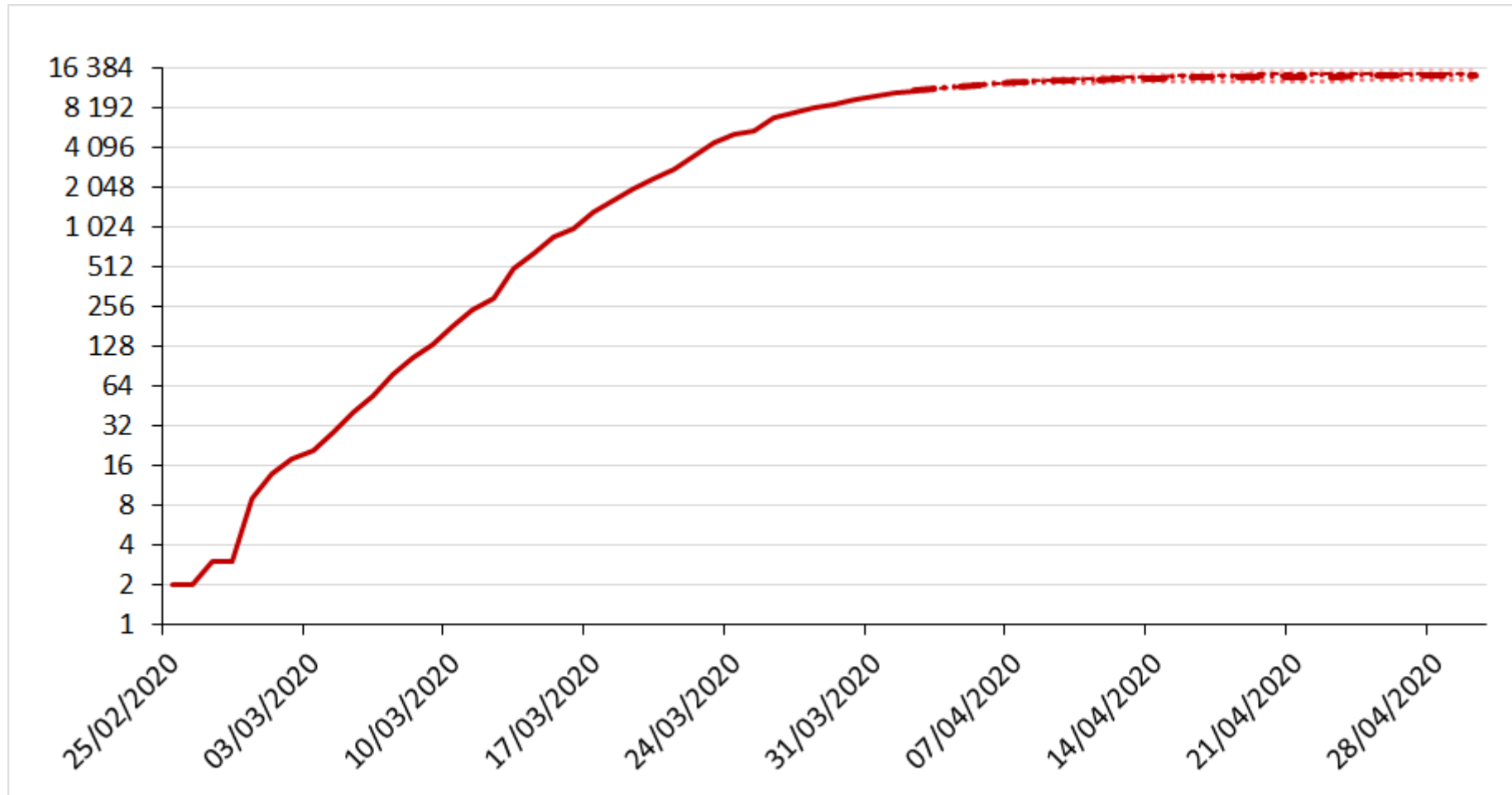
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Data: The Johns Hopkins University, Politolog.com

# Austria

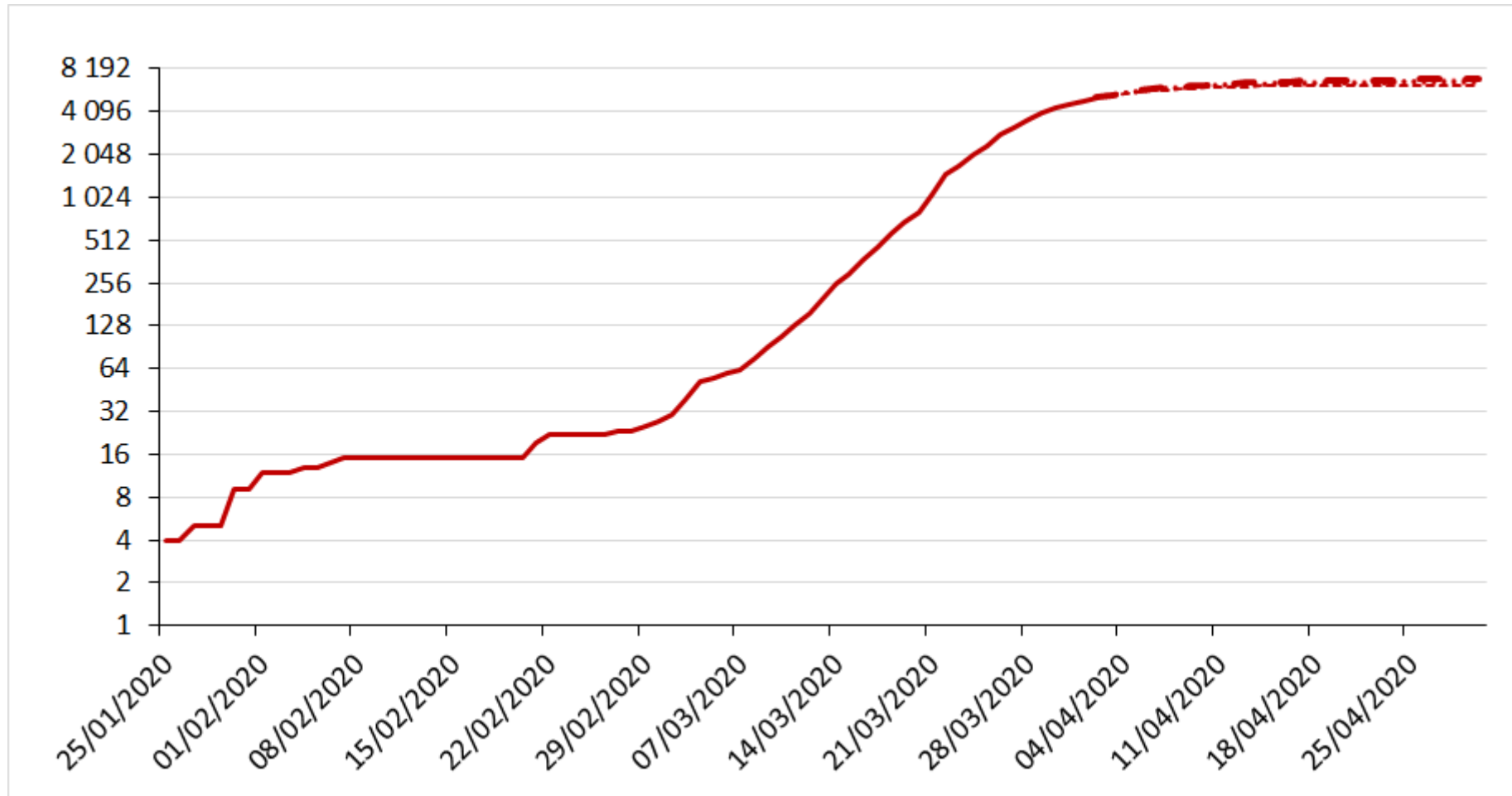
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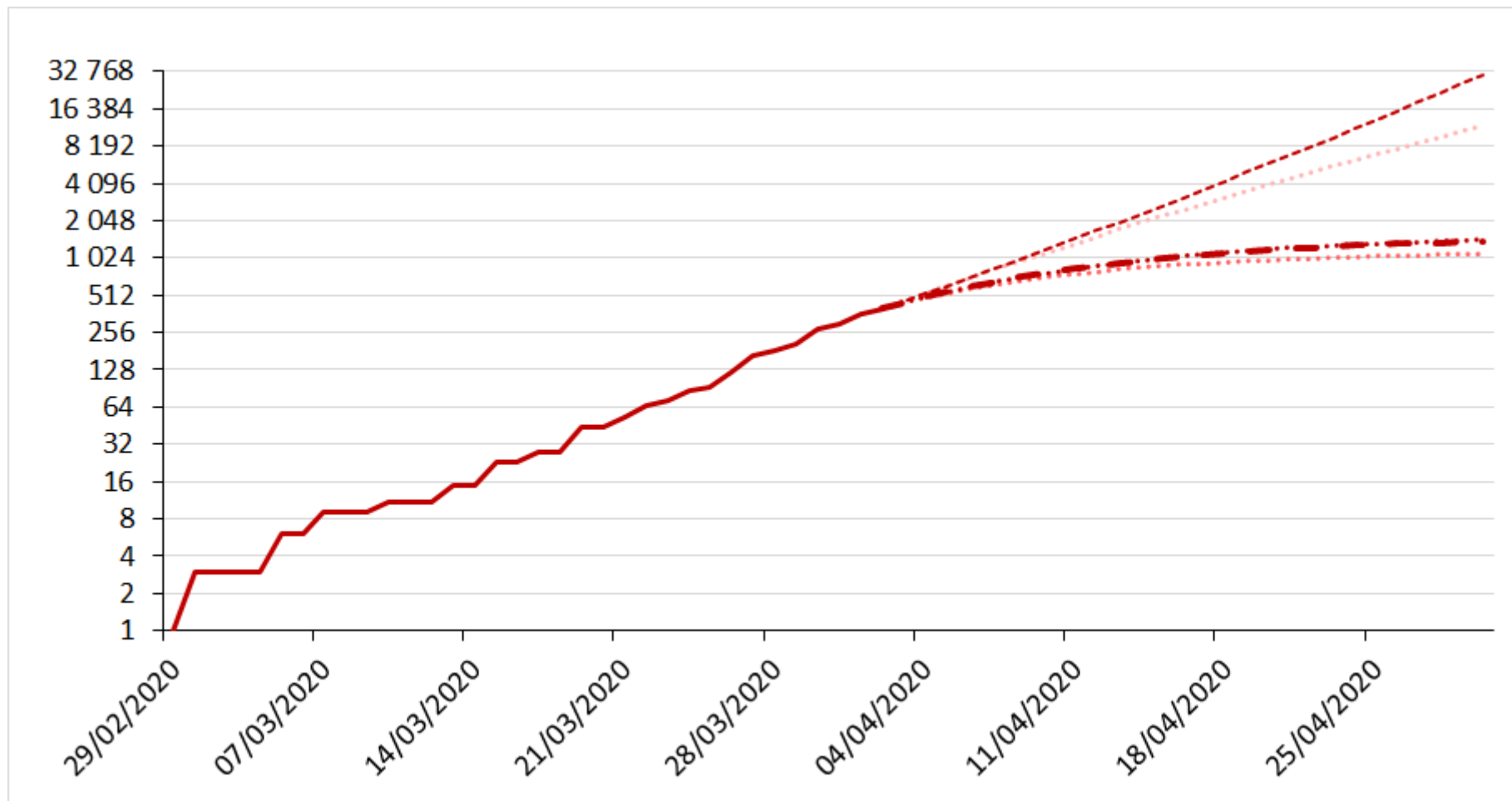
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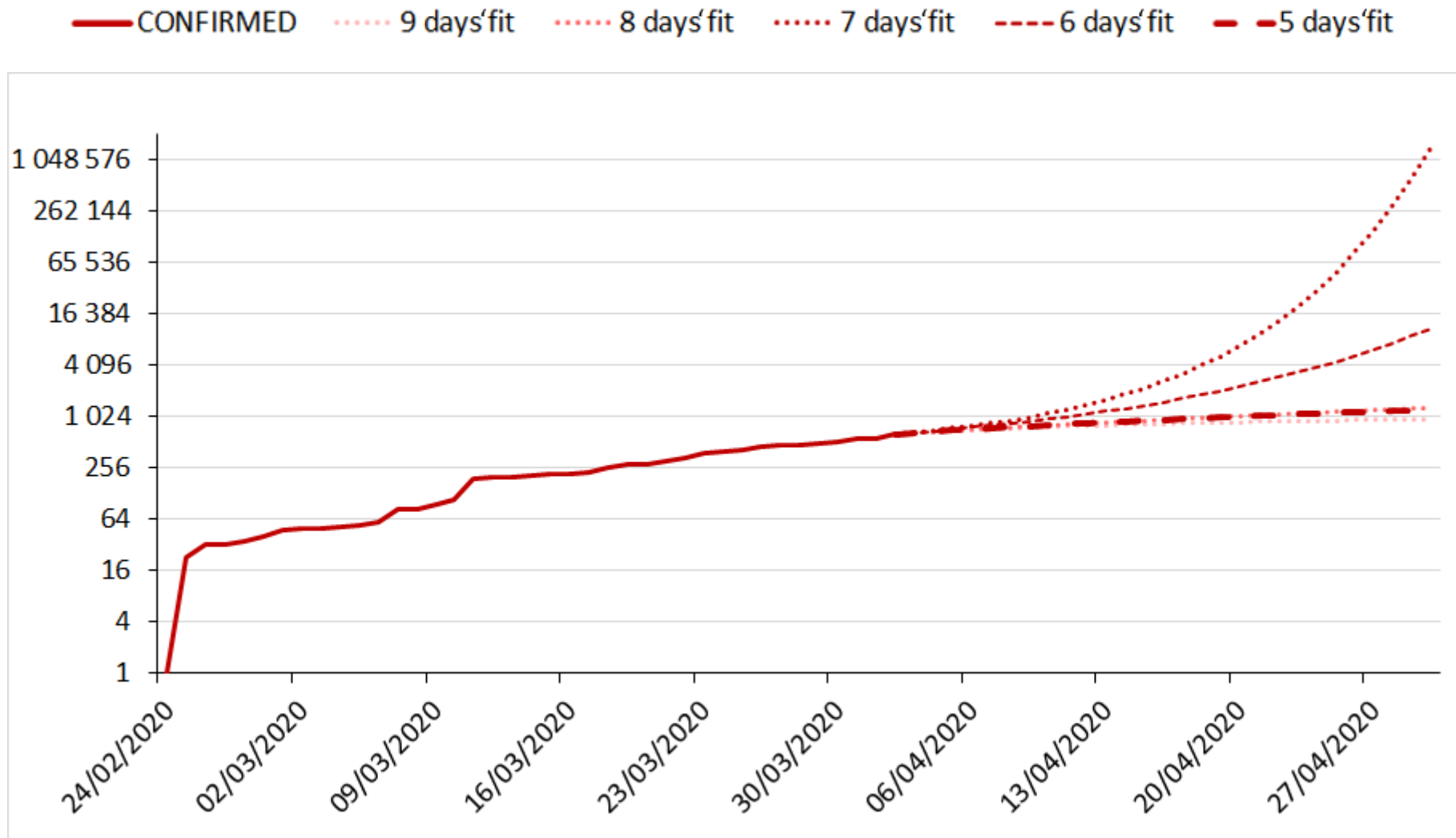
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# Bahrain

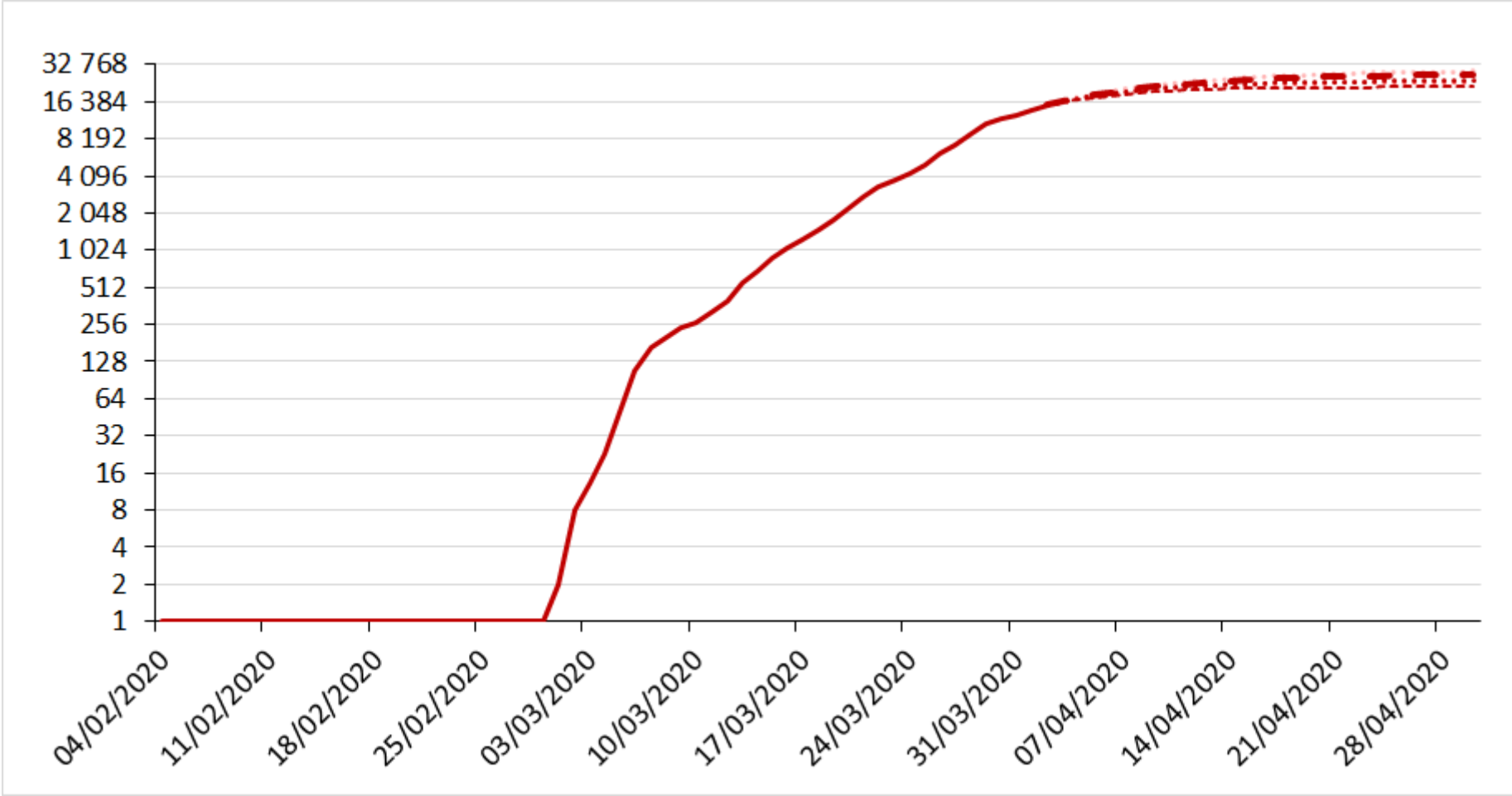


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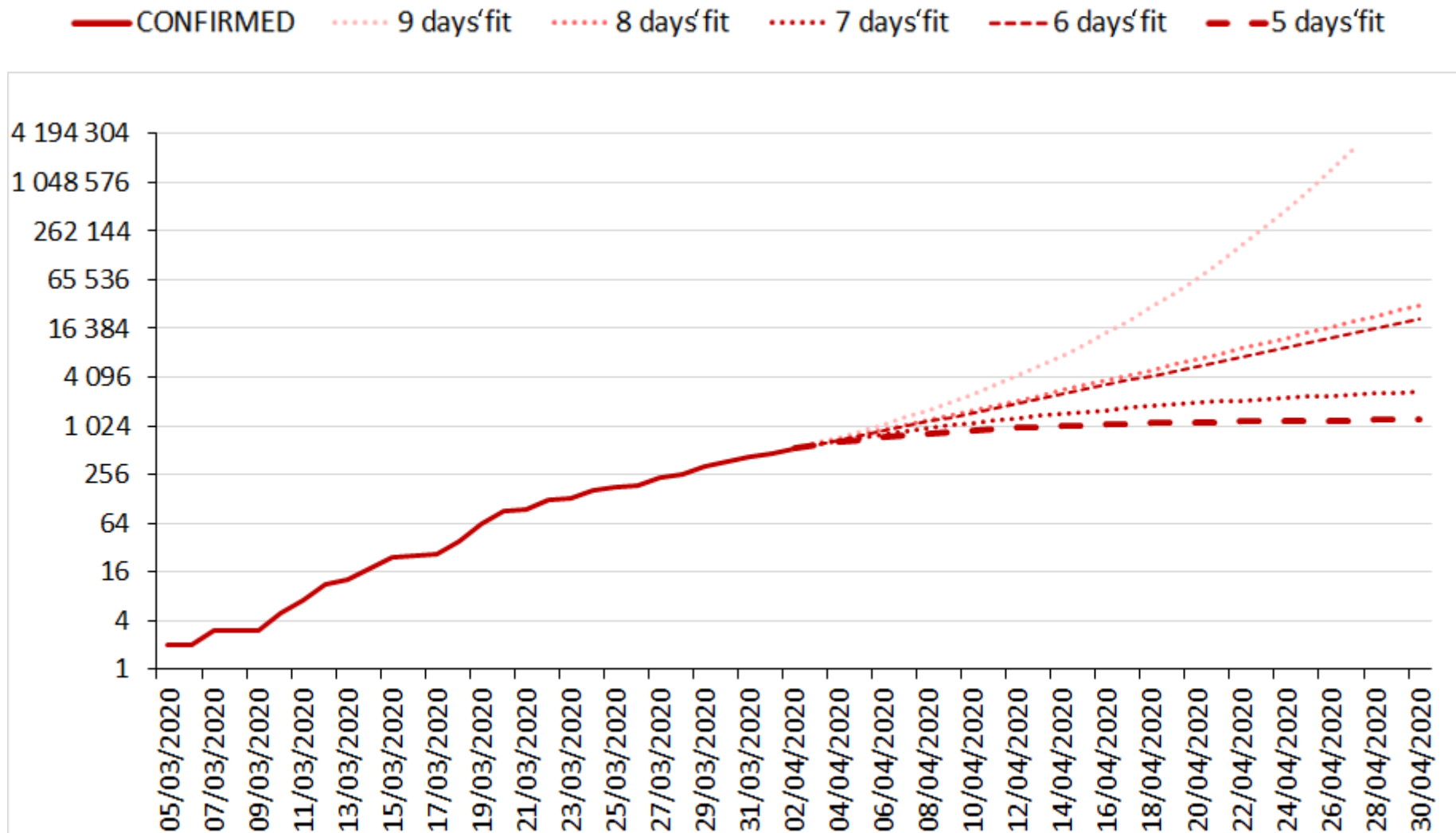
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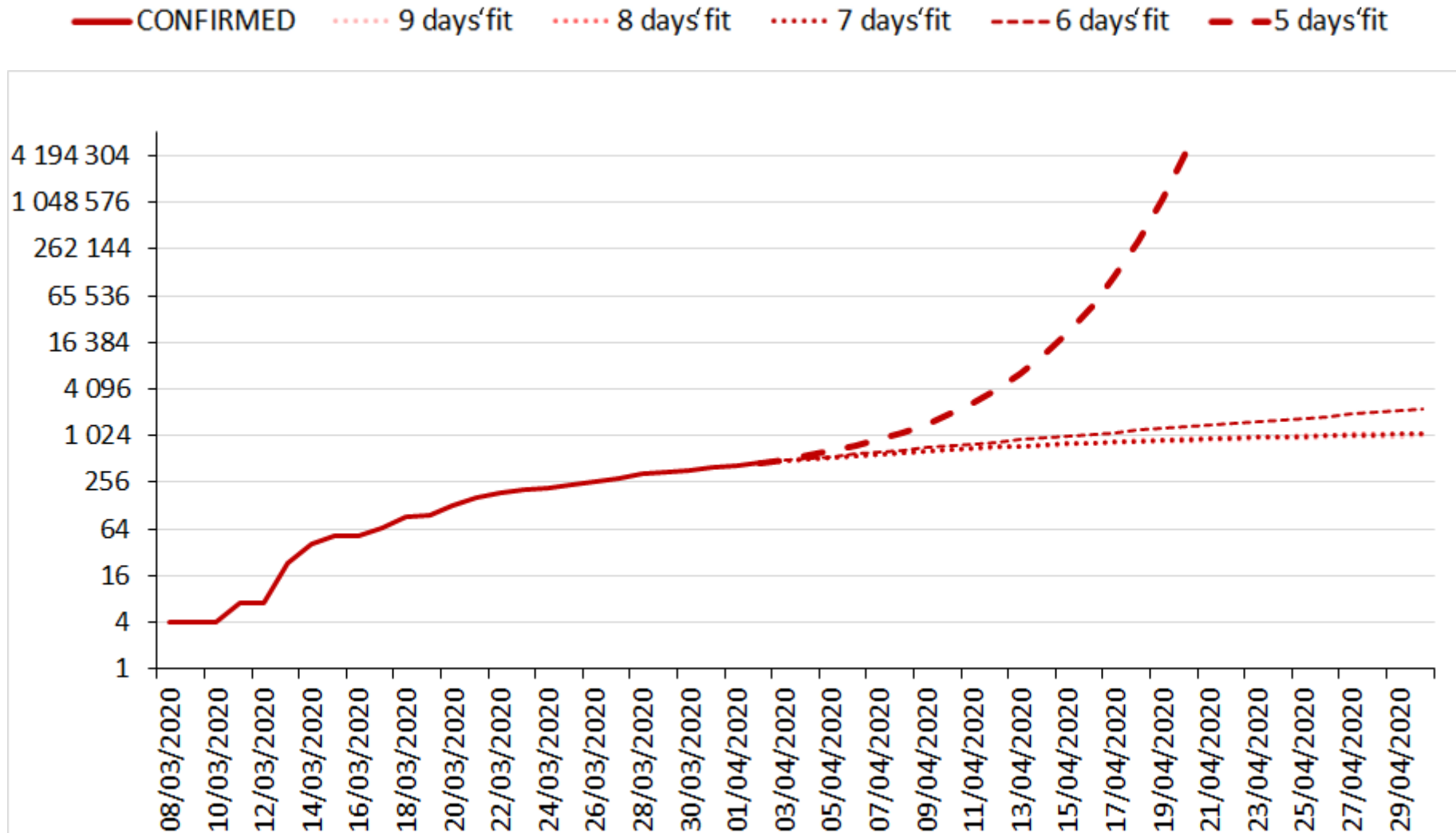
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# Bosnia and Herzegovina



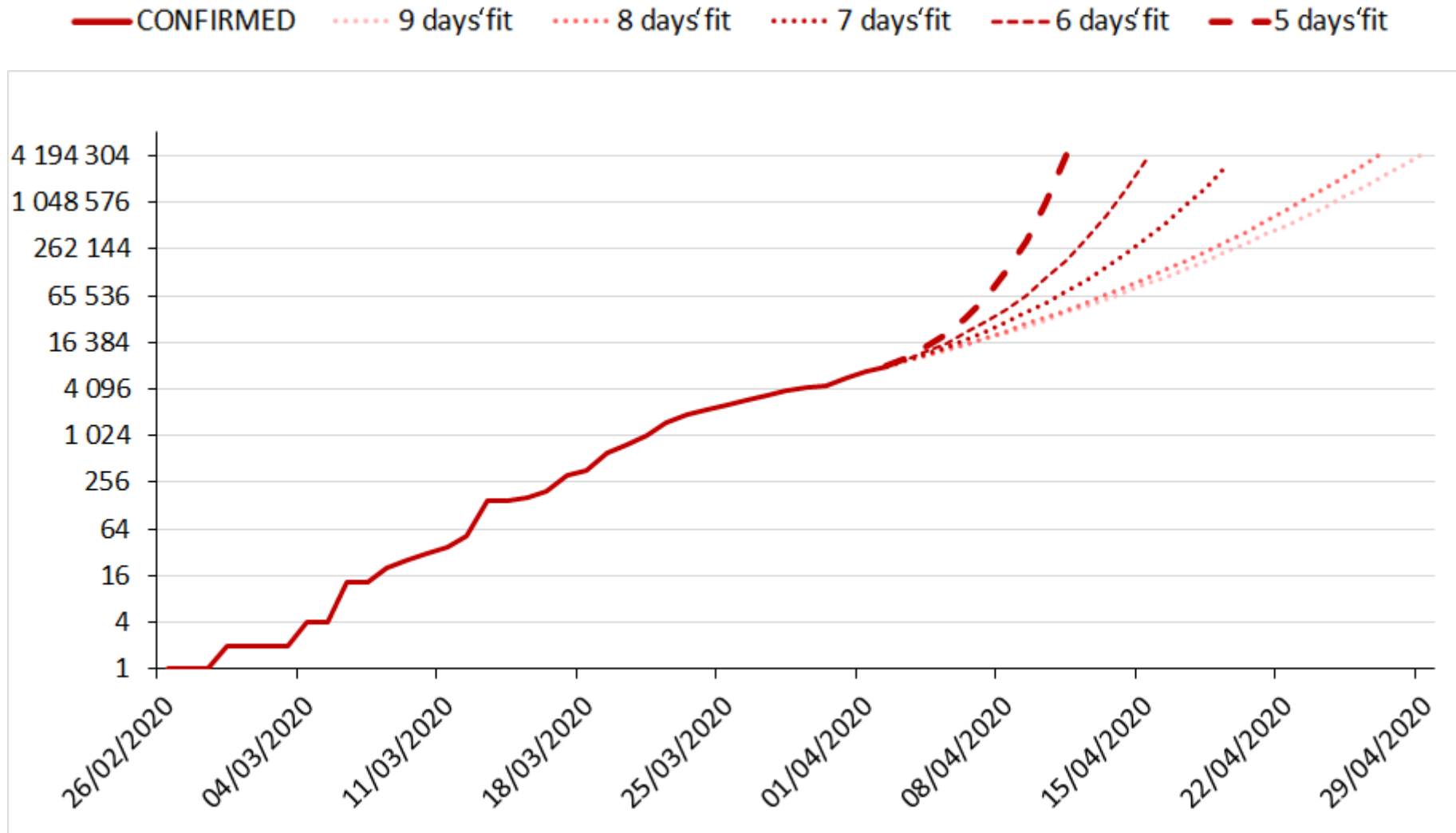
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# Bulgaria



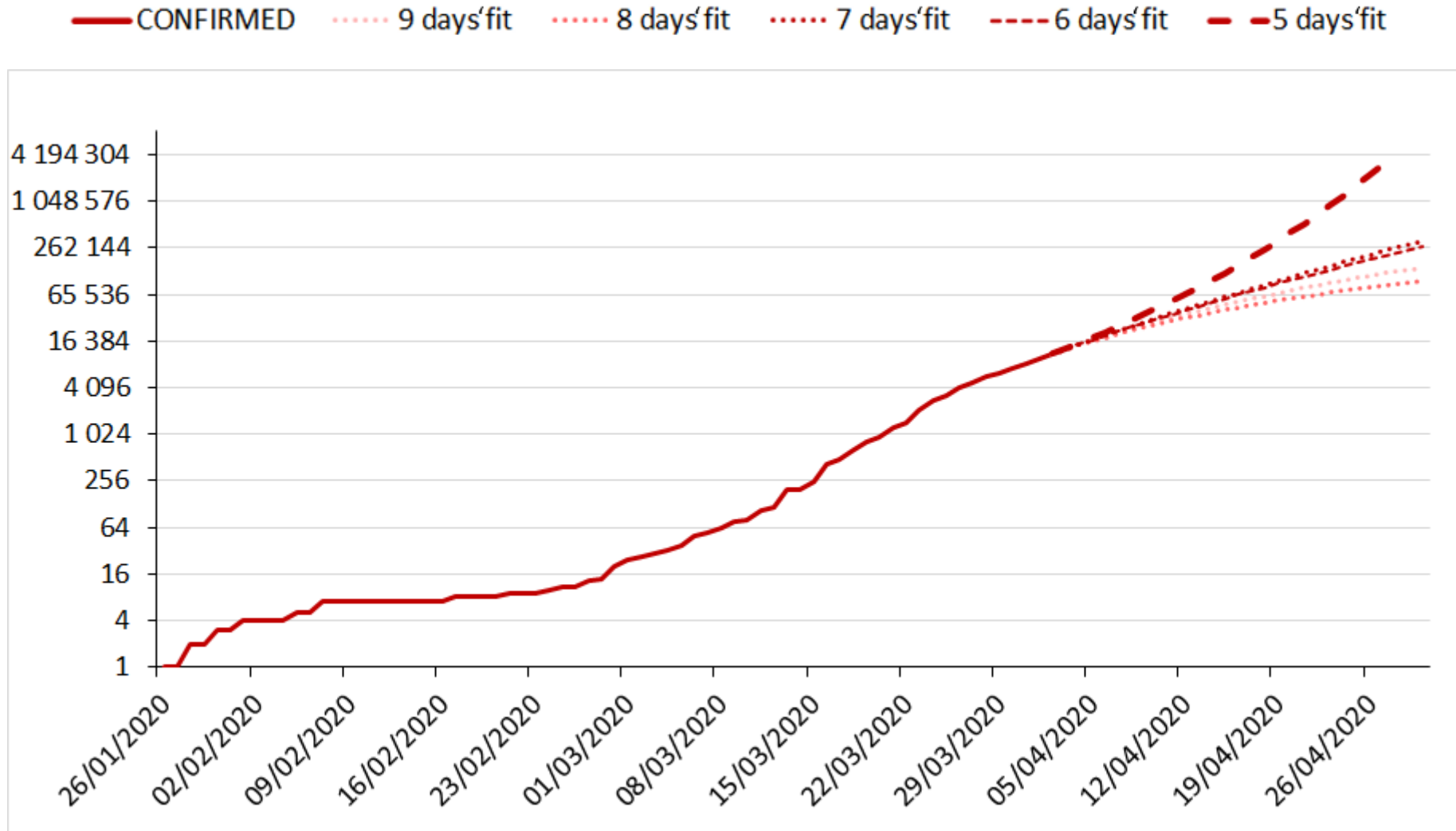
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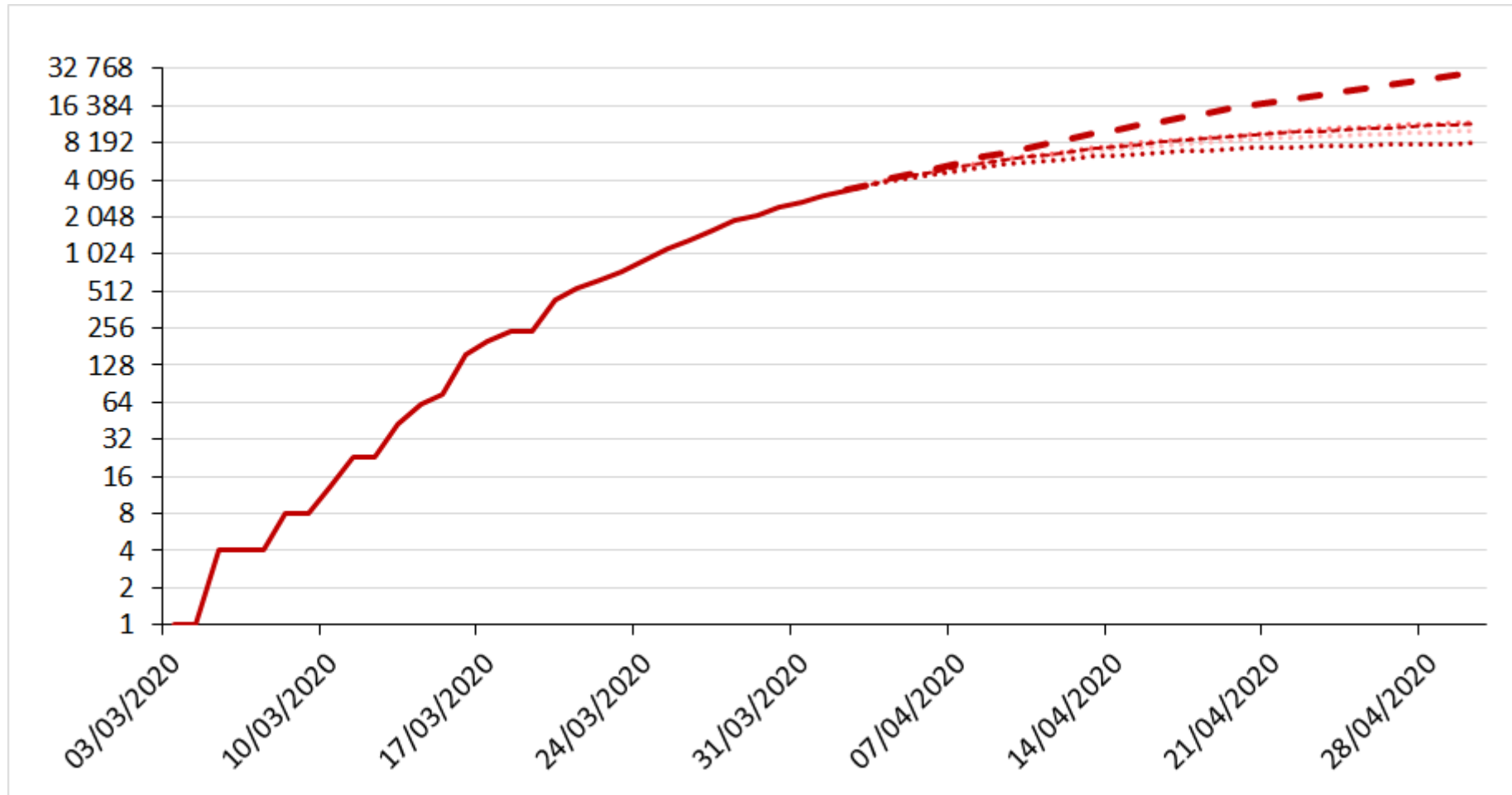
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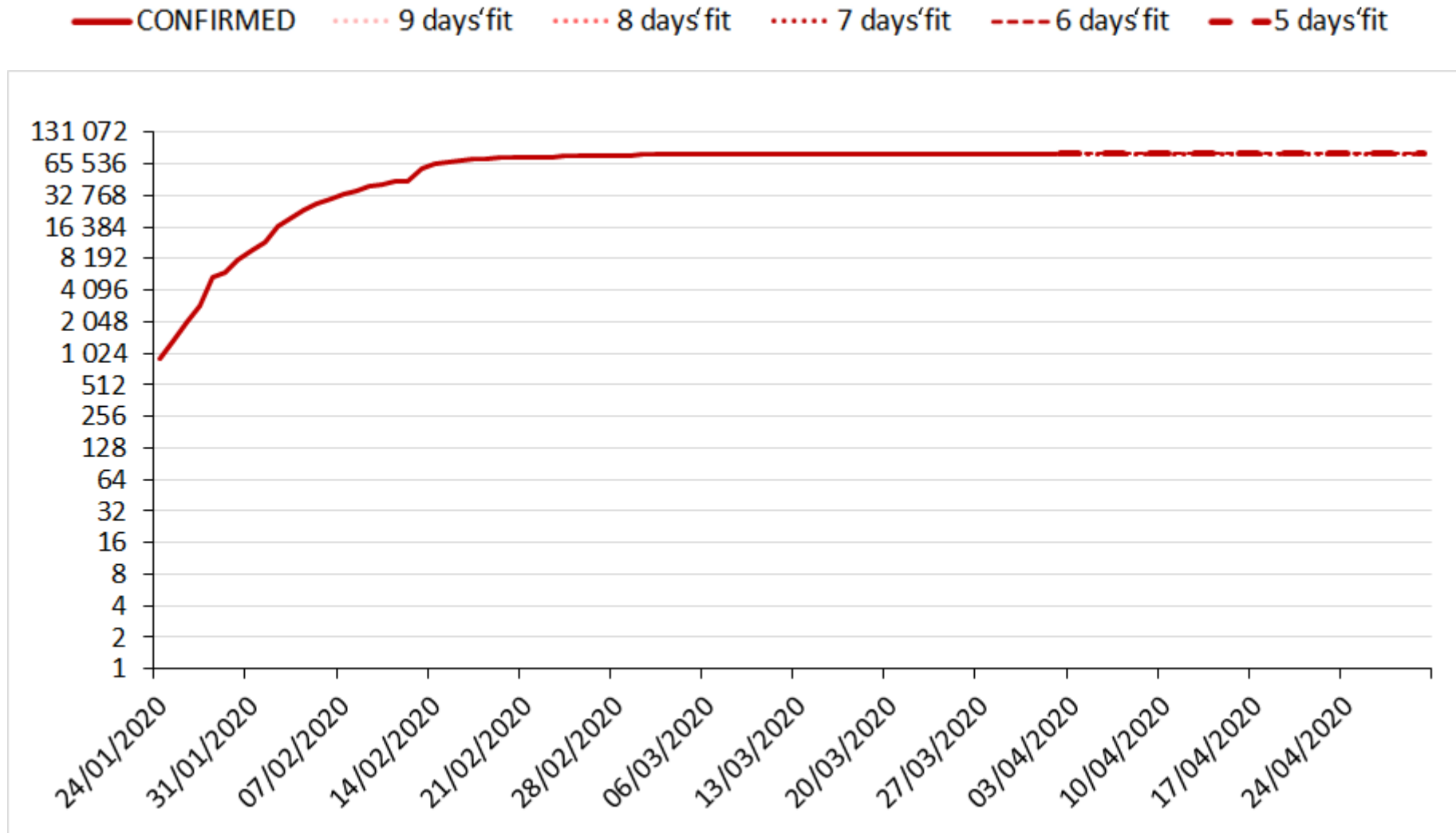
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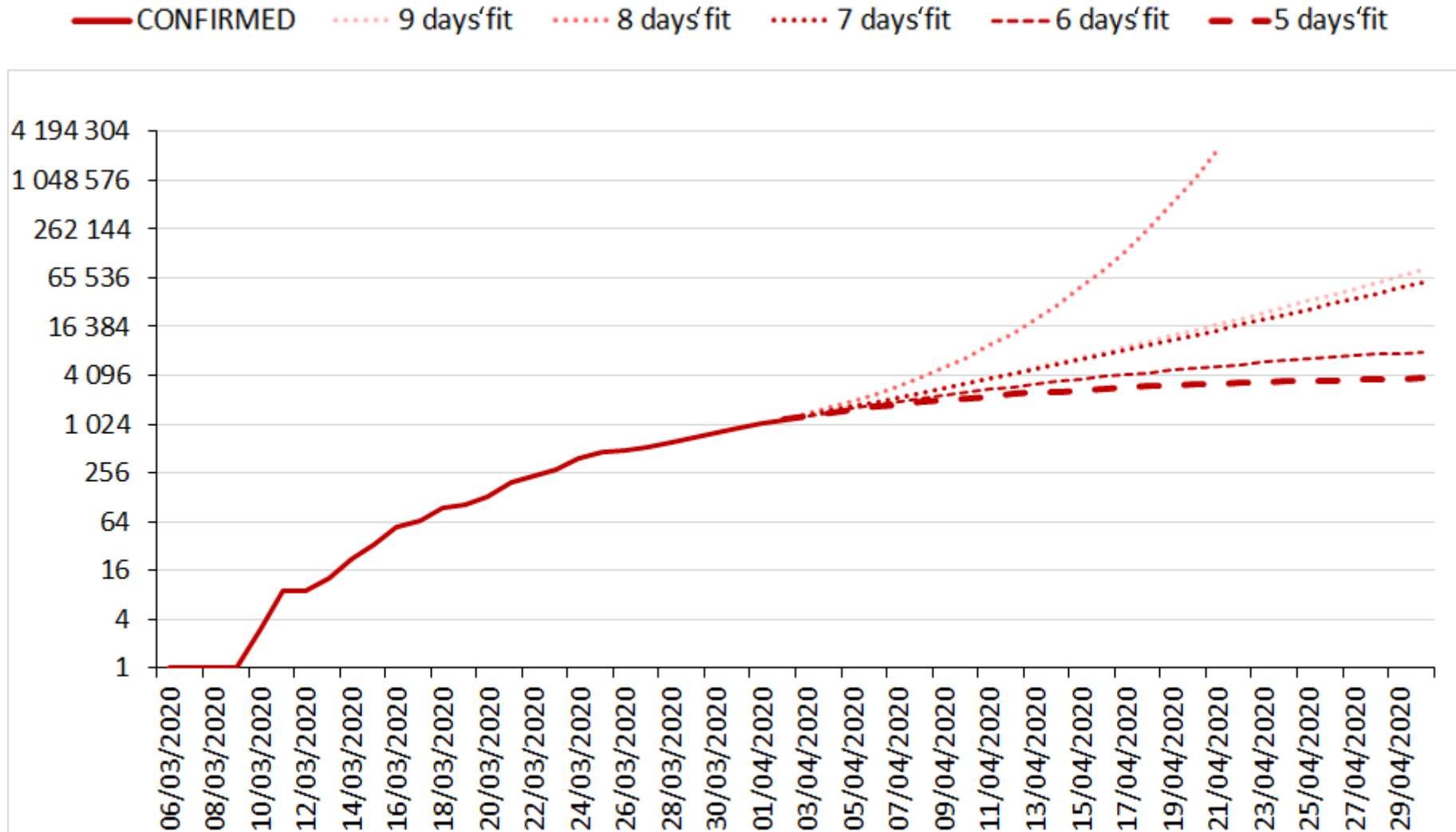
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# China



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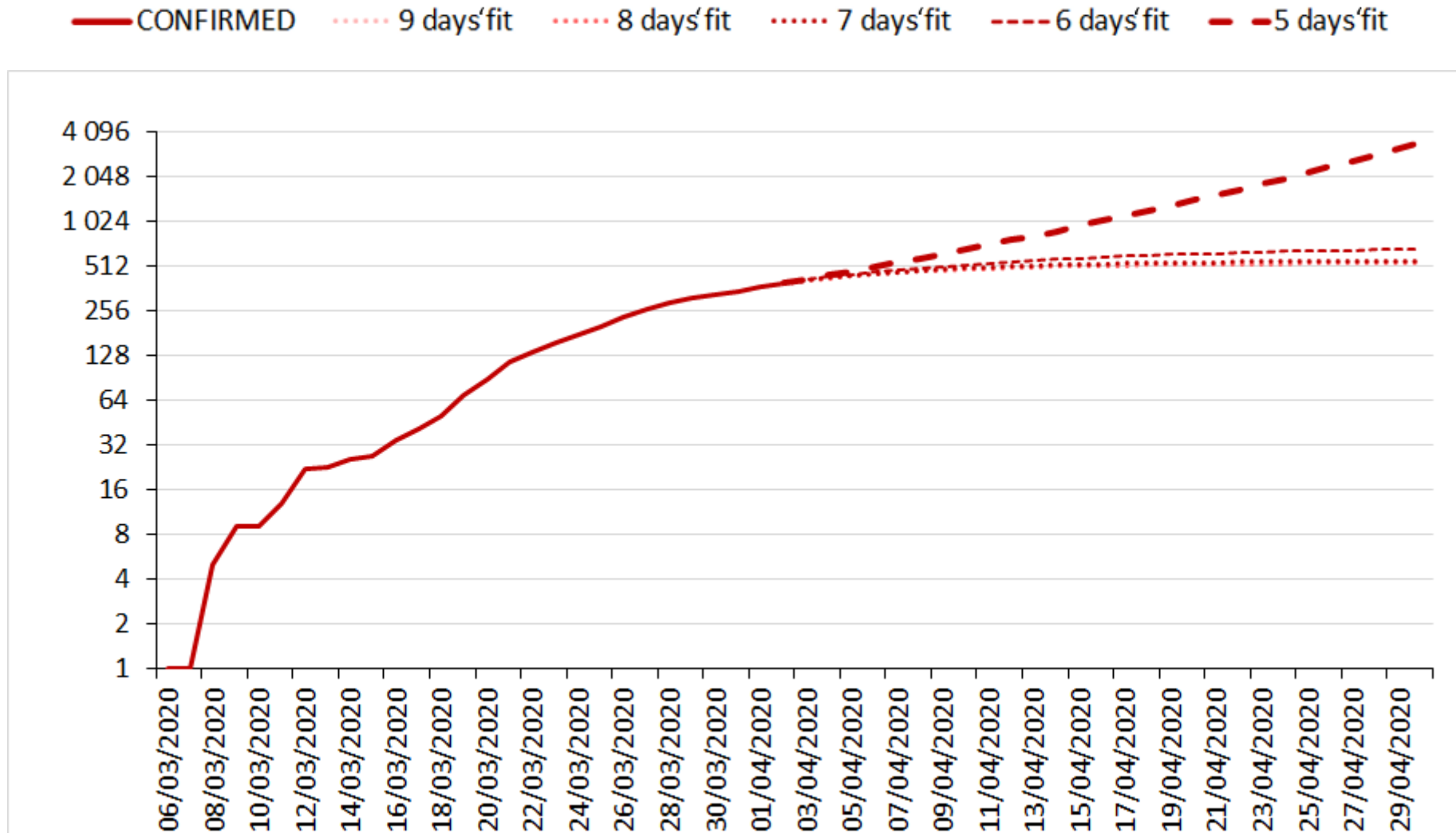
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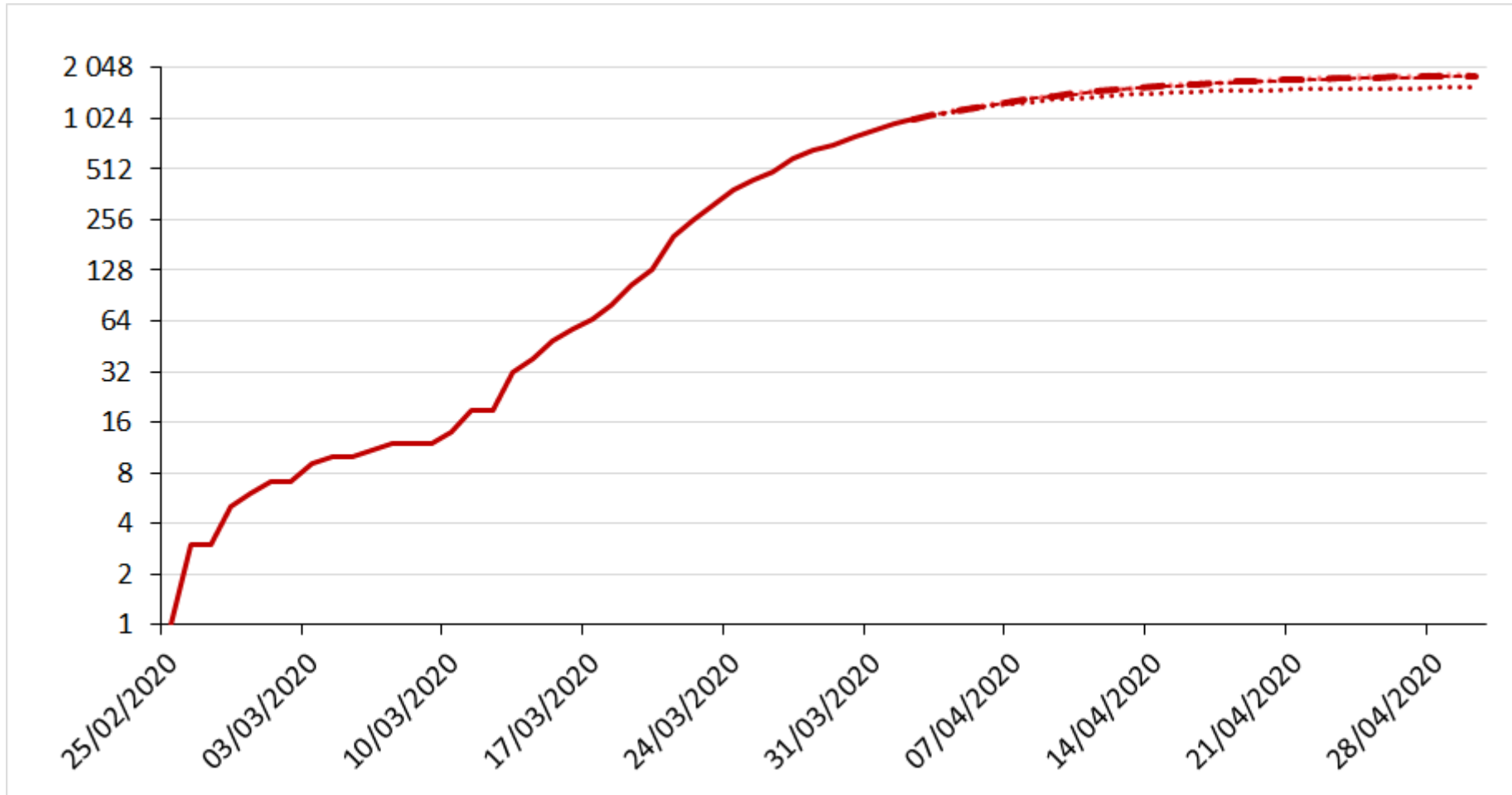
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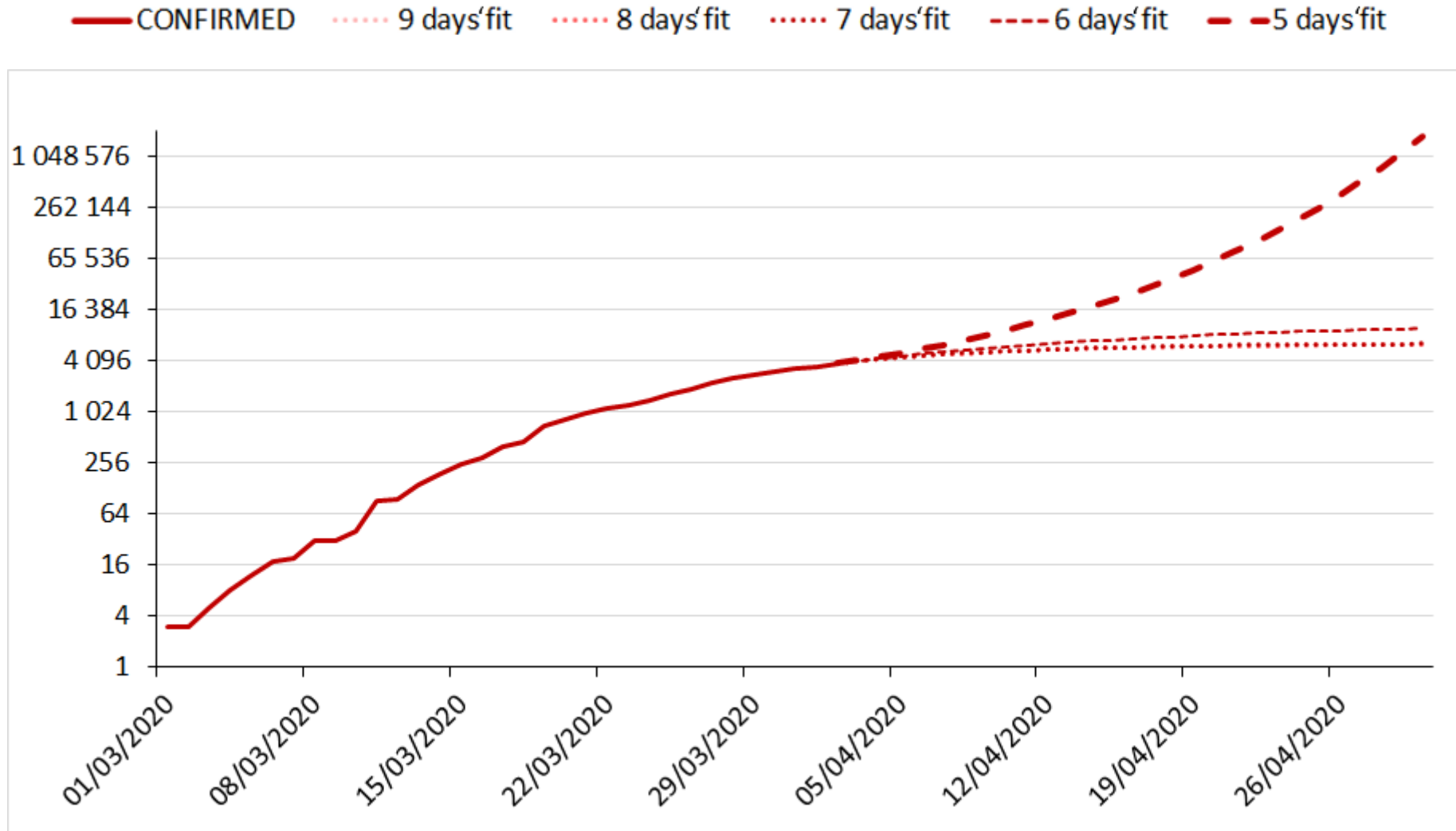
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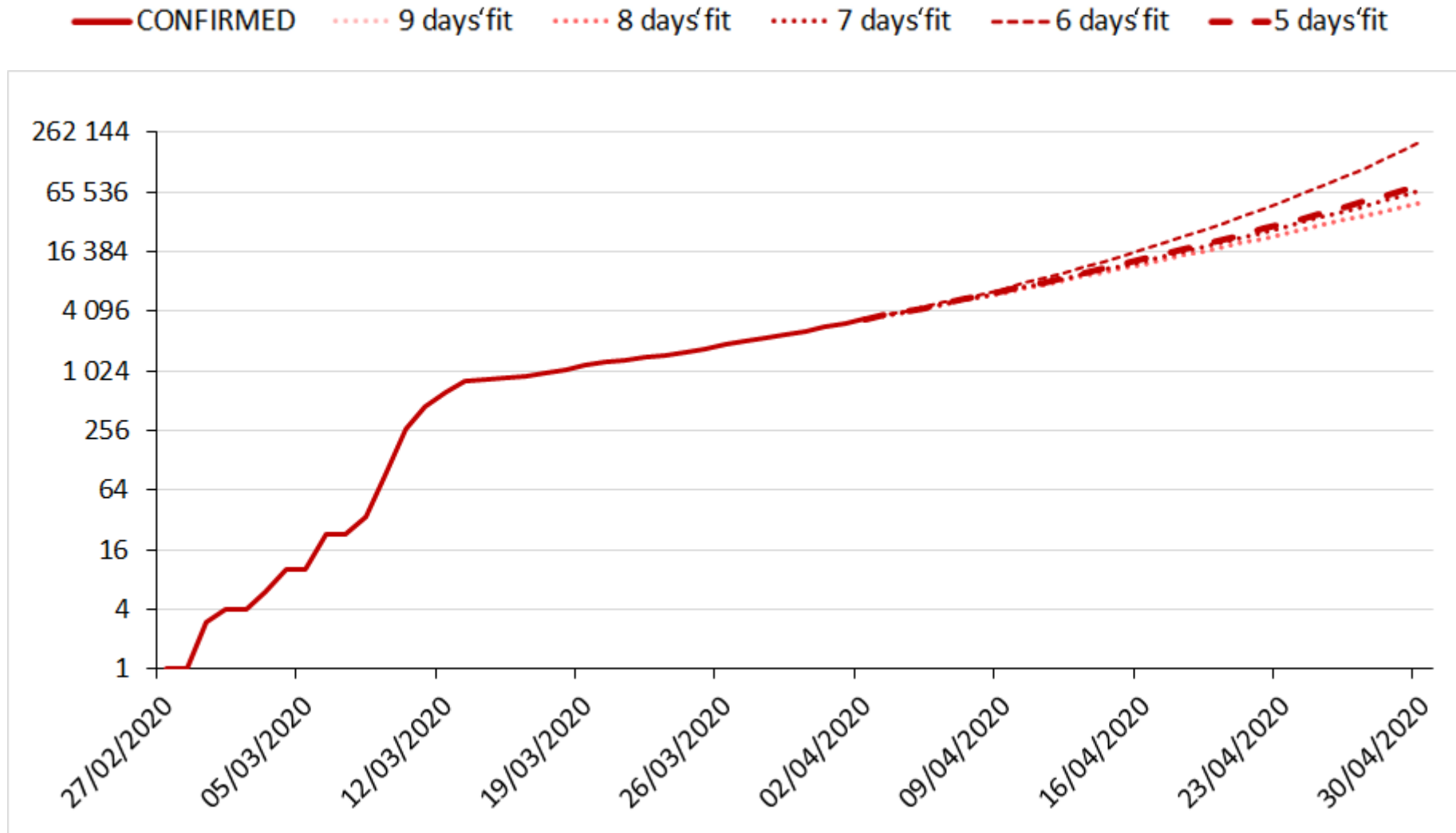
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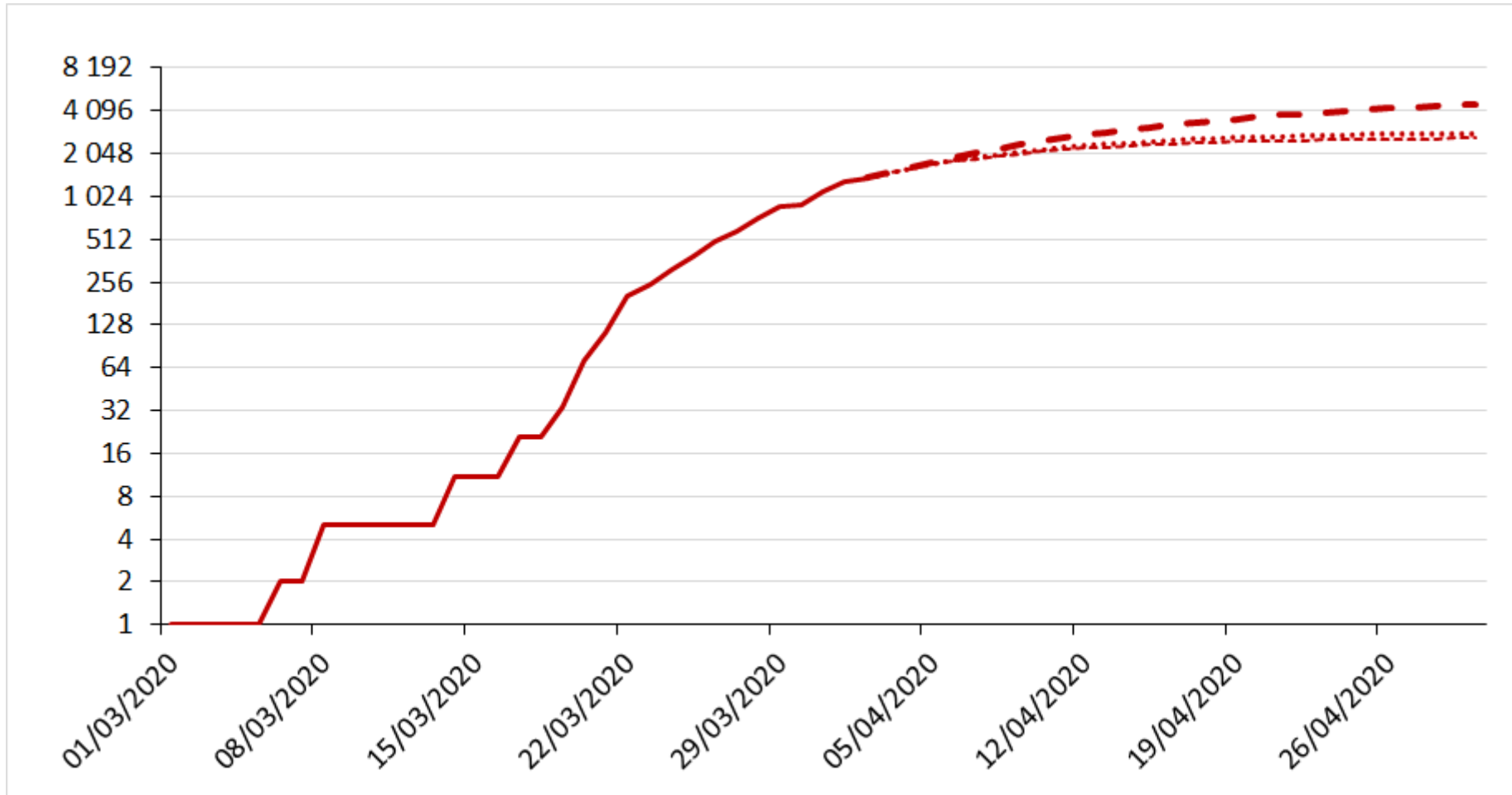
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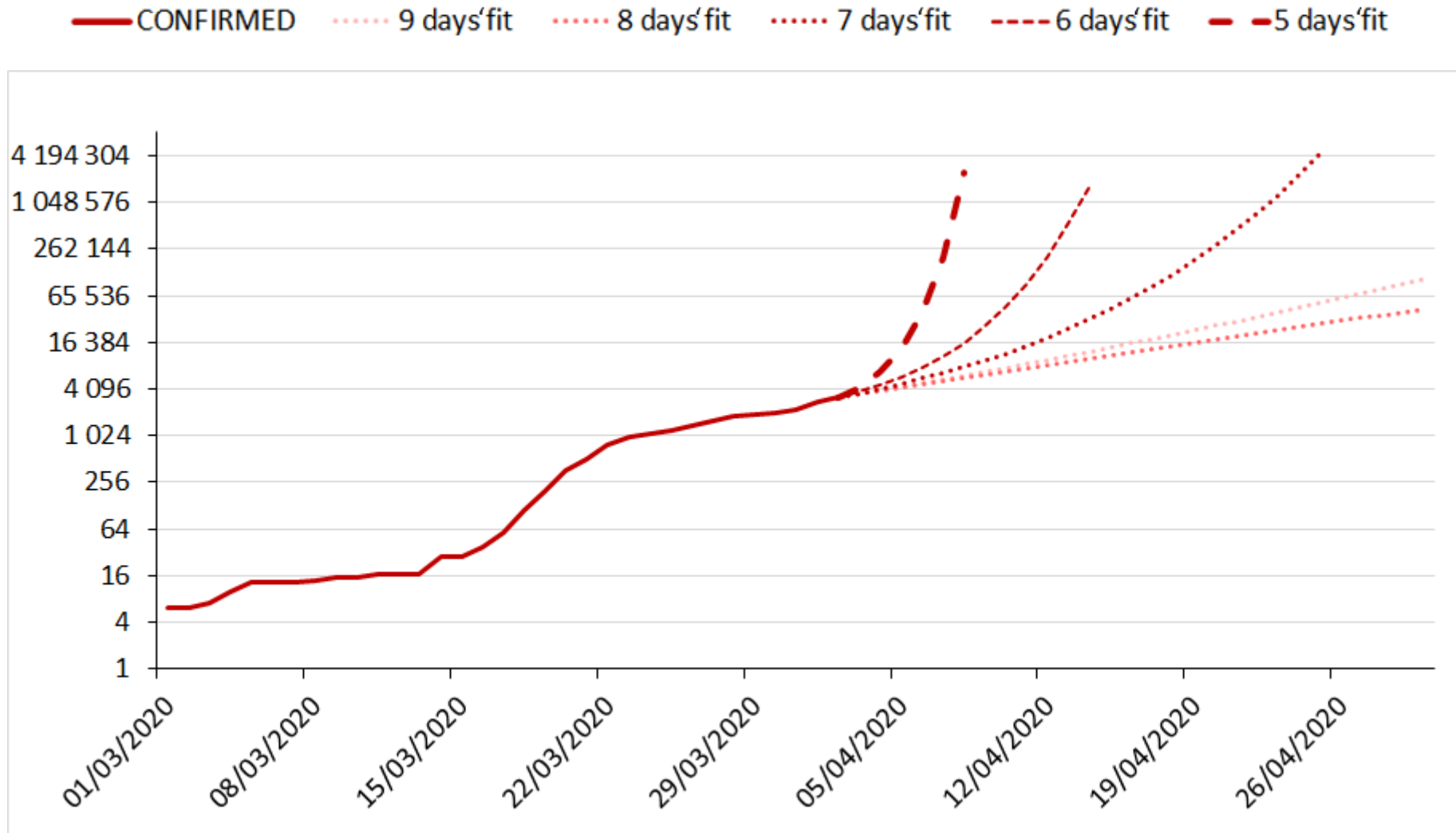
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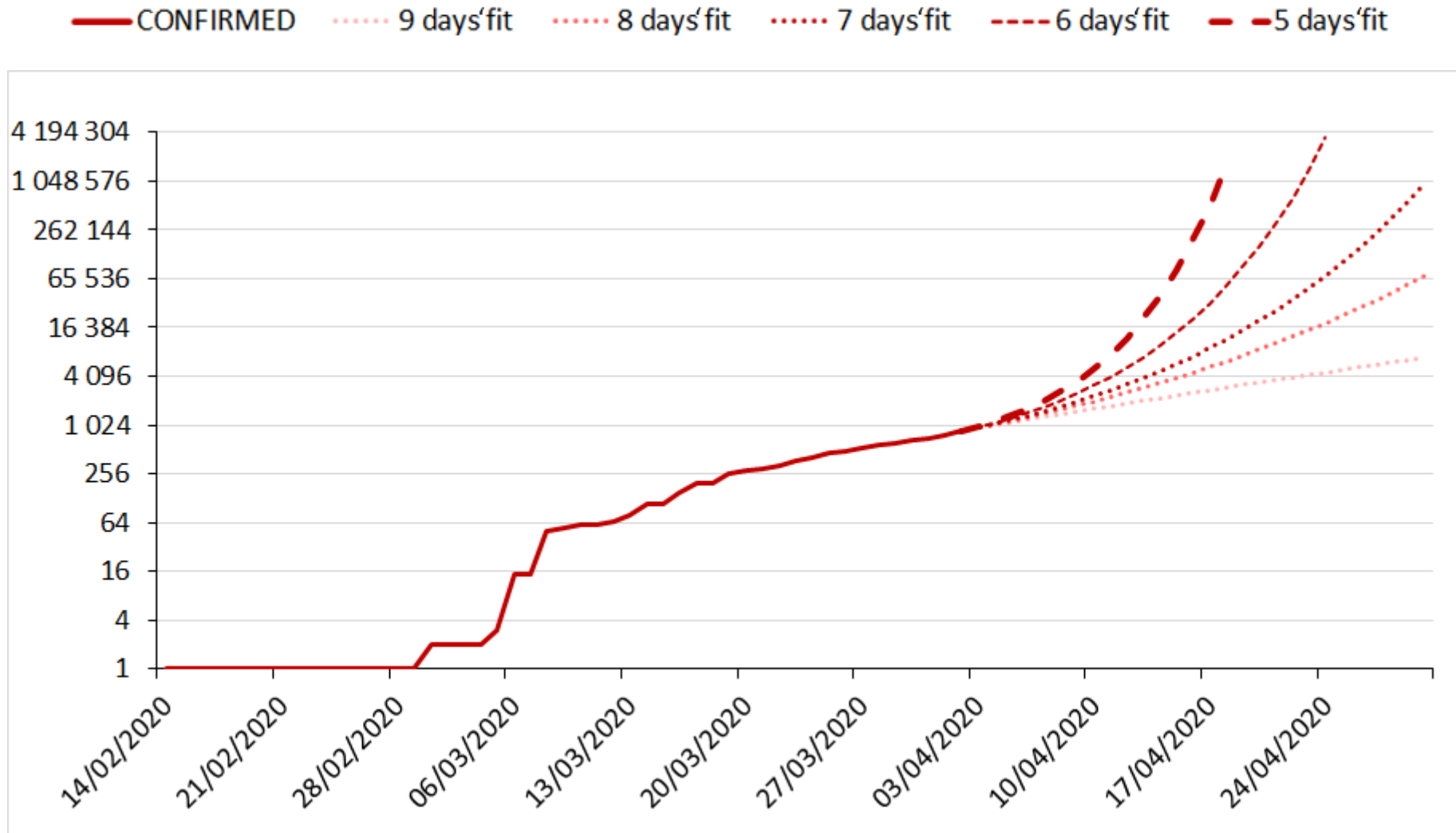
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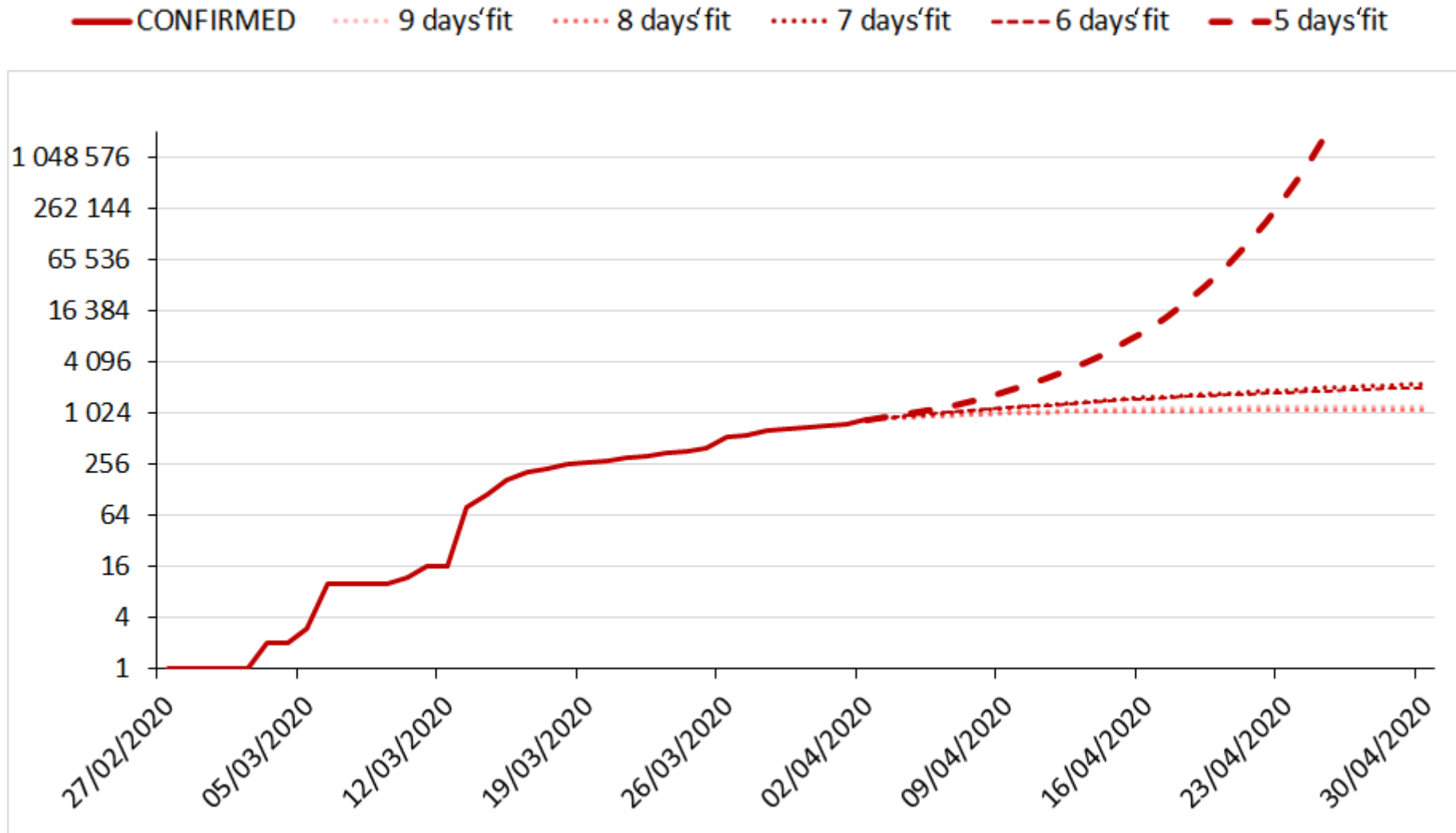
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# Egypt



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# Estonia

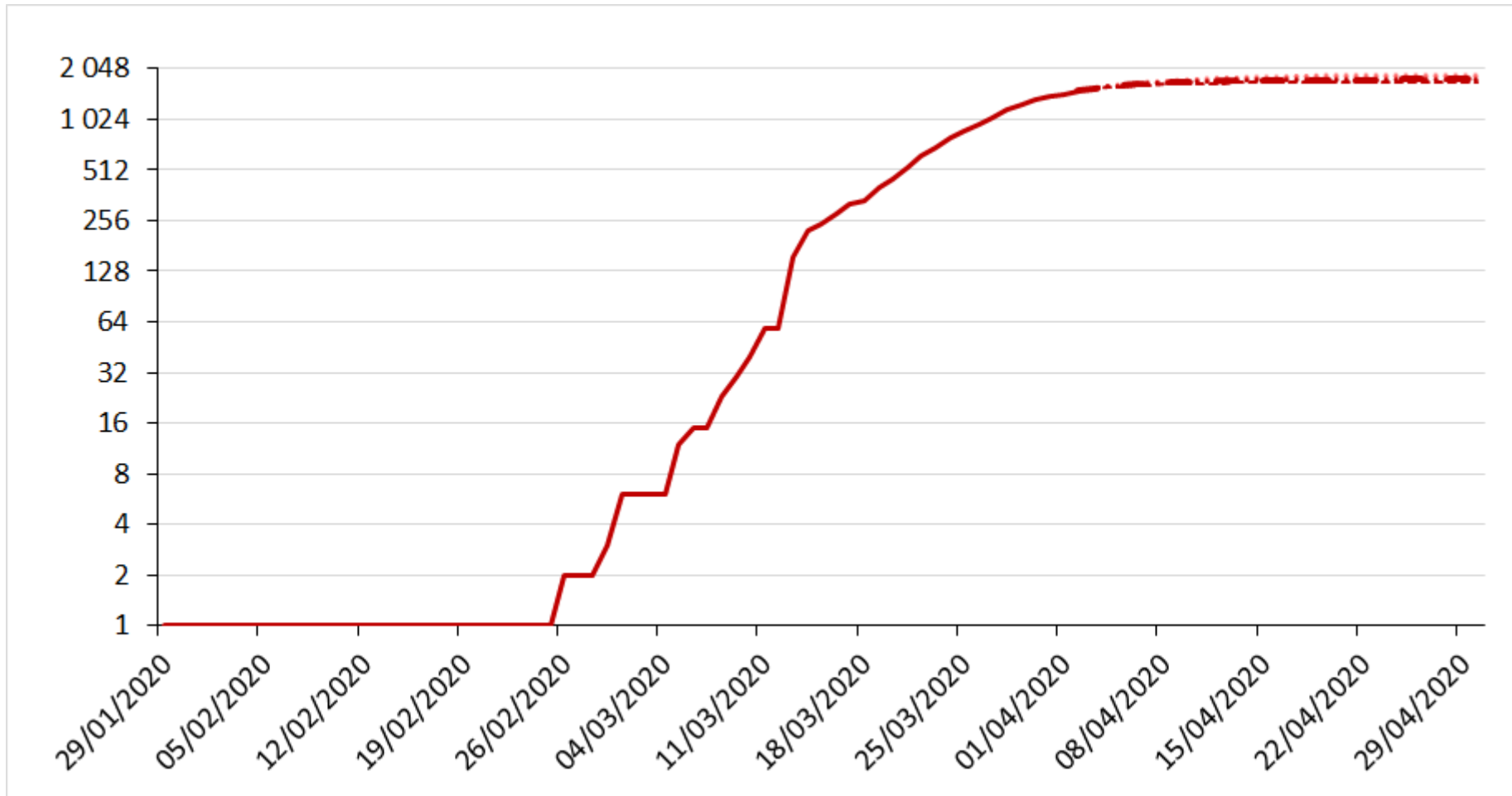


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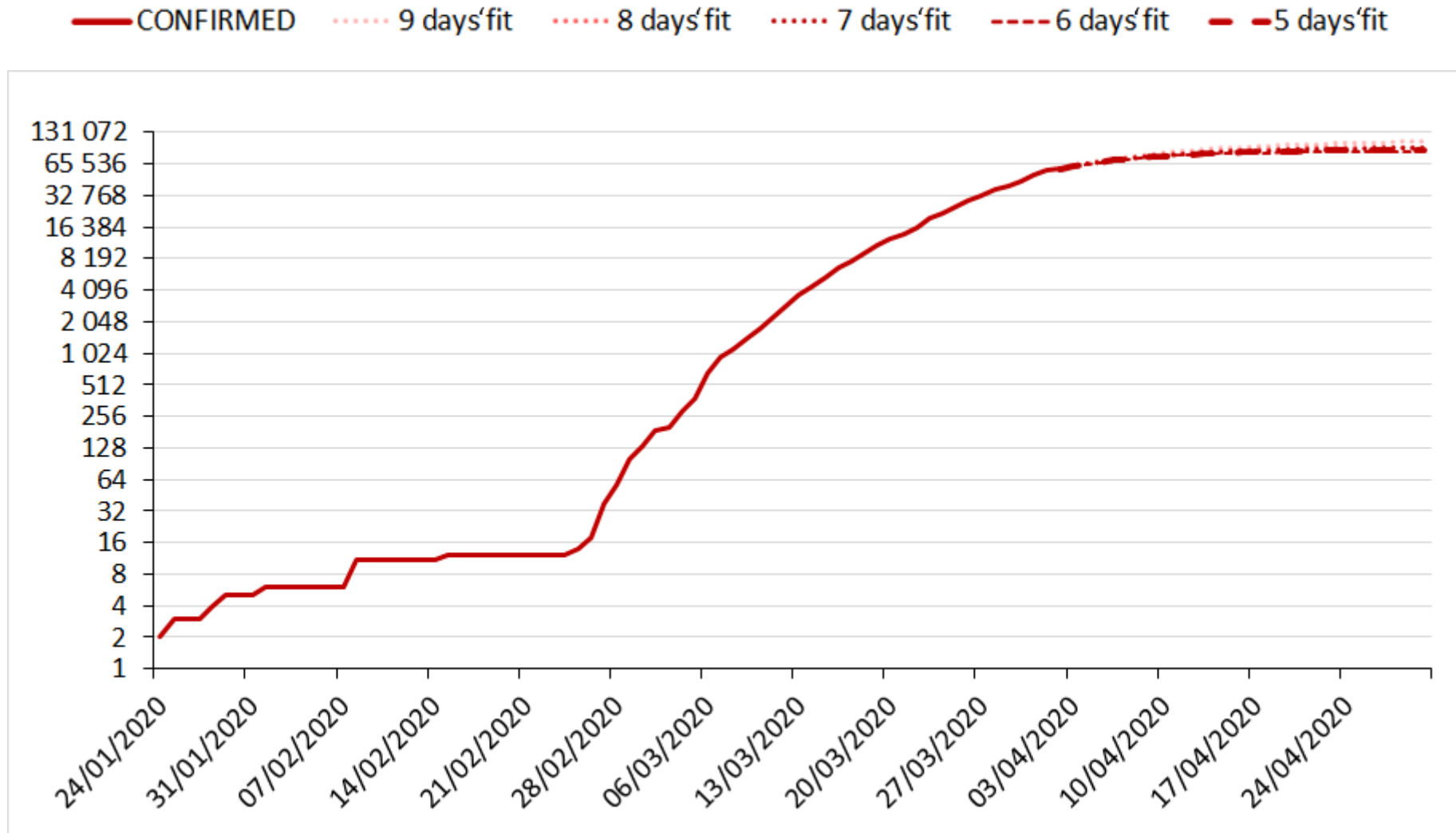
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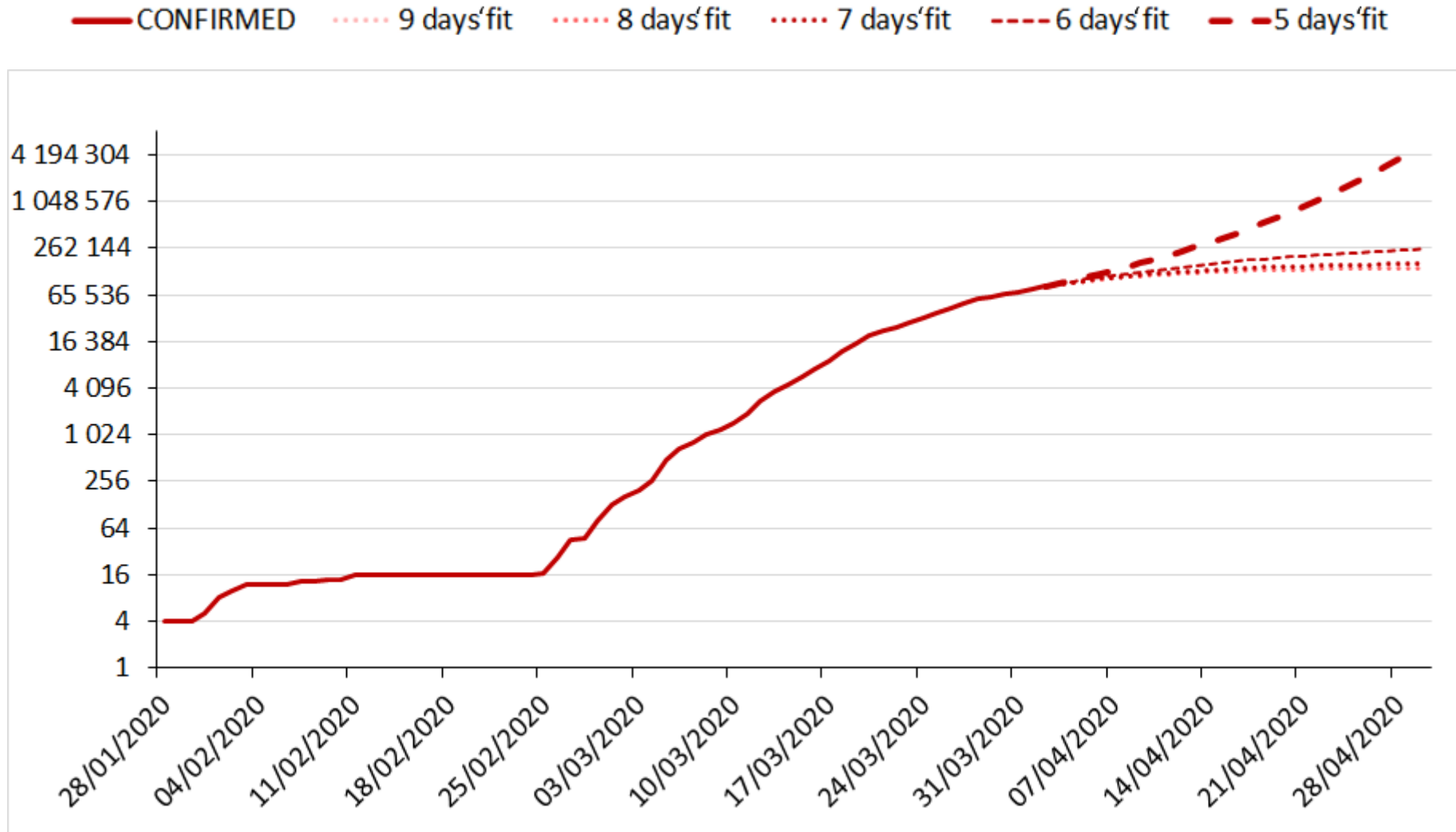
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# France



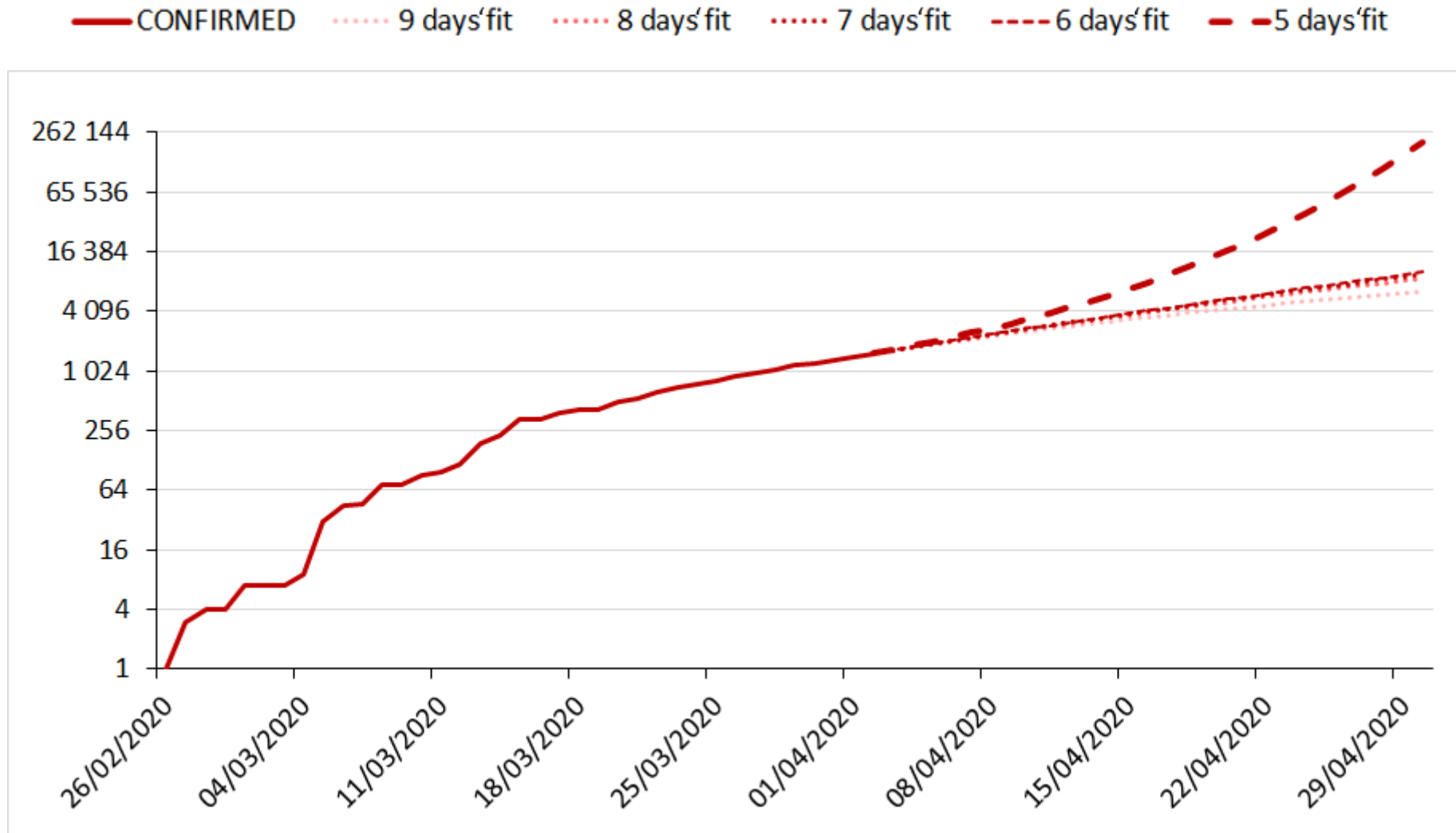
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# Germany



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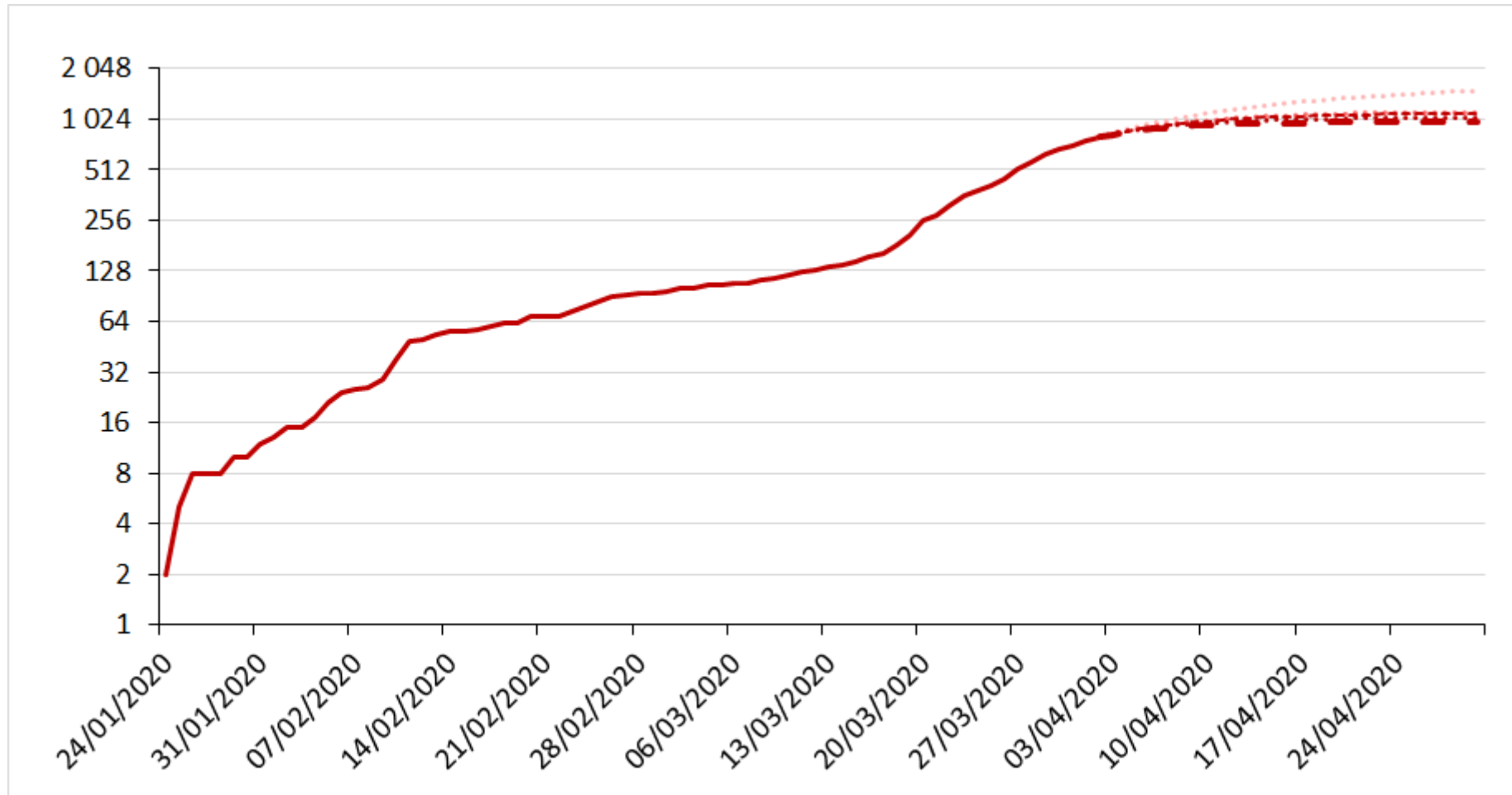
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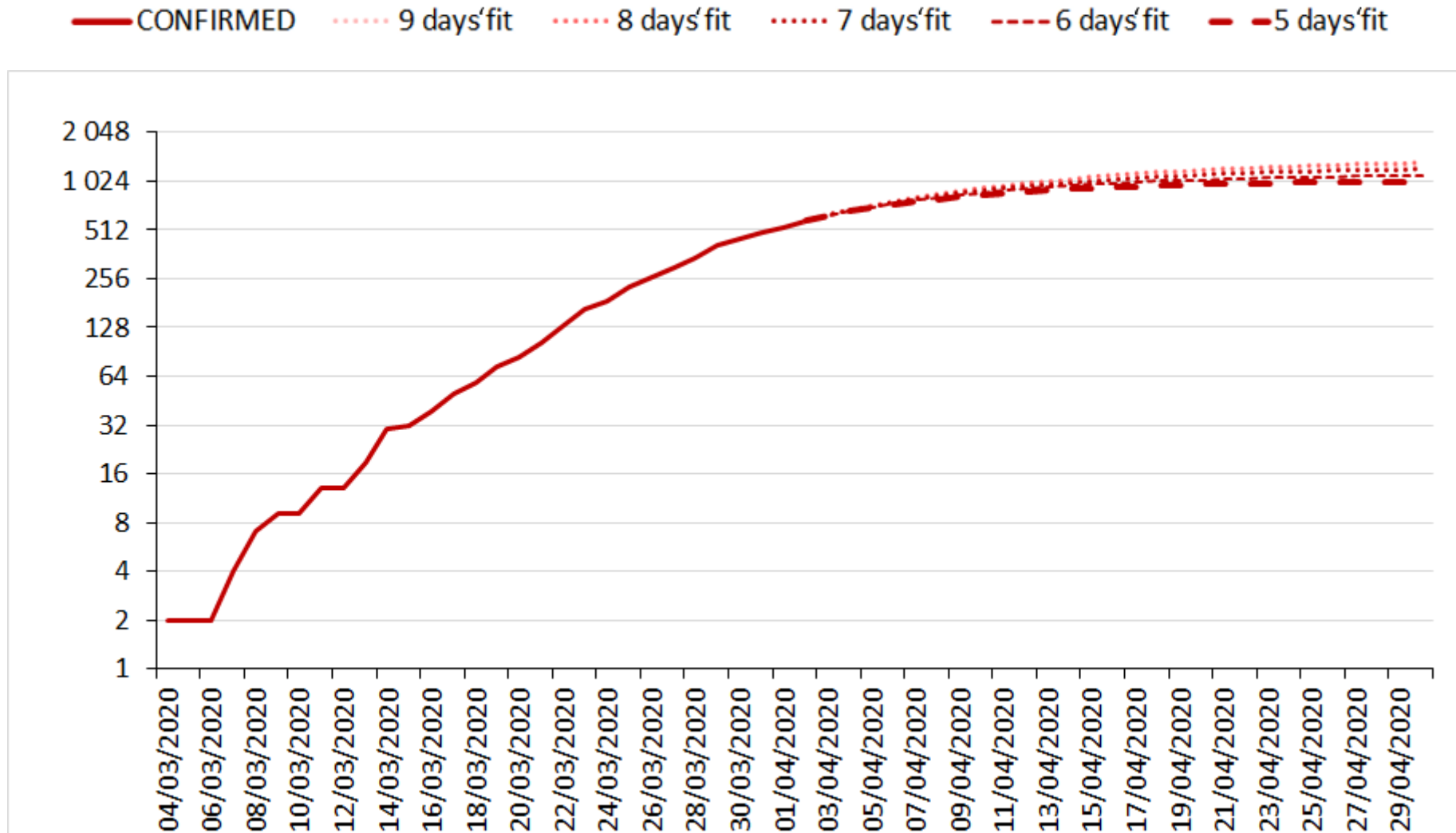
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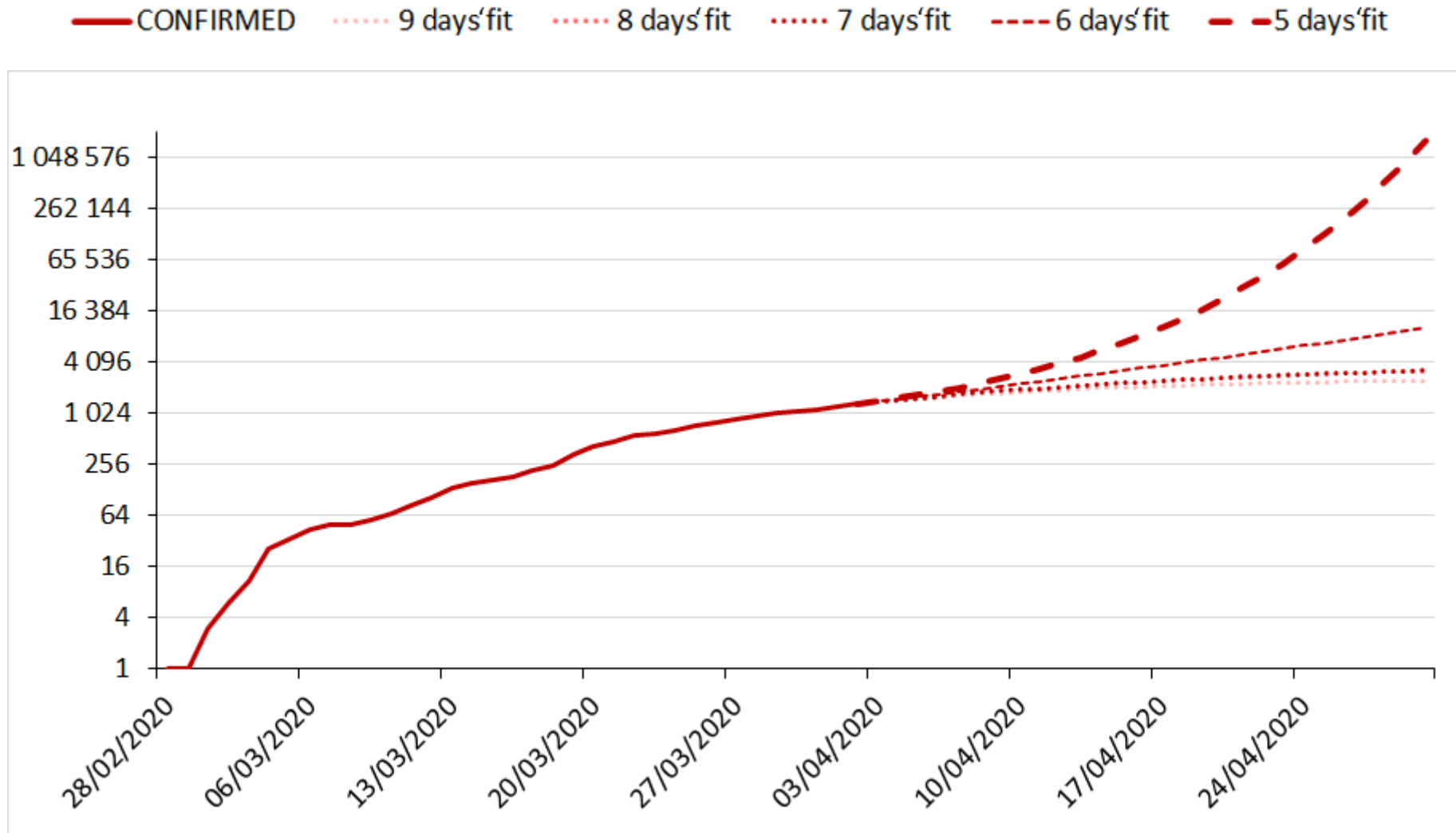
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# Hungary



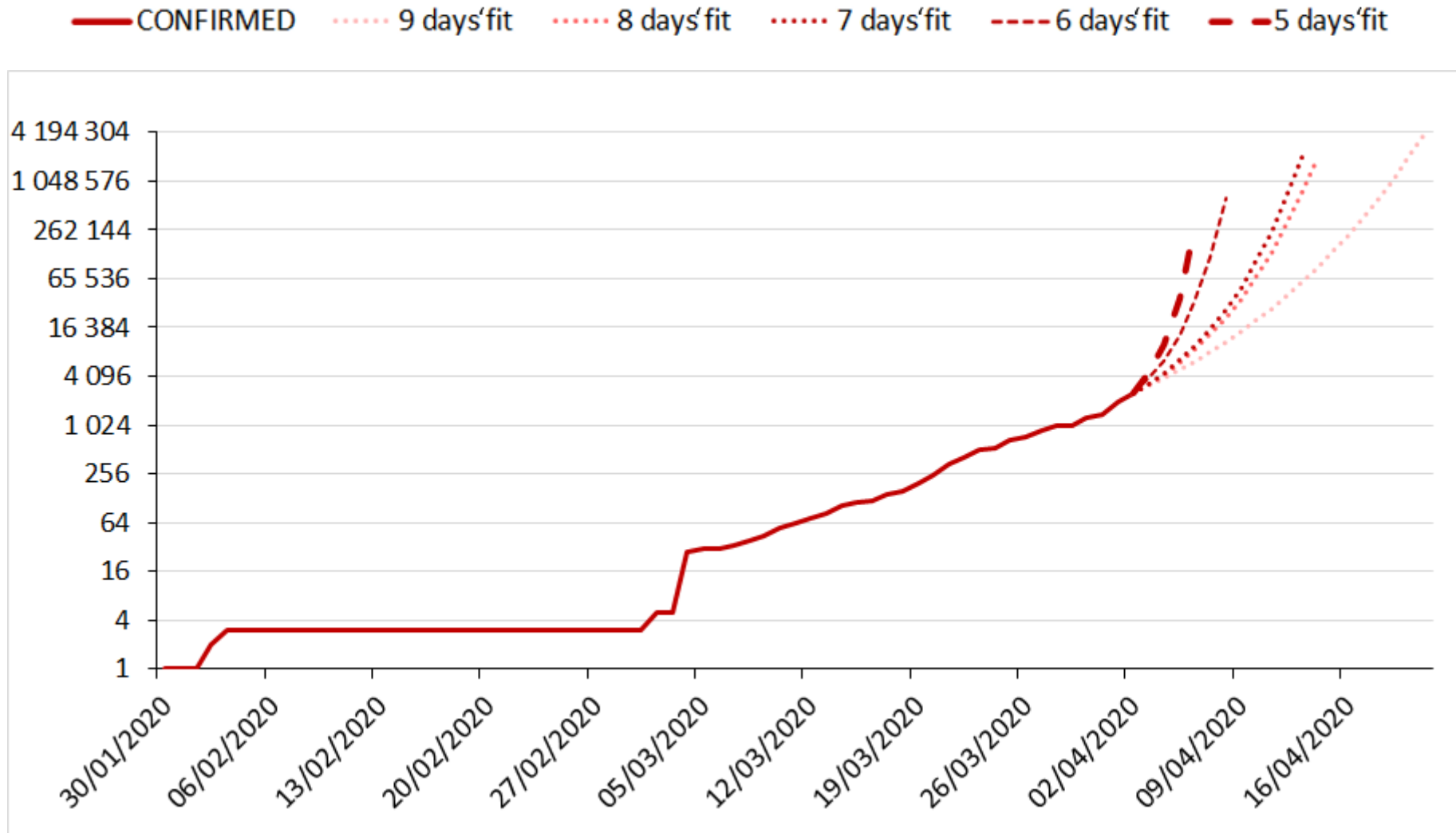
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# Iceland



Data: The Johns Hopkins University, Politolog.com

# India

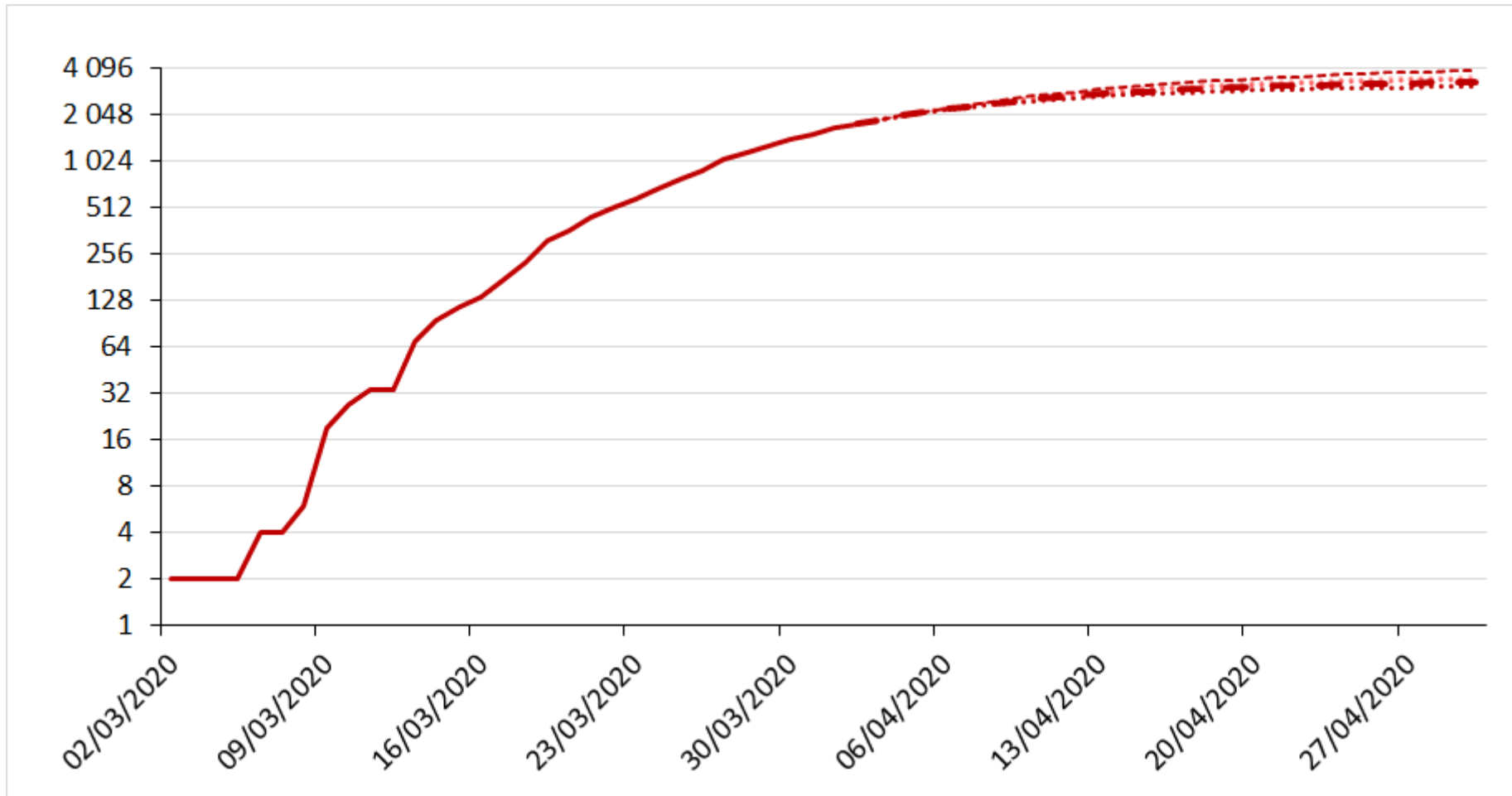


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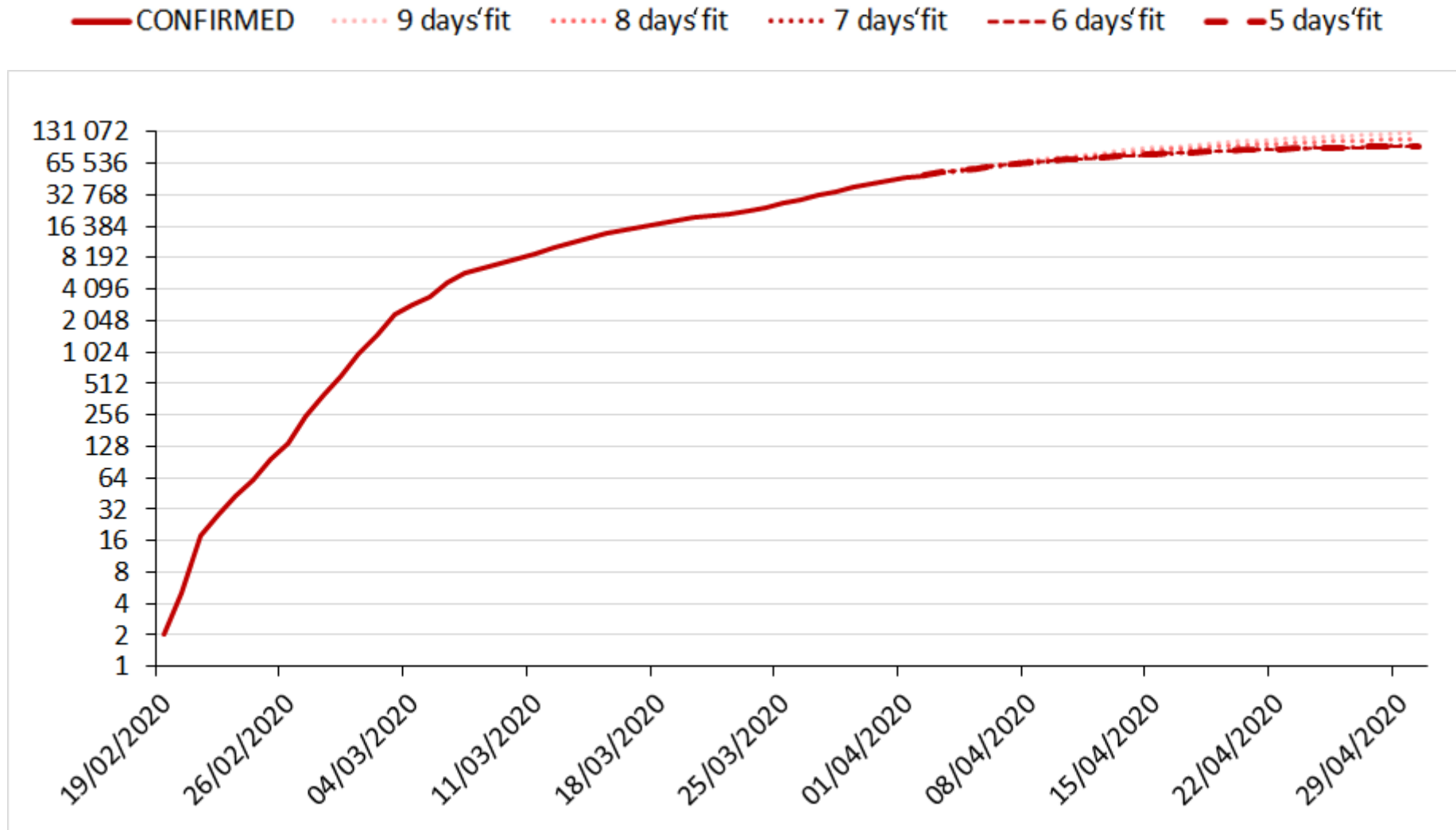
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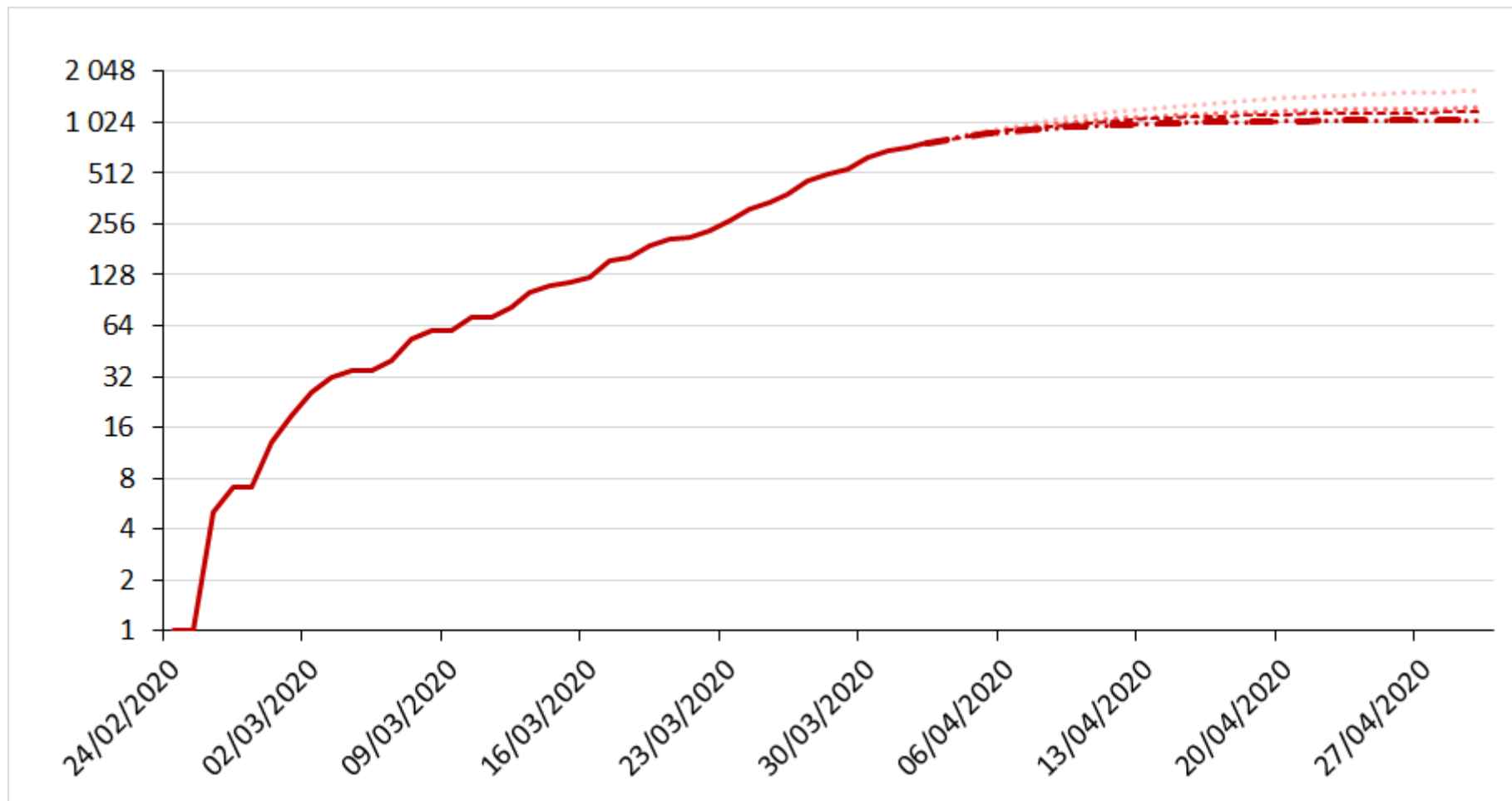
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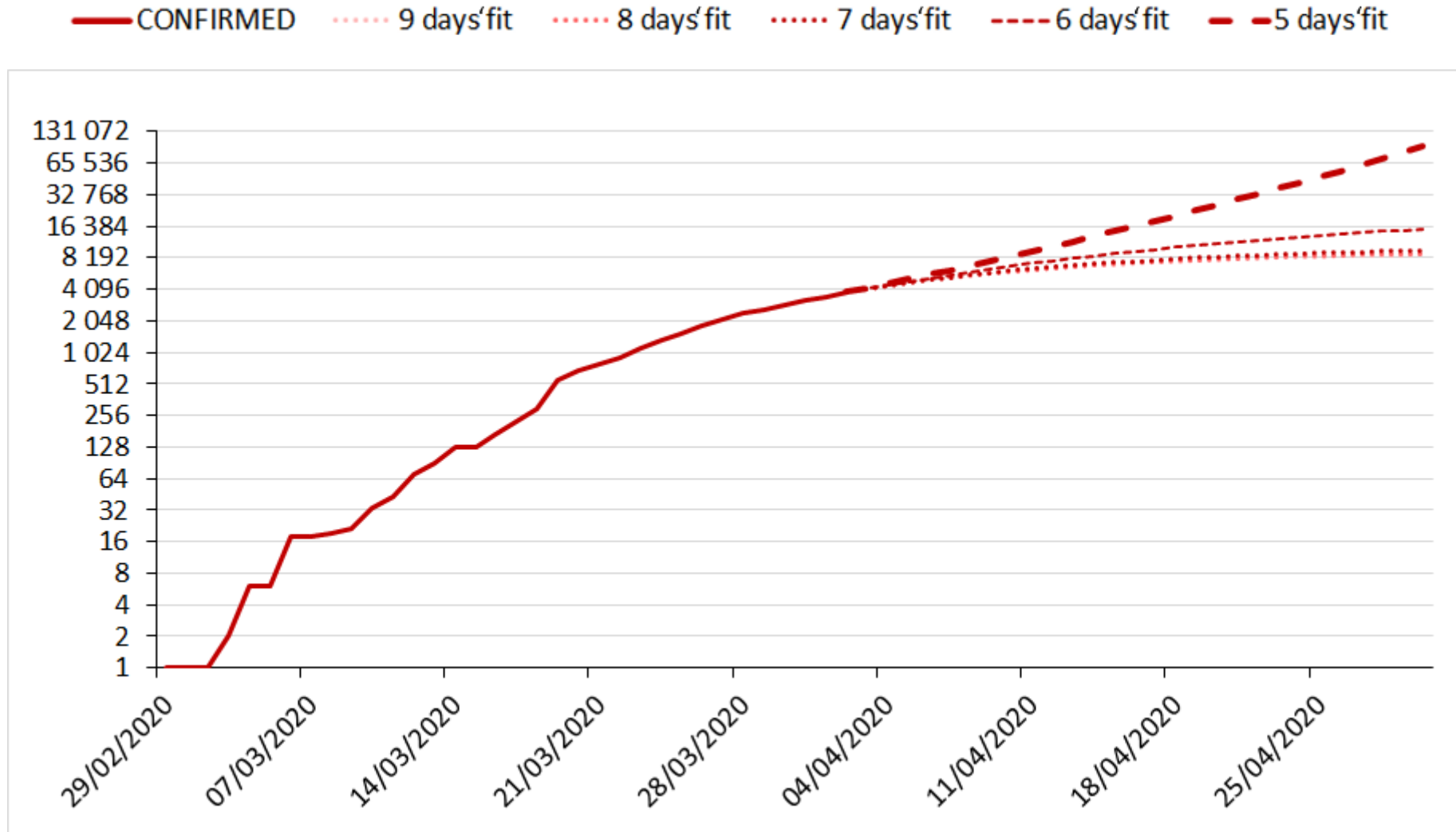
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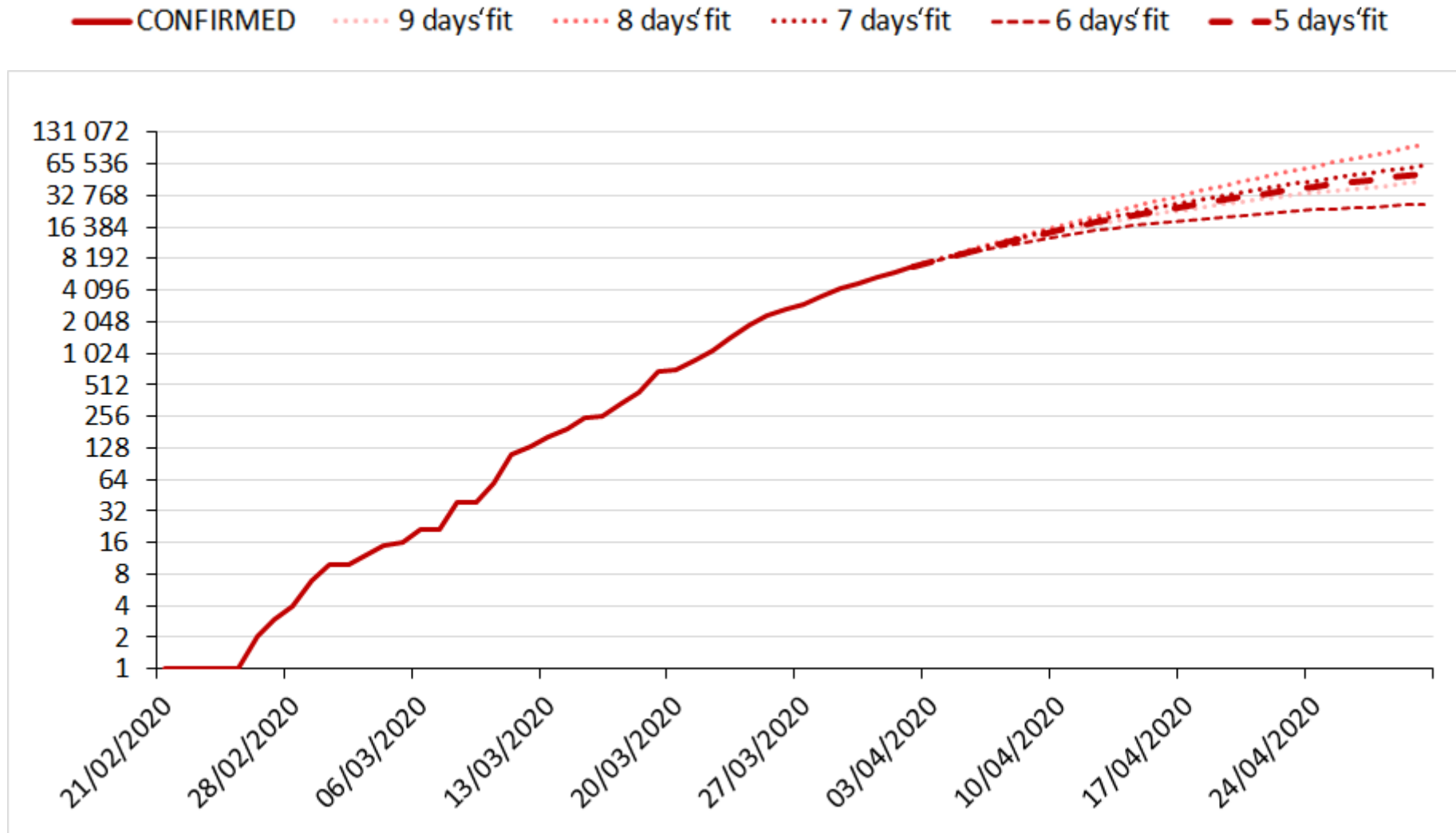
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# Ireland



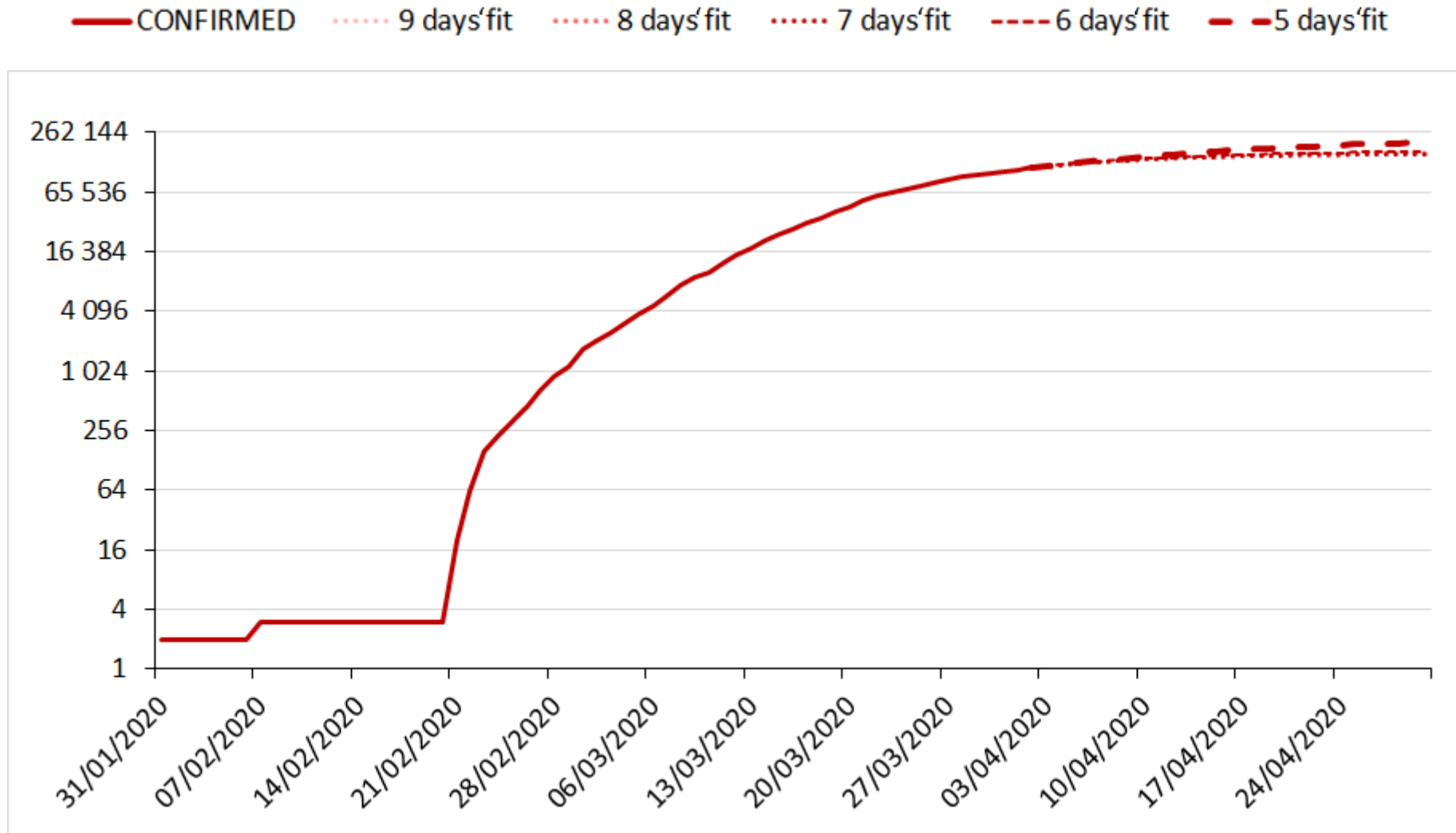
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# Israel



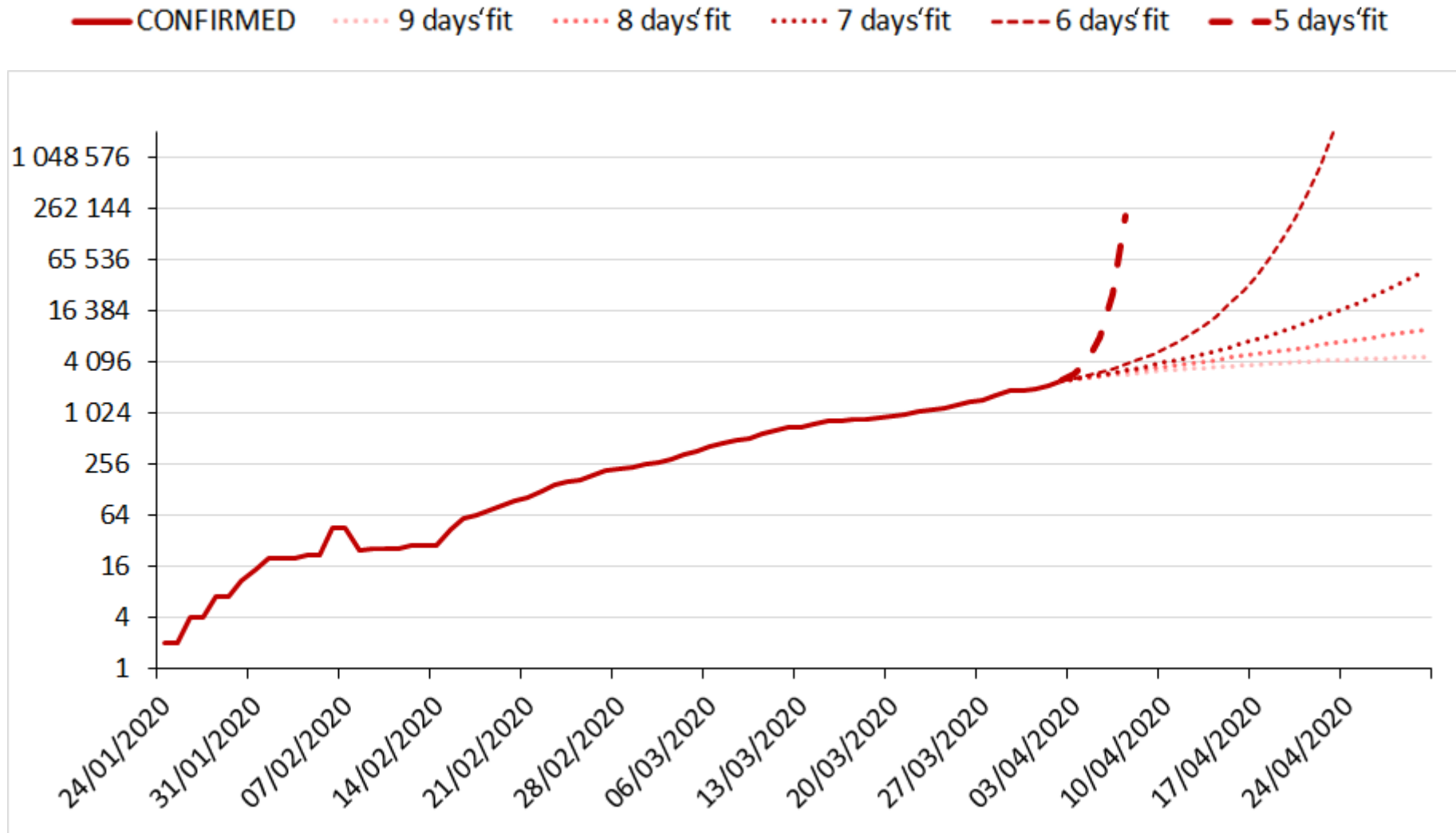
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# Italy



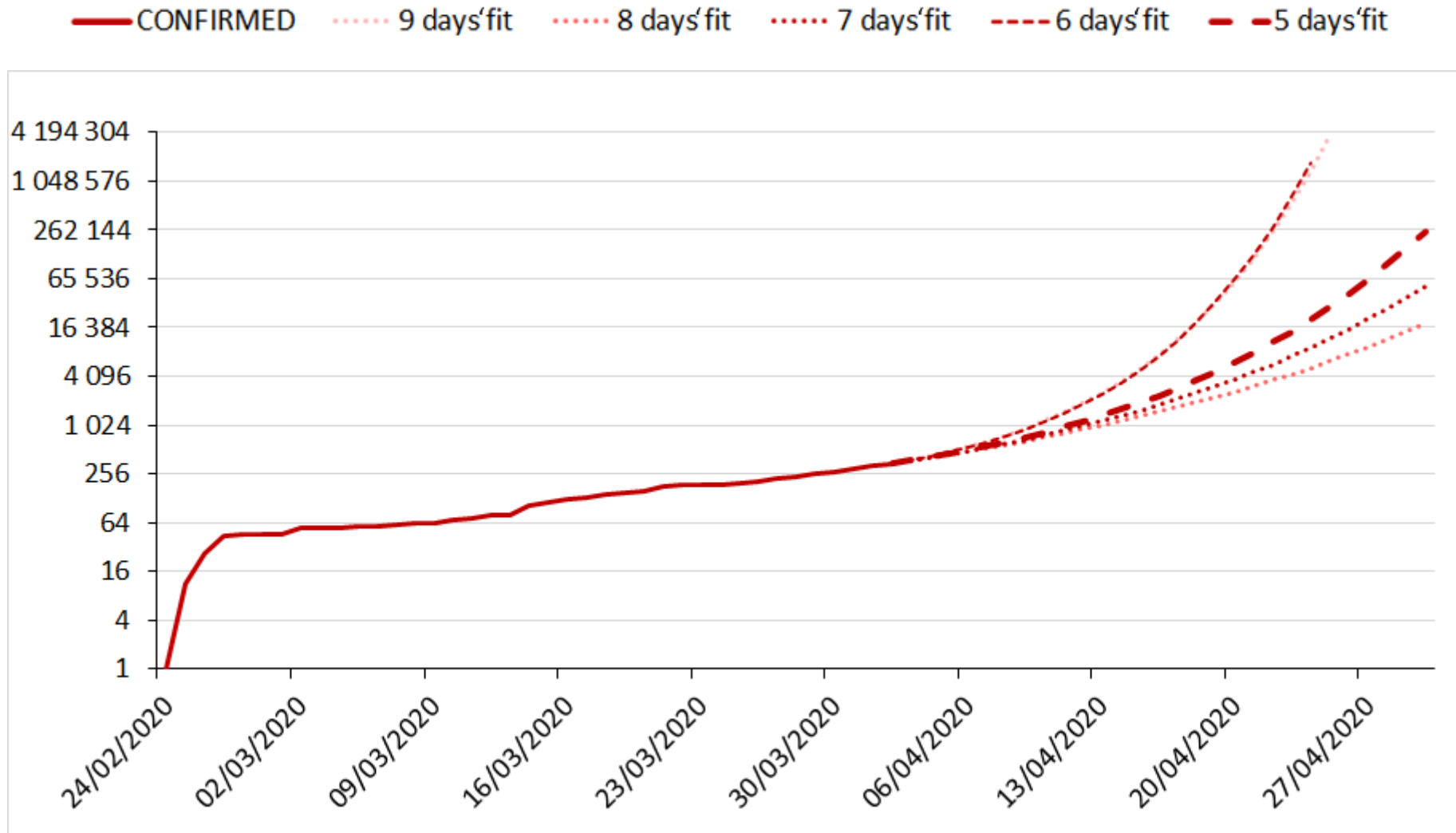
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# Japan



Data: The Johns Hopkins University, Politolog.com

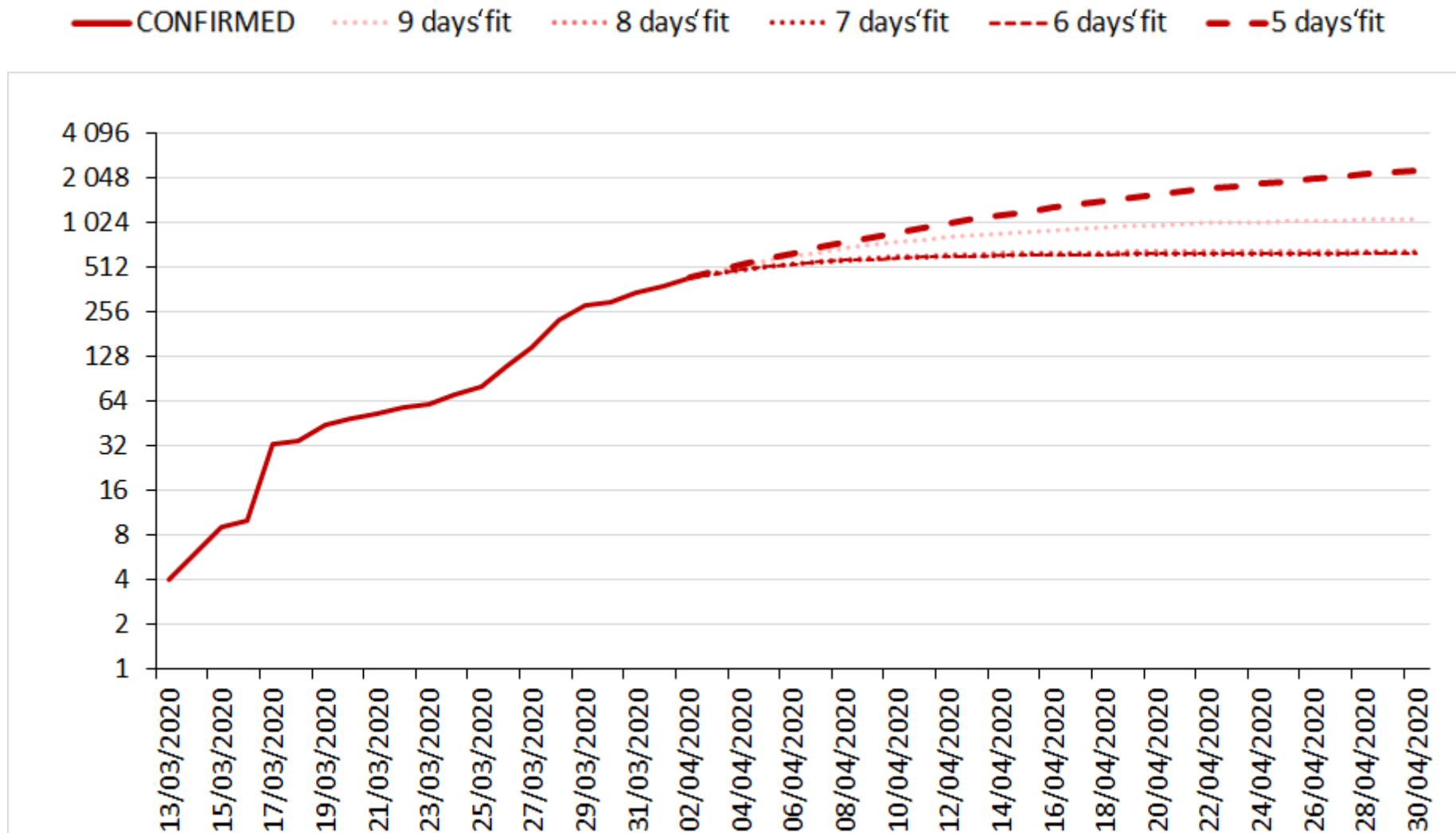
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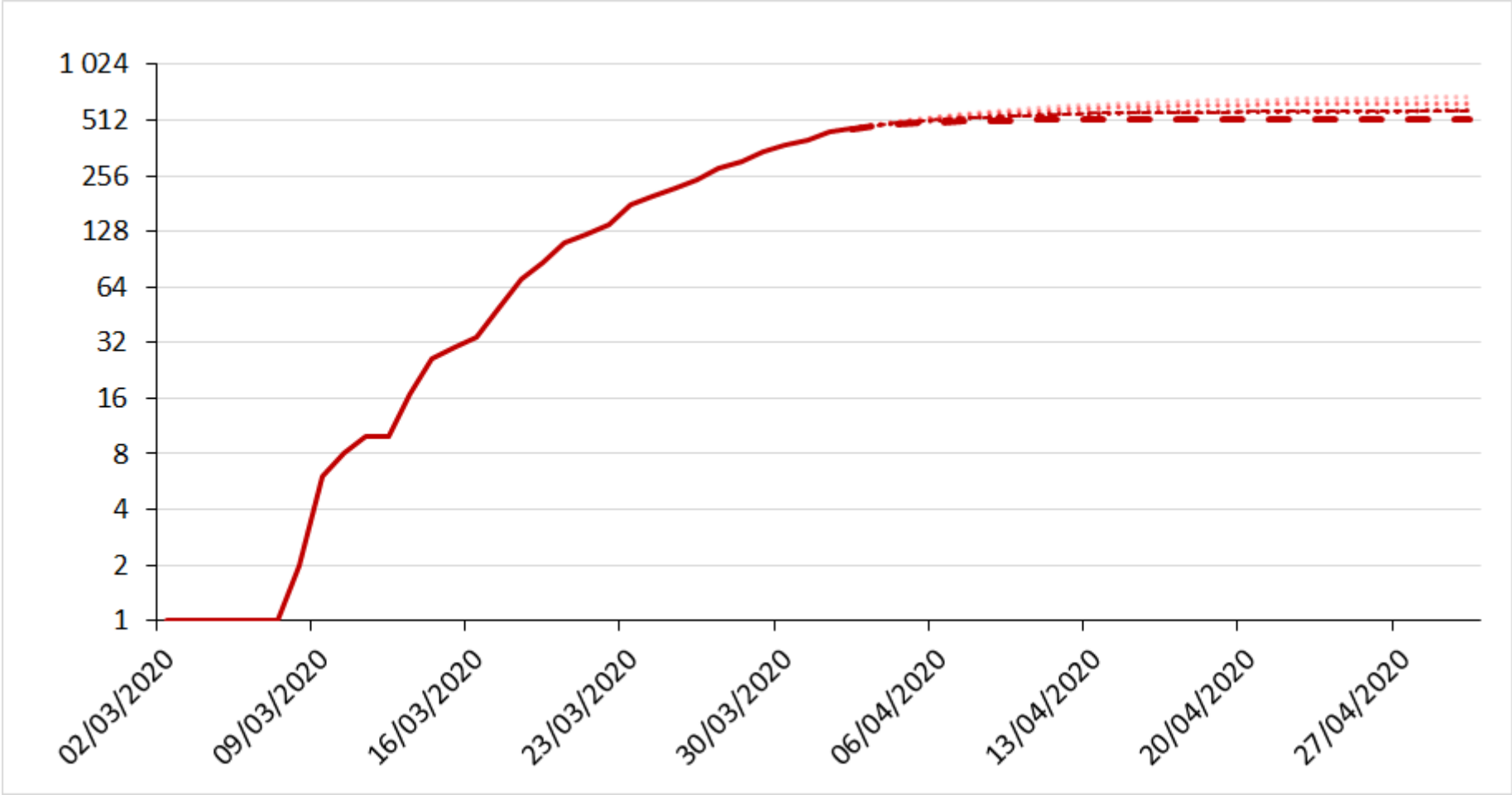
# Kazakhstan



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# Latvia

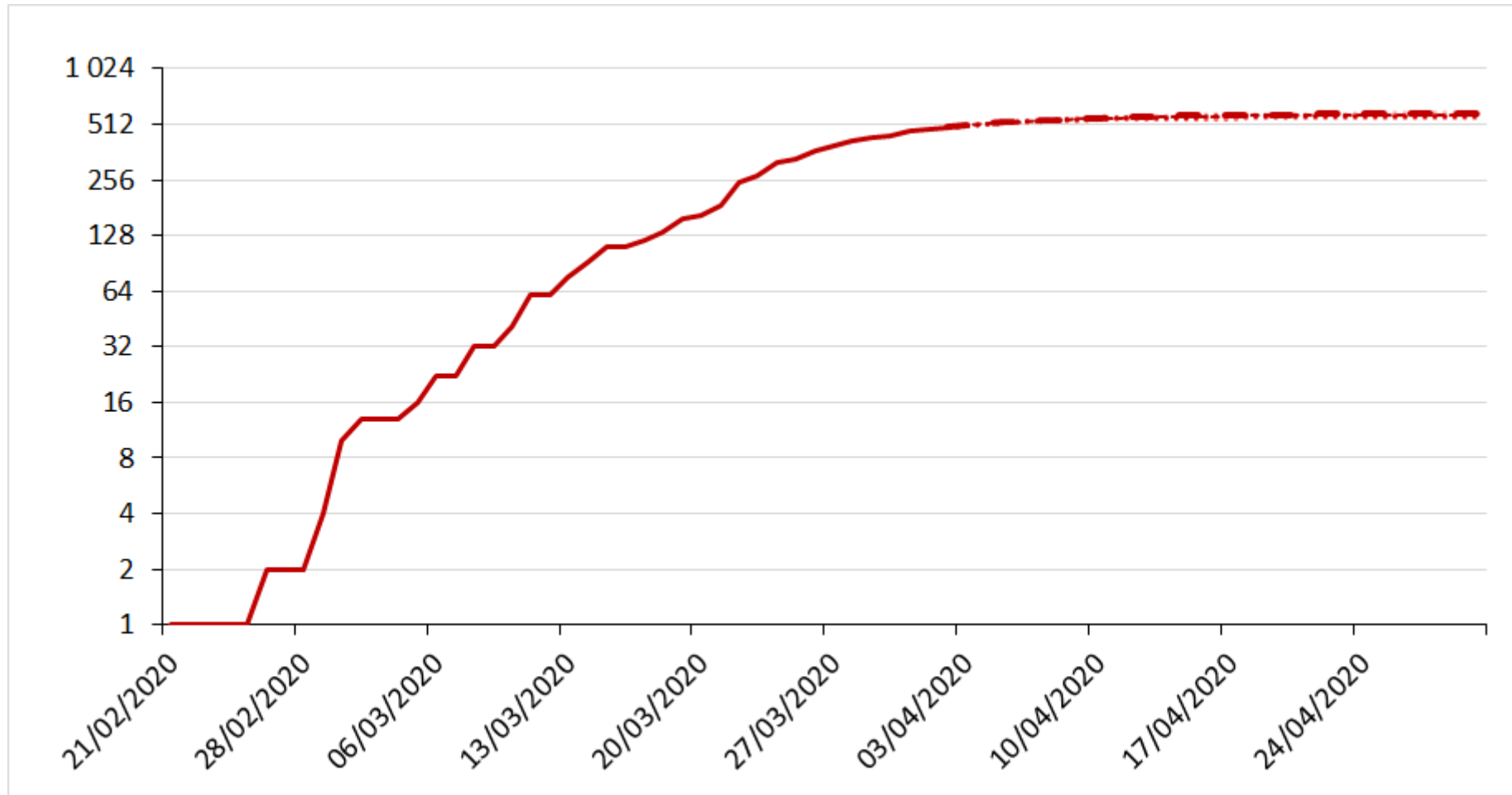
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# Lebanon

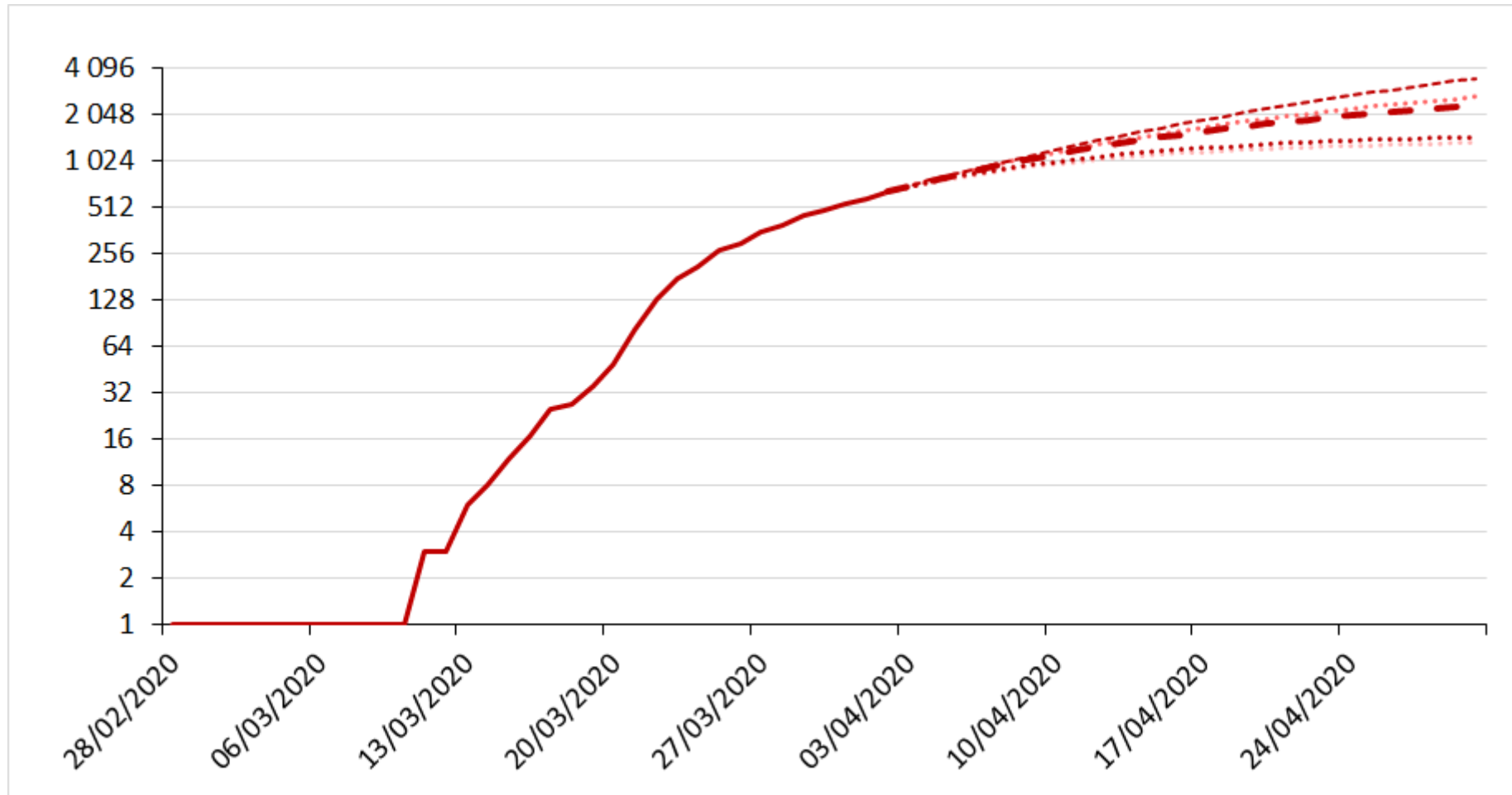
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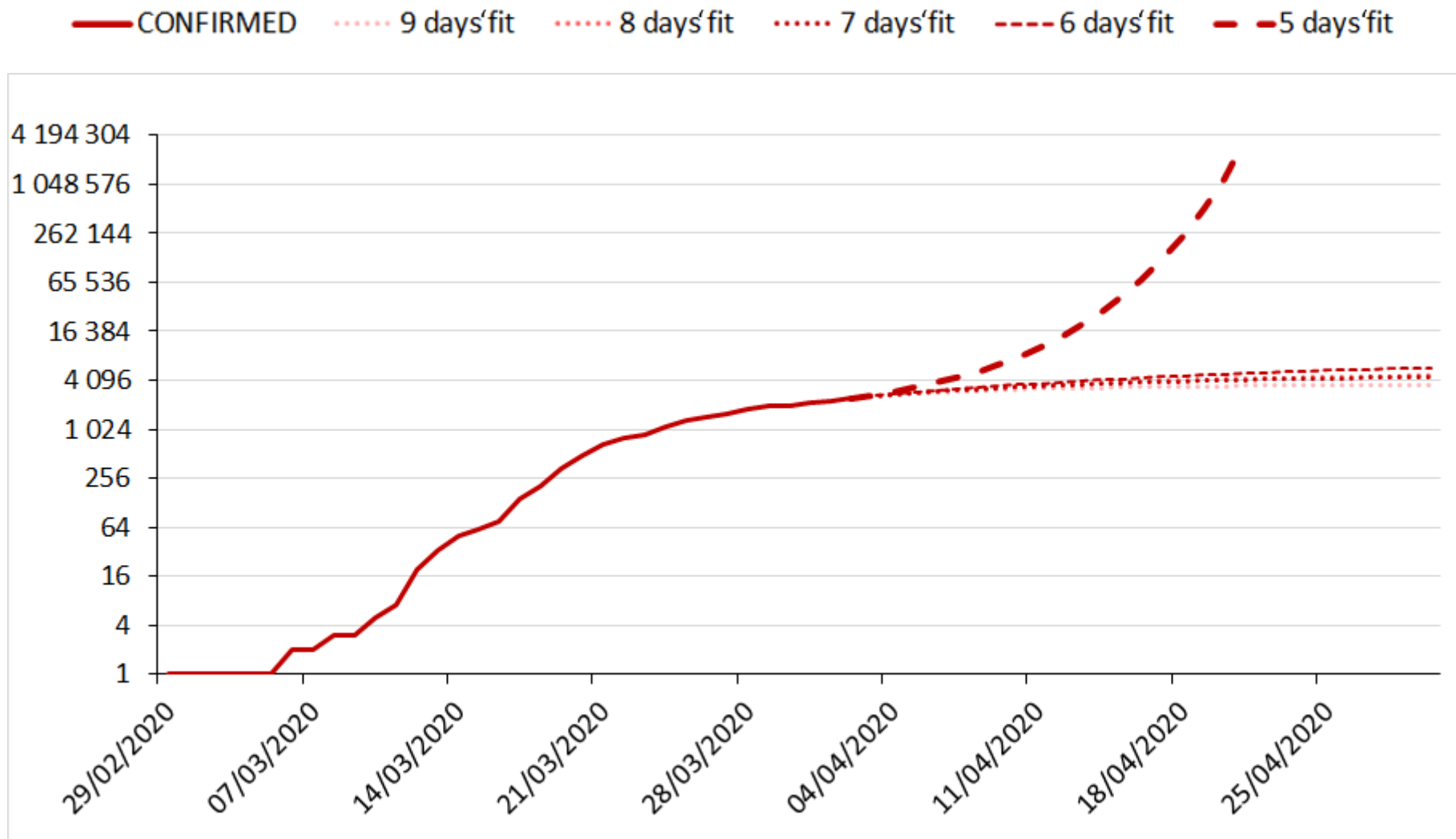
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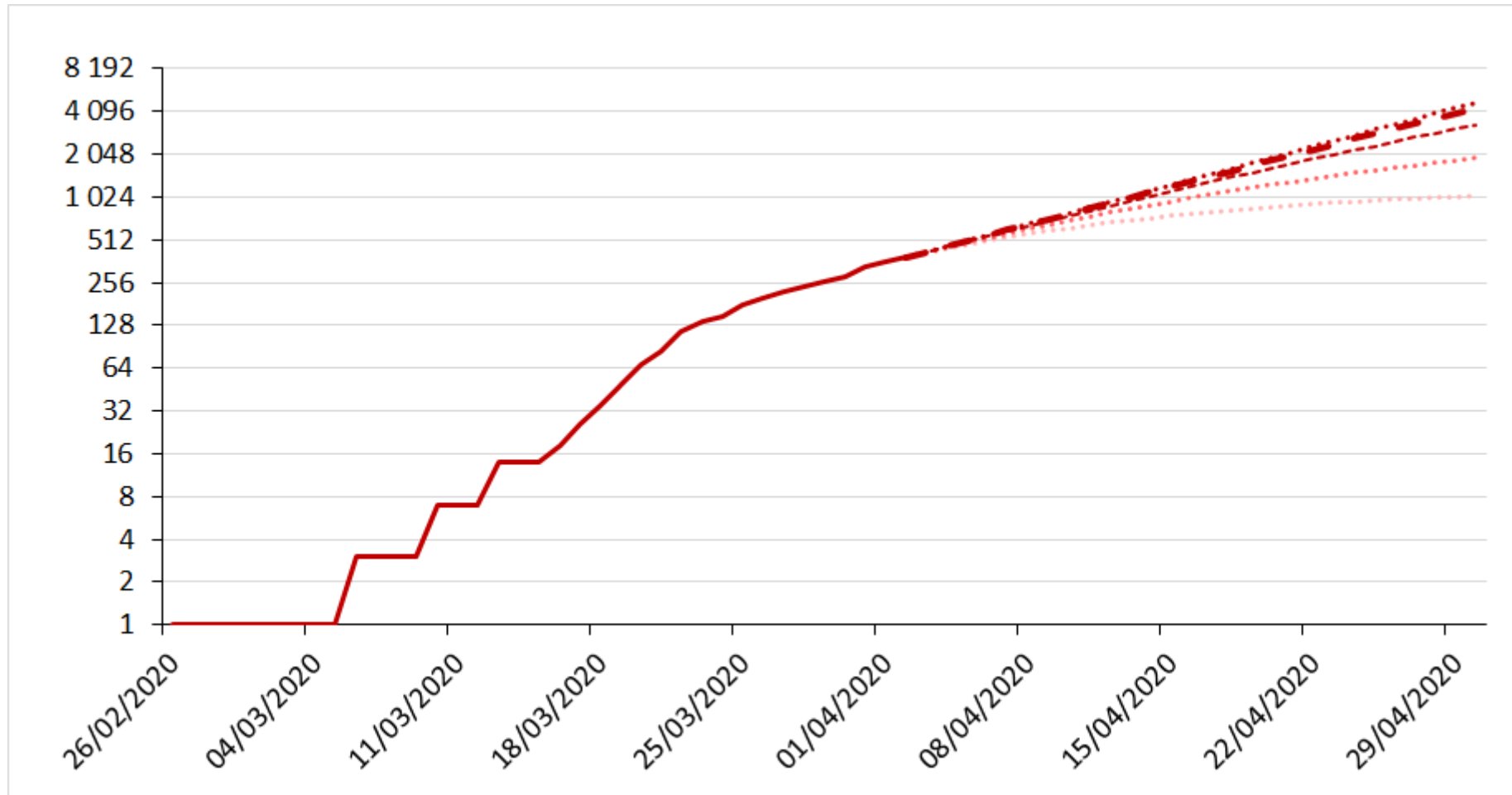
# Luxembourg



Data: The Johns Hopkins University, Politolog.com

# Macedonia

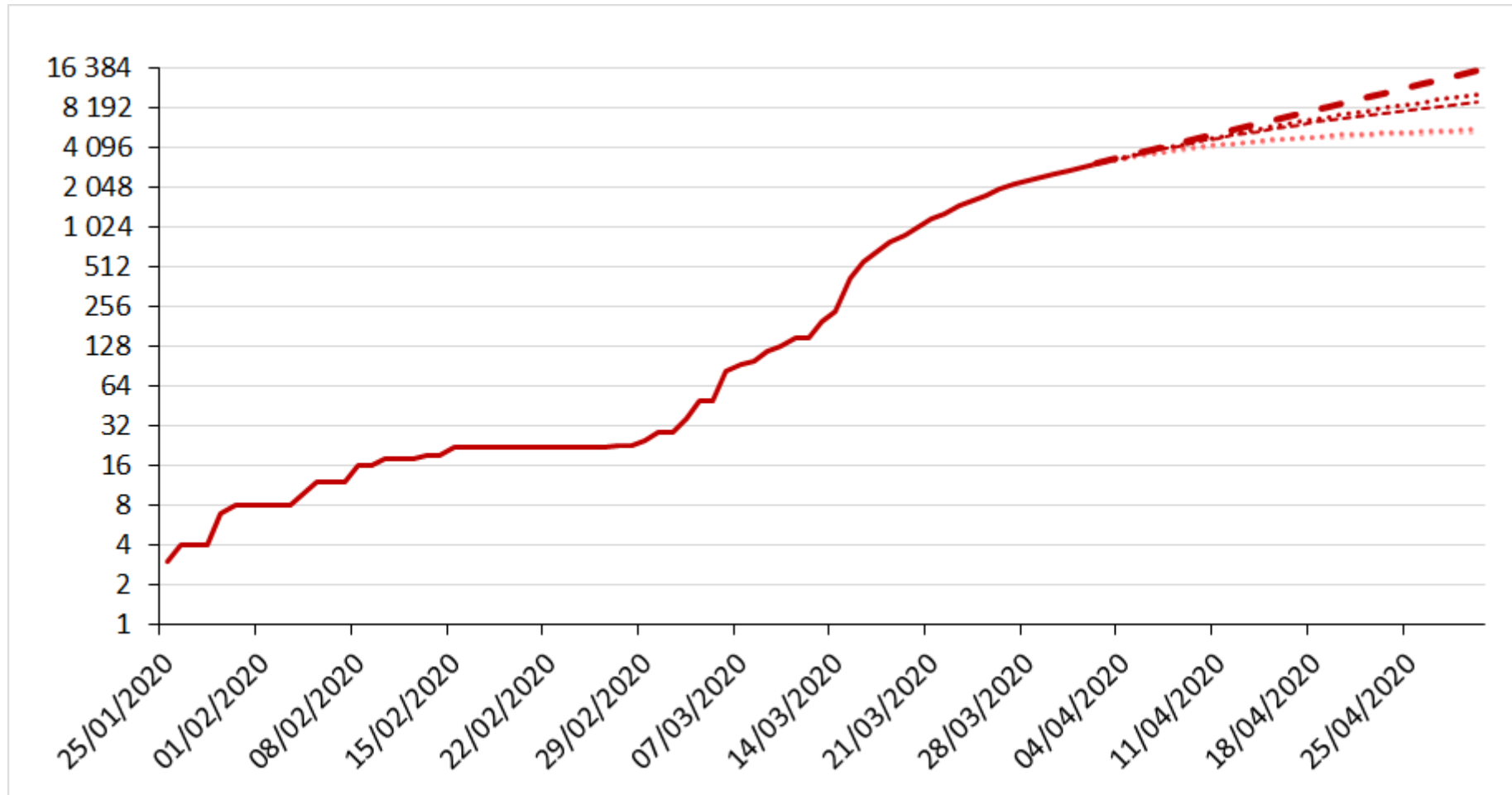
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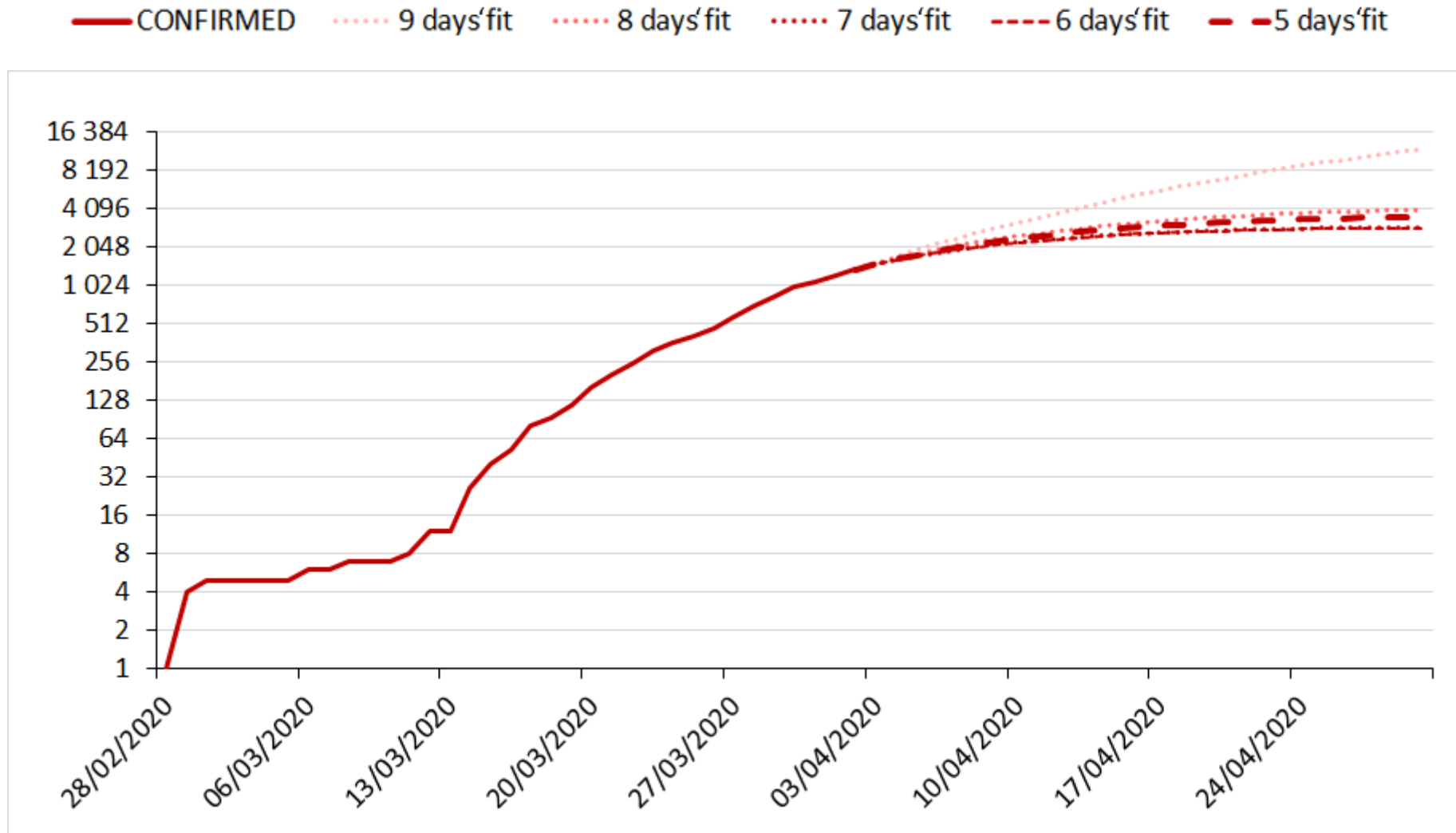
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Data: The Johns Hopkins University, Politolog.com

# Mexico

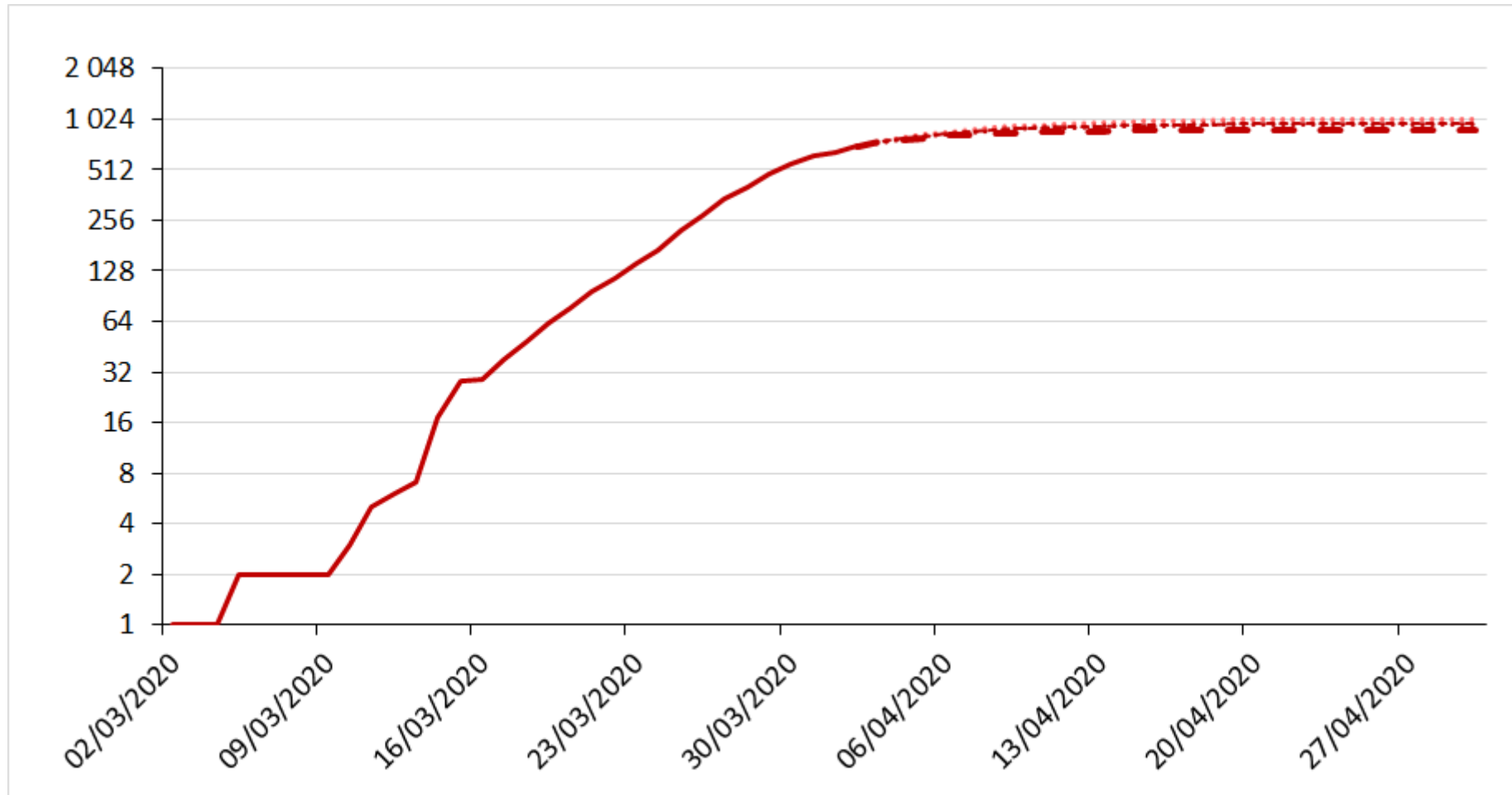


Data: The Johns Hopkins University, Politolog.com



# Moldova

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# Morocco

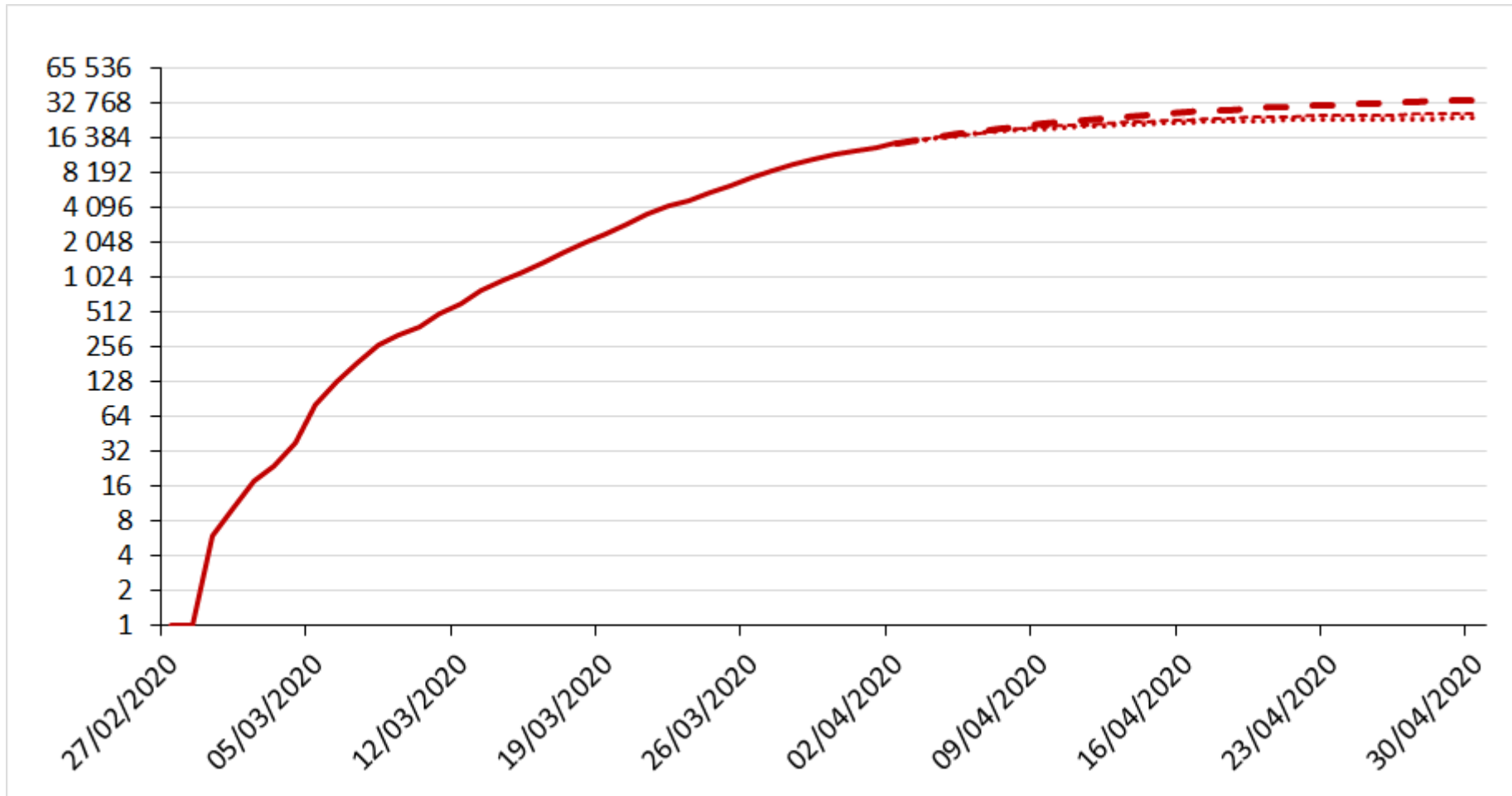
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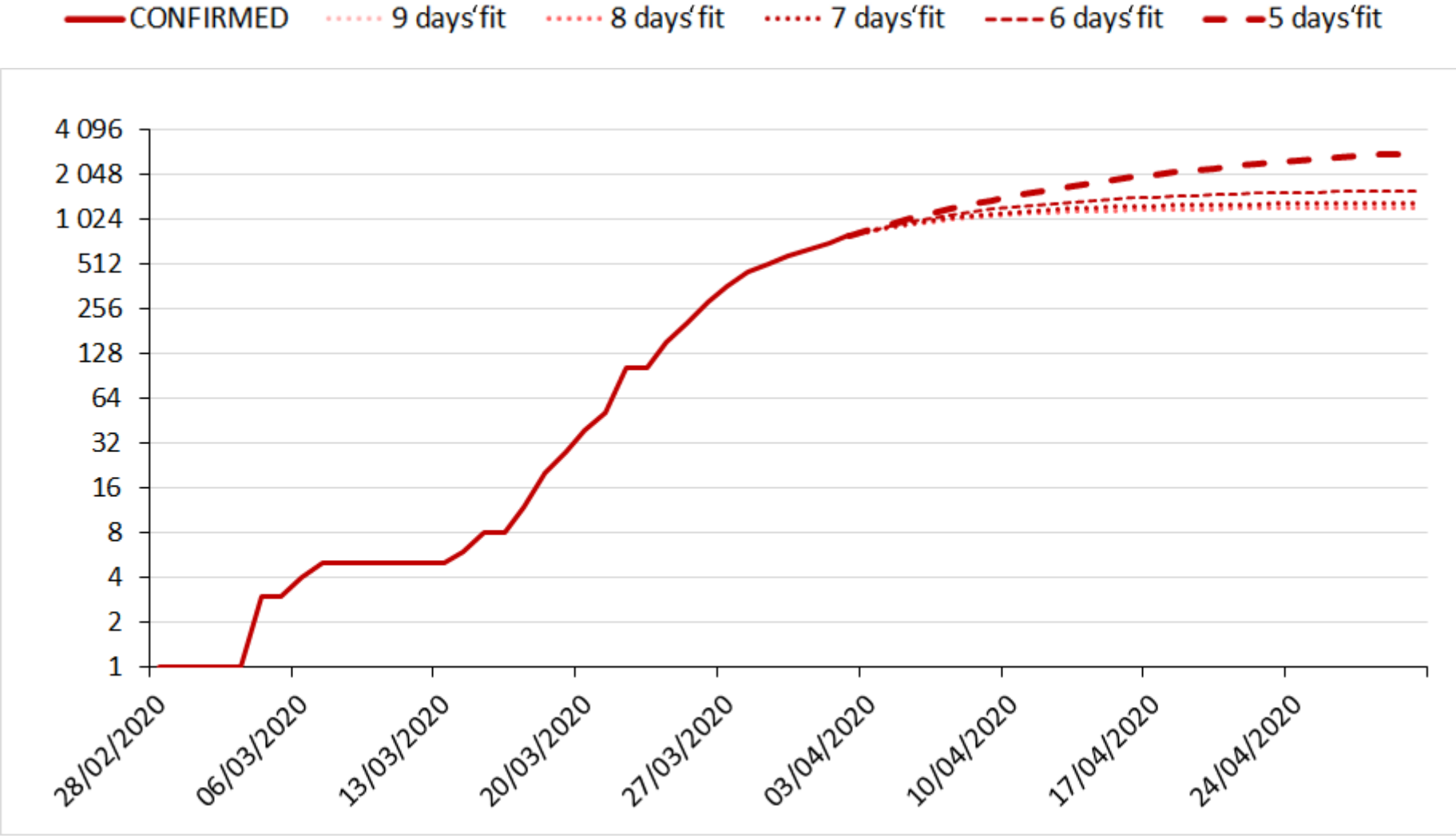
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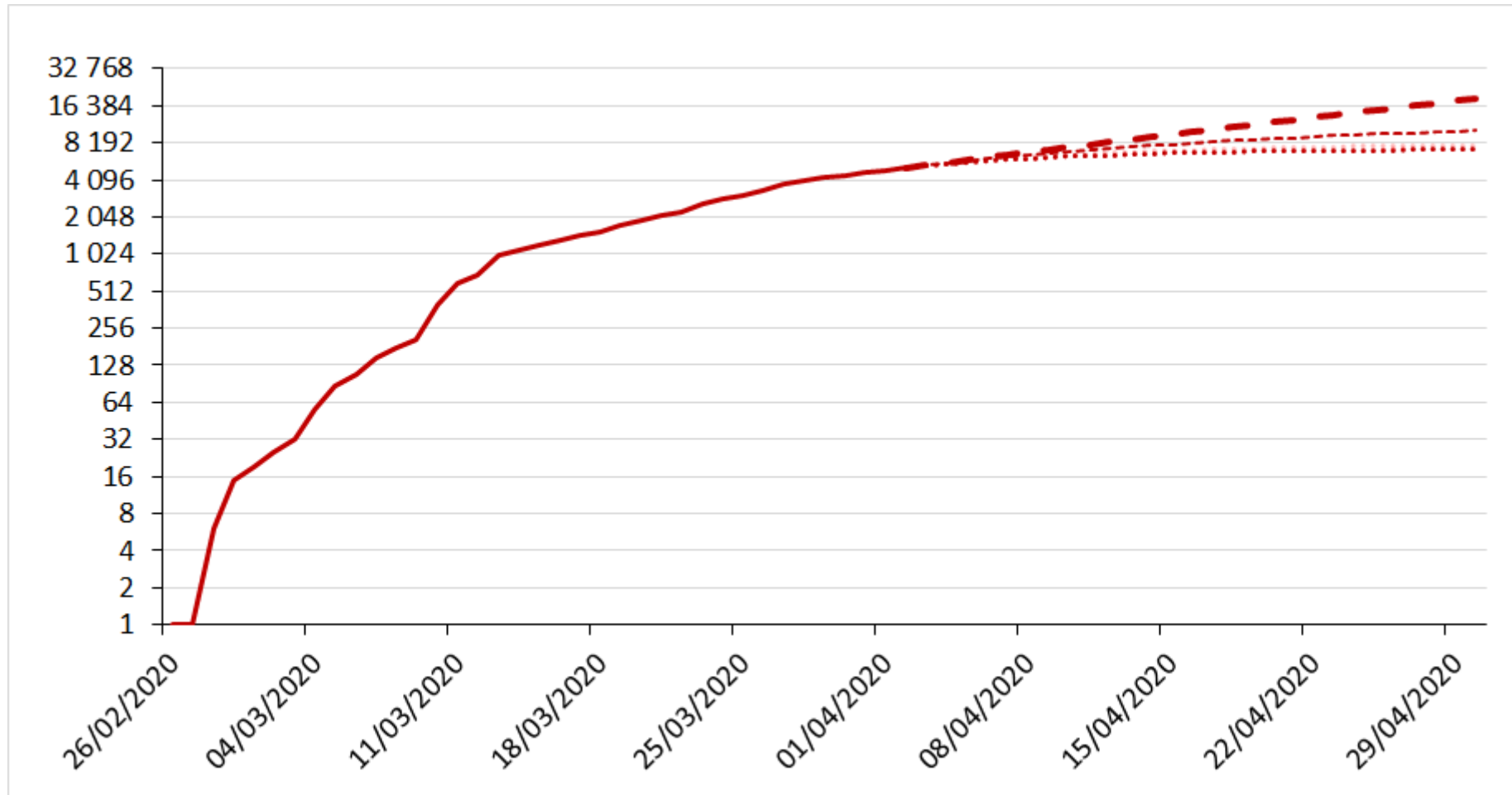
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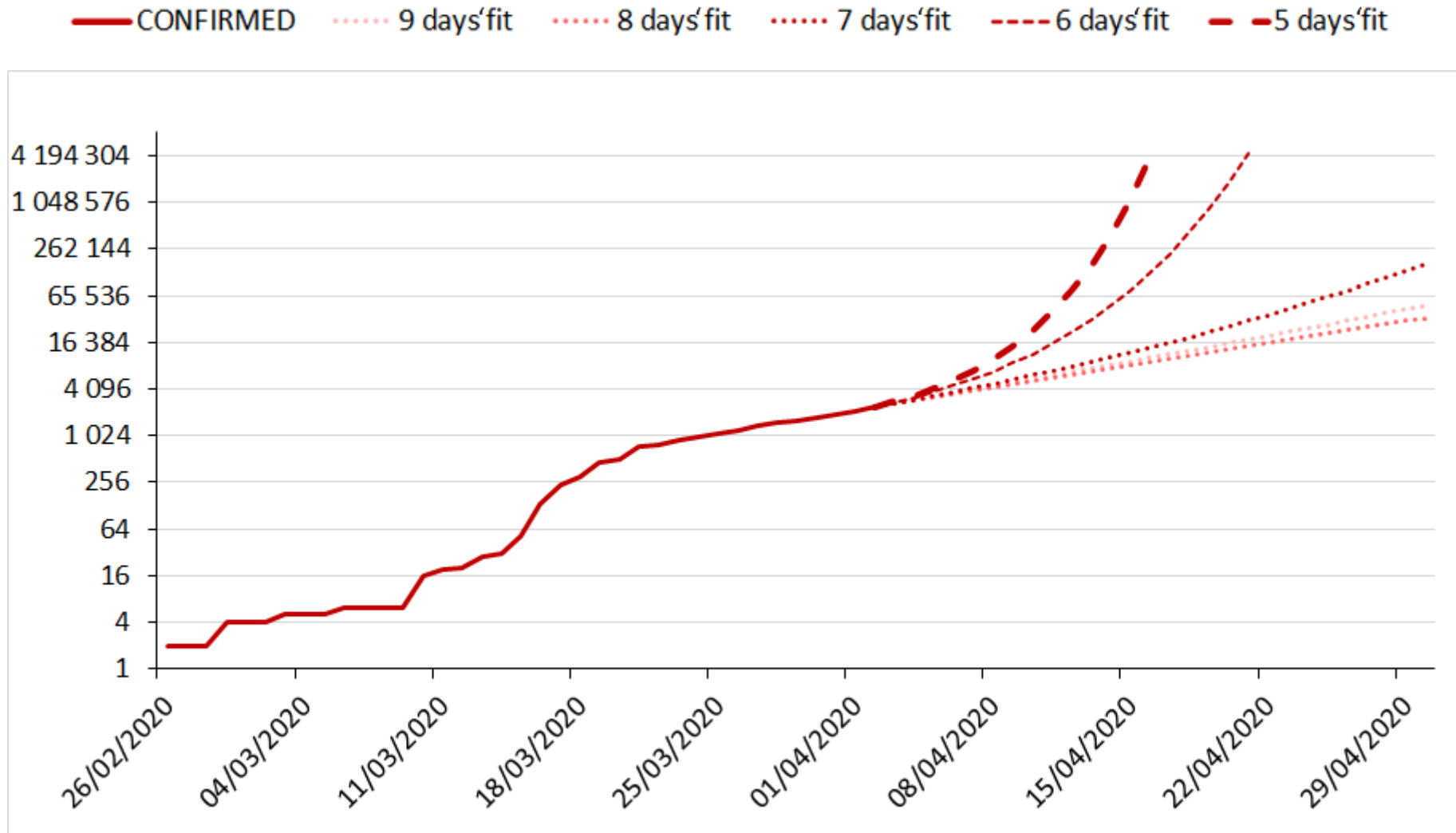
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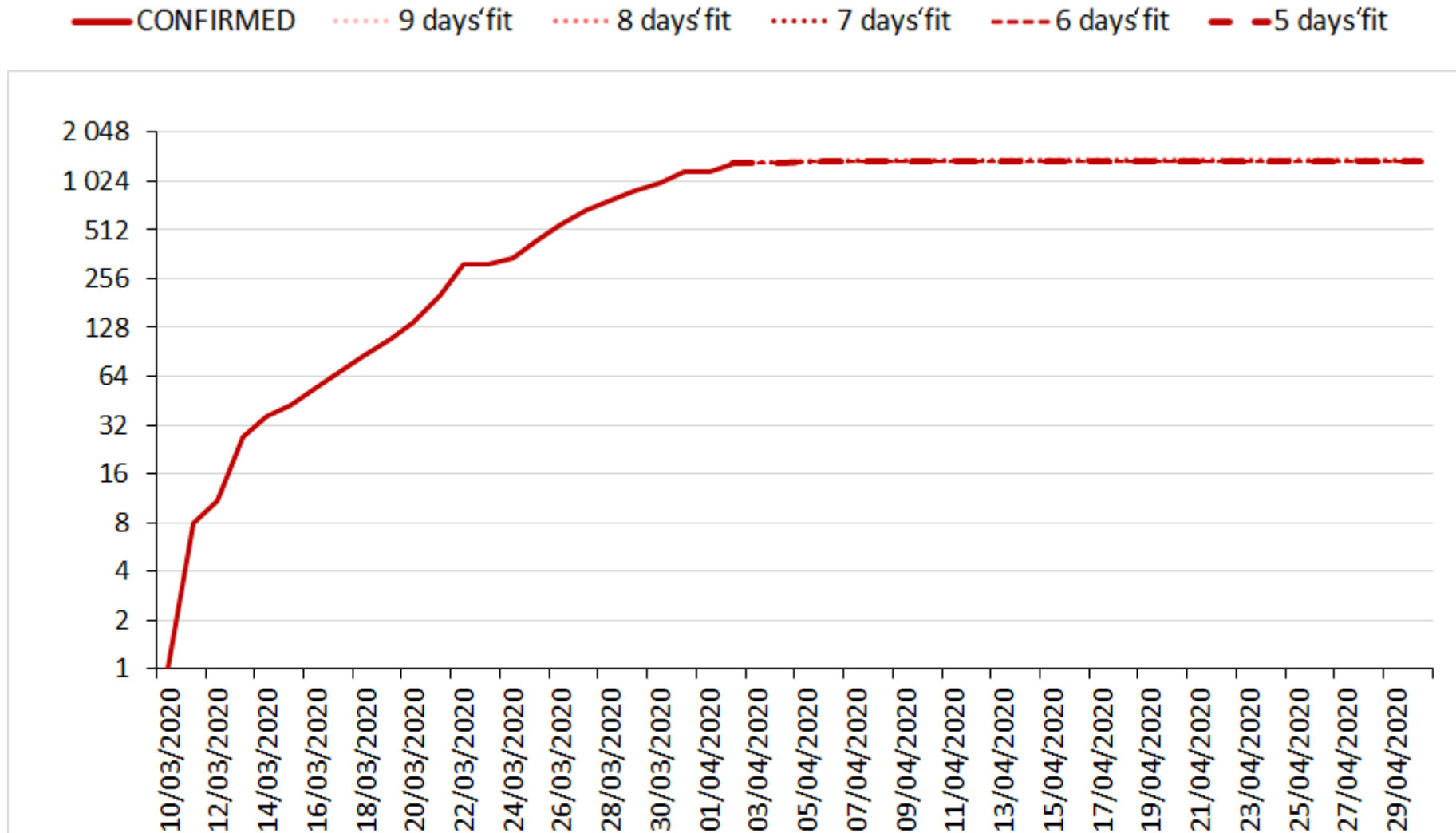
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# Pakistan



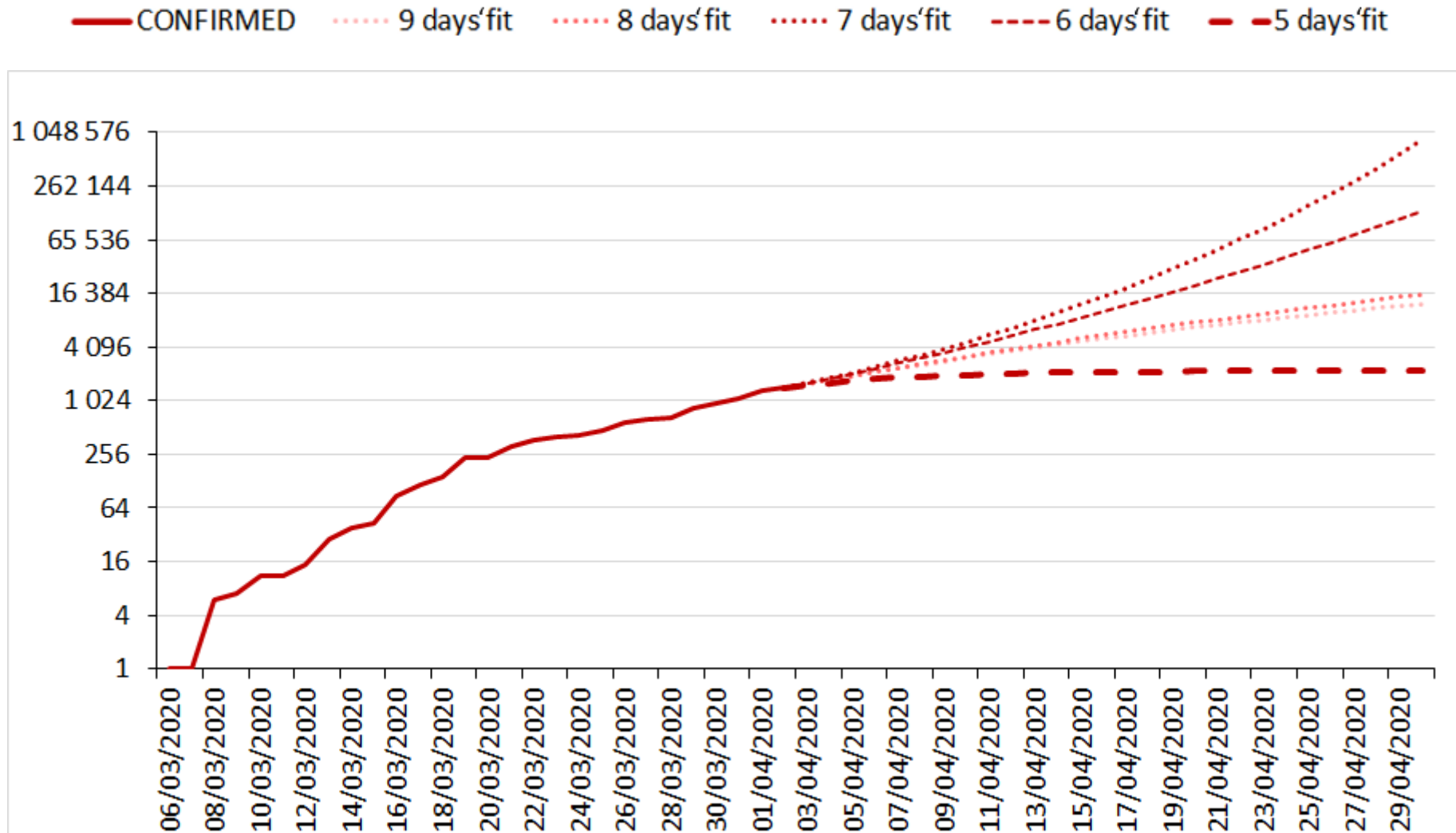
Data: The Johns Hopkins University, Politolog.com

# Panama



Data: The Johns Hopkins University, Politolog.com

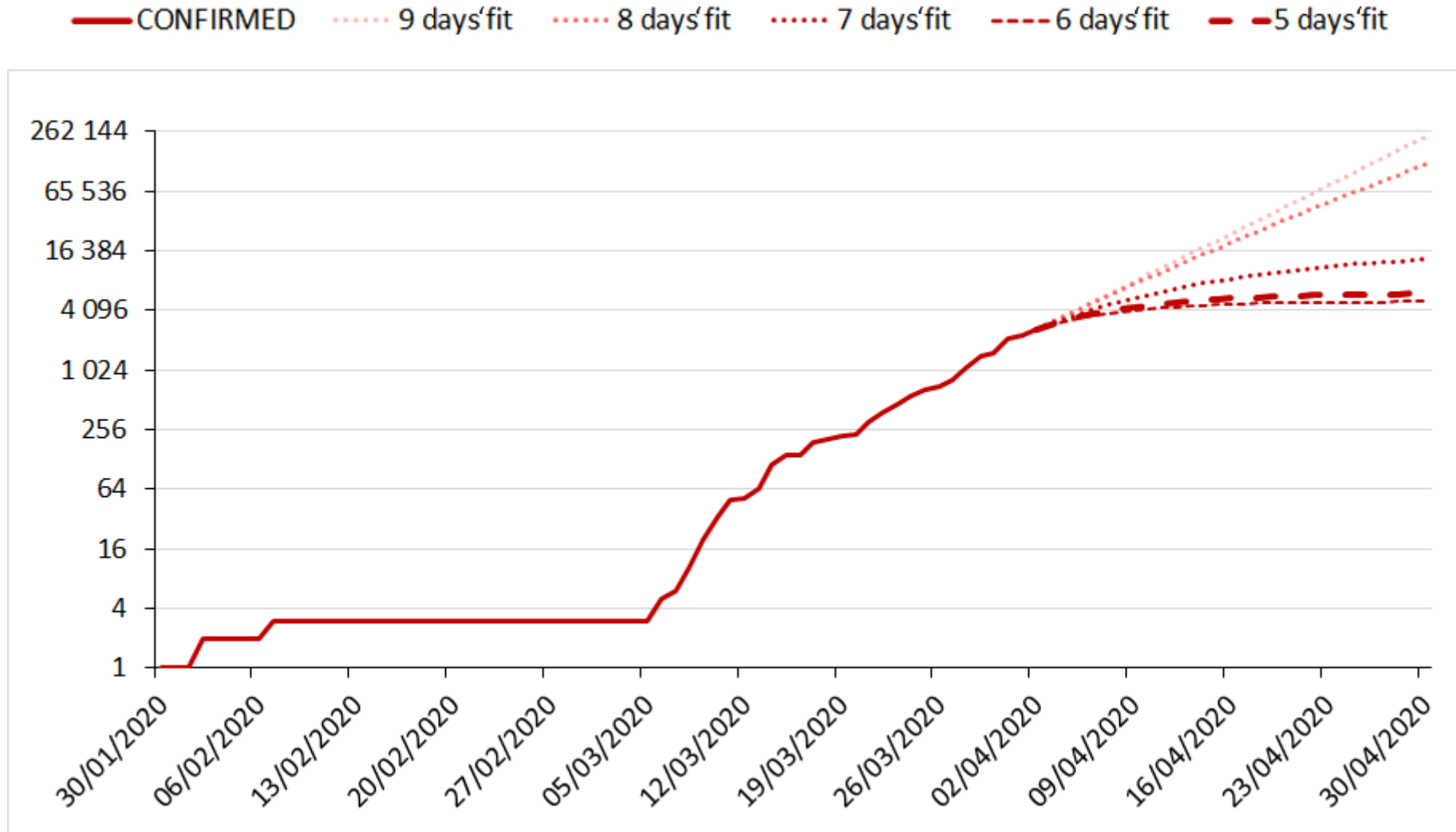
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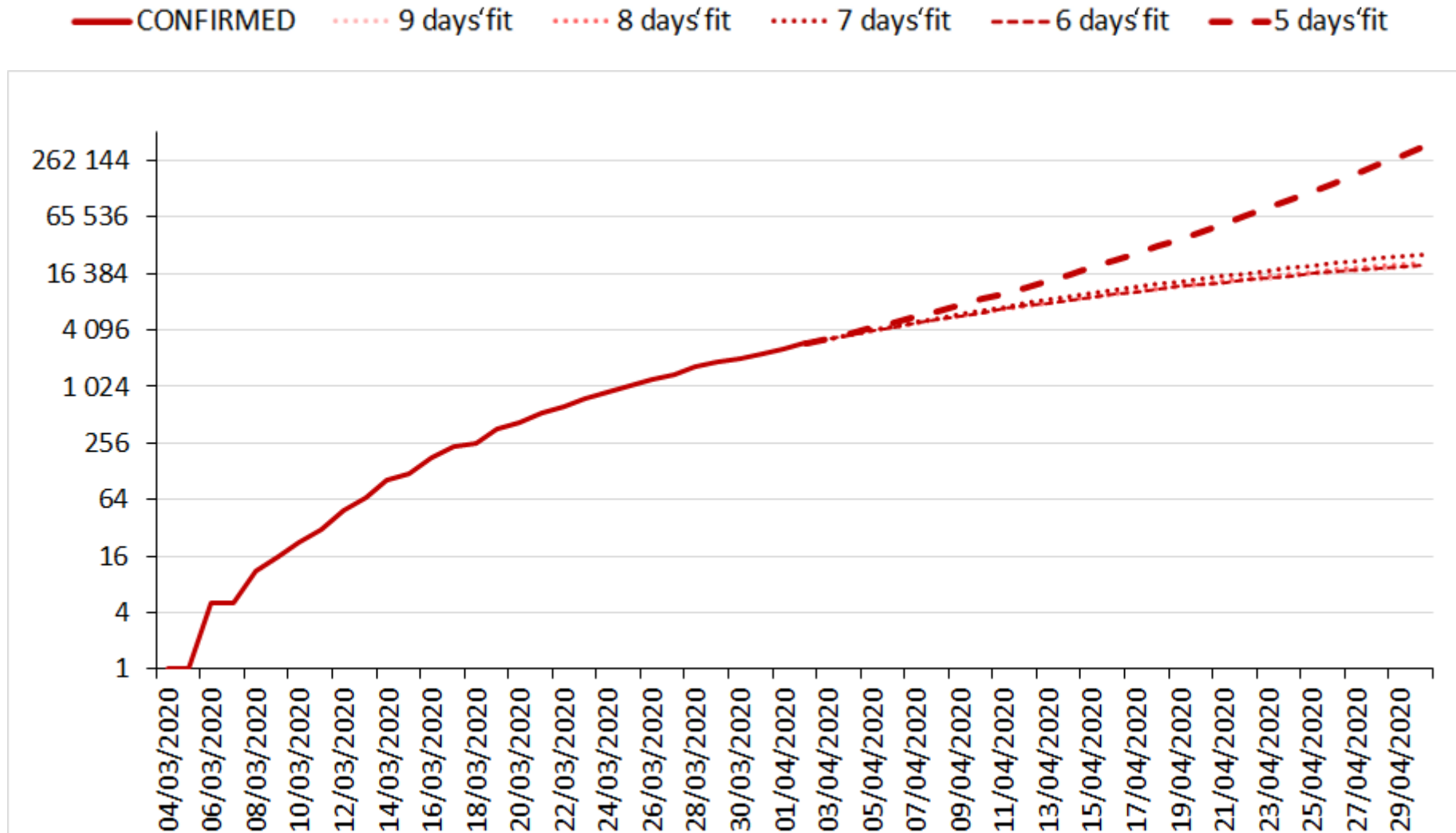


# Philippines



Data: The Johns Hopkins University, Politolog.com

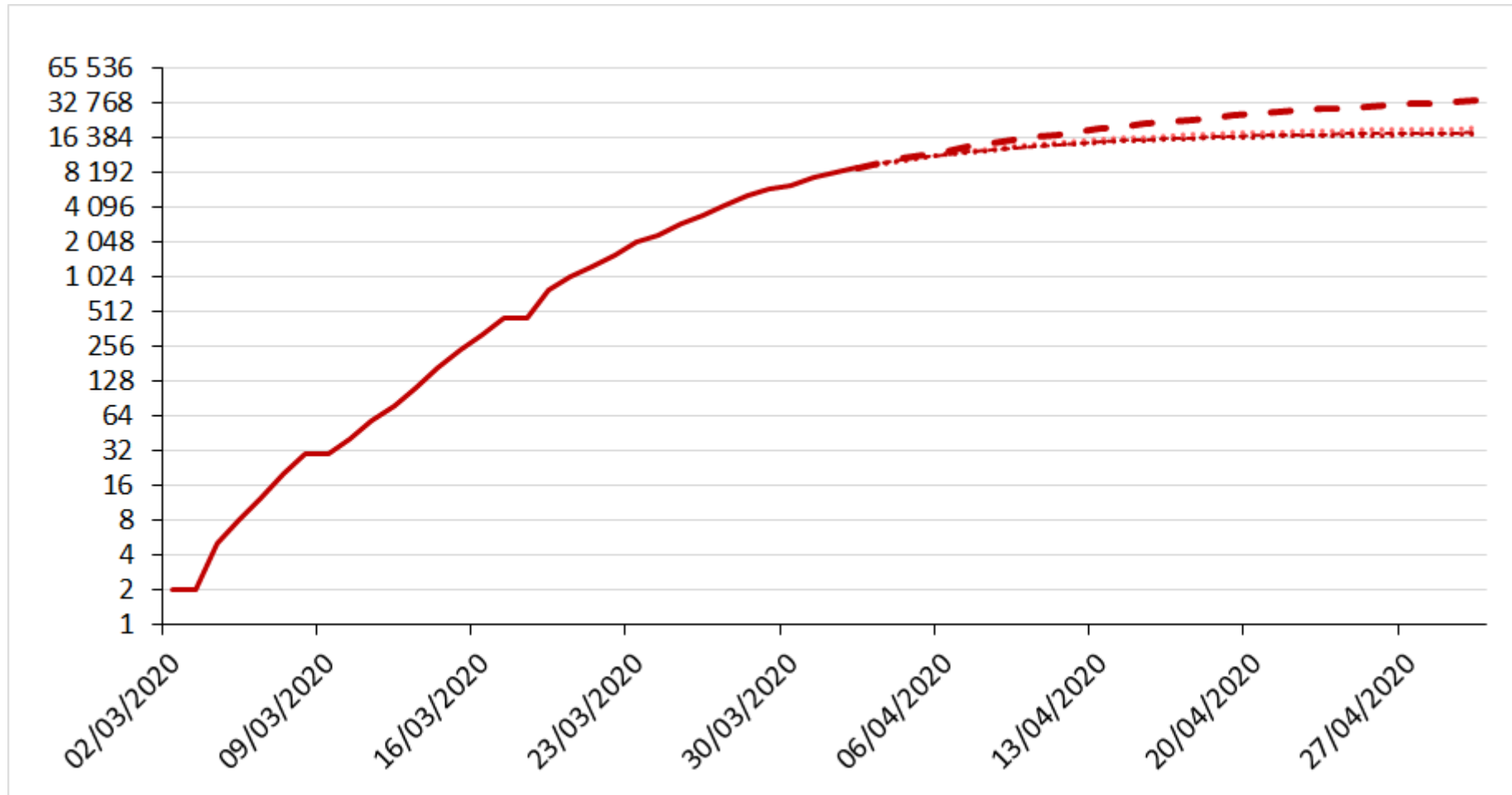
# Poland



Data: The Johns Hopkins University, Politolog.com

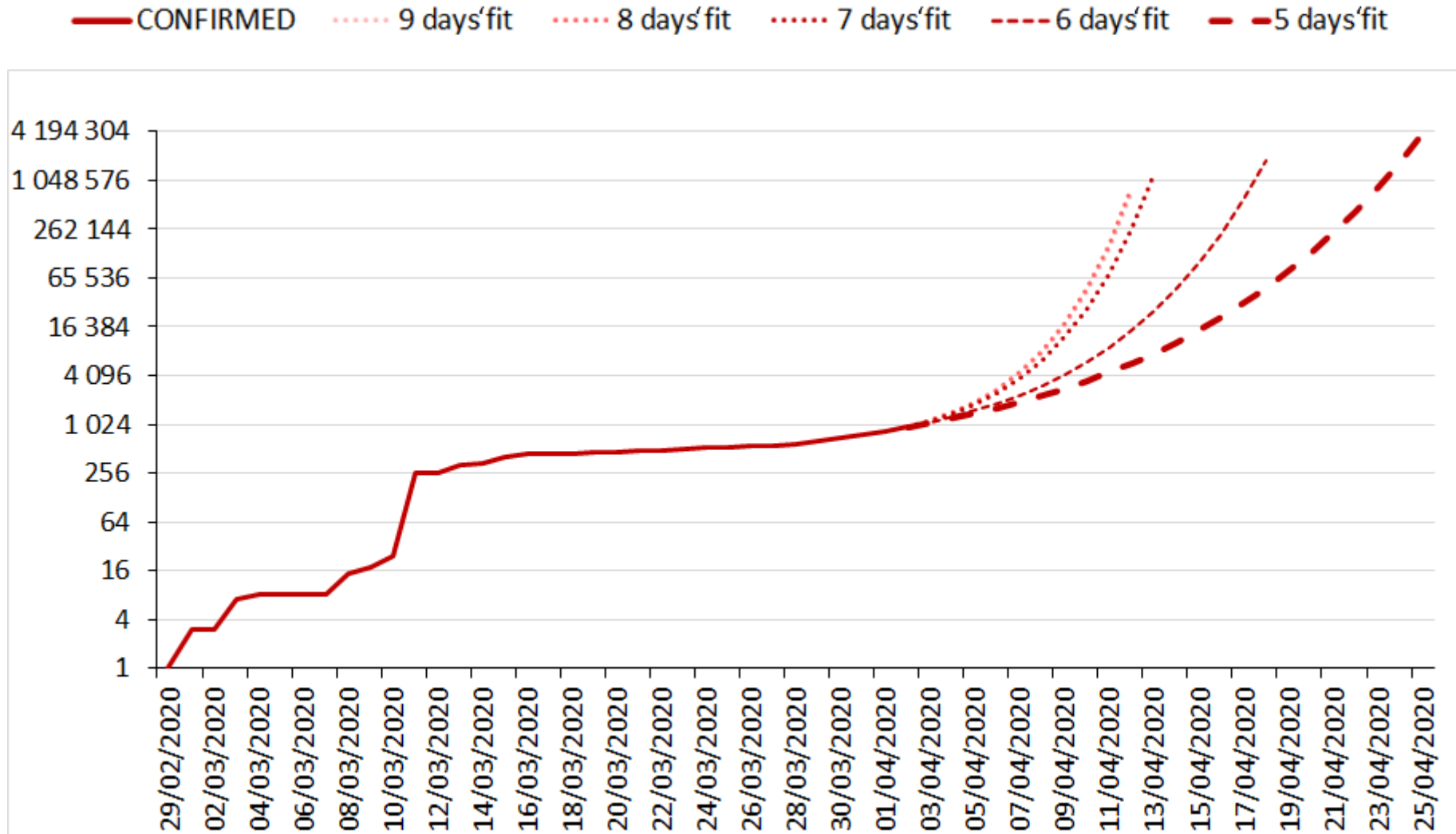
# Portugal

— CONFIRMED    ..... 9 days'fit    ..... 8 days'fit    ..... 7 days'fit    - - - - 6 days'fit    - - - - 5 days'fit



Data: The Johns Hopkins University, Politolog.com

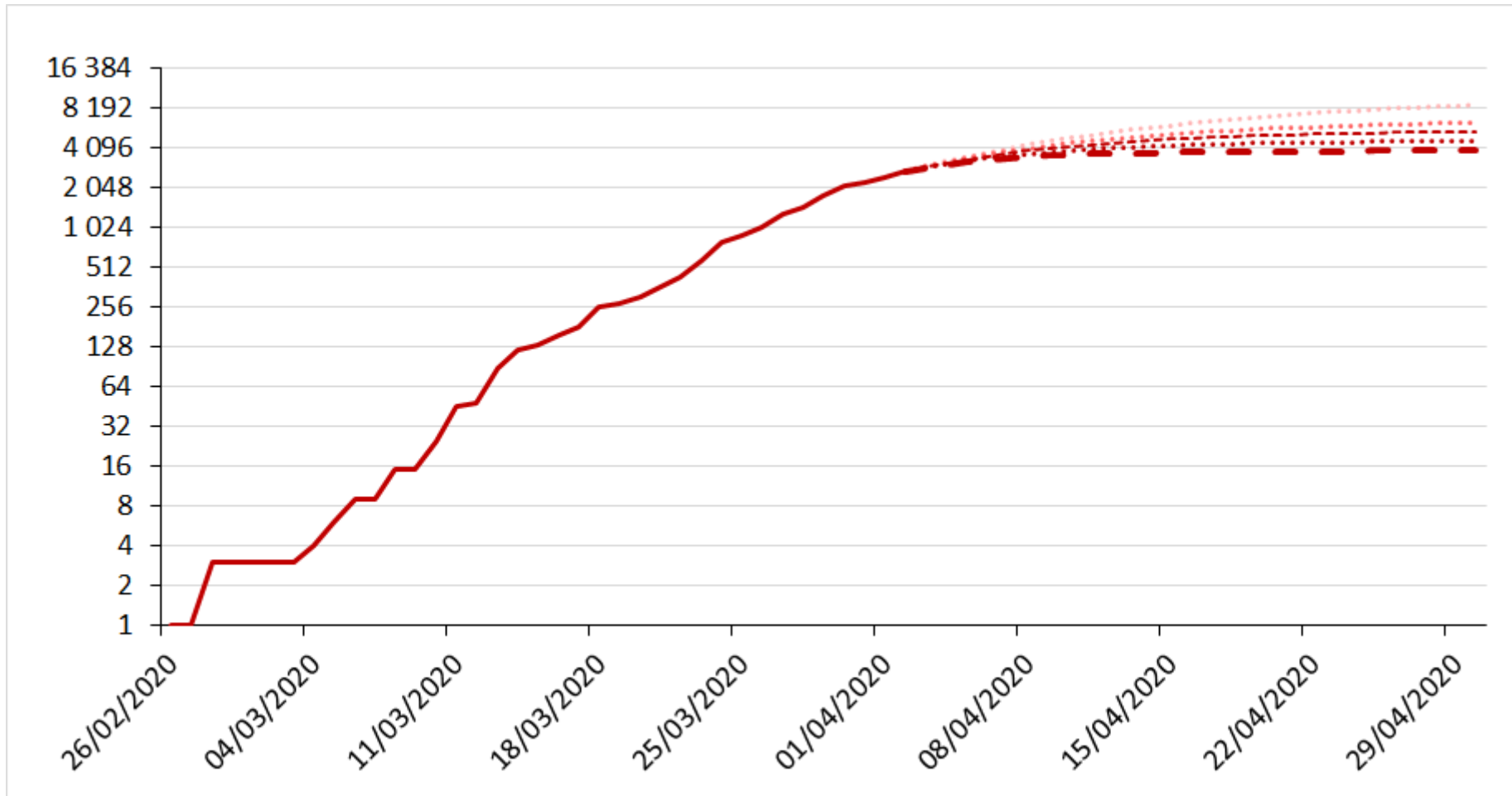
# Qatar



Data: The Johns Hopkins University, Politolog.com

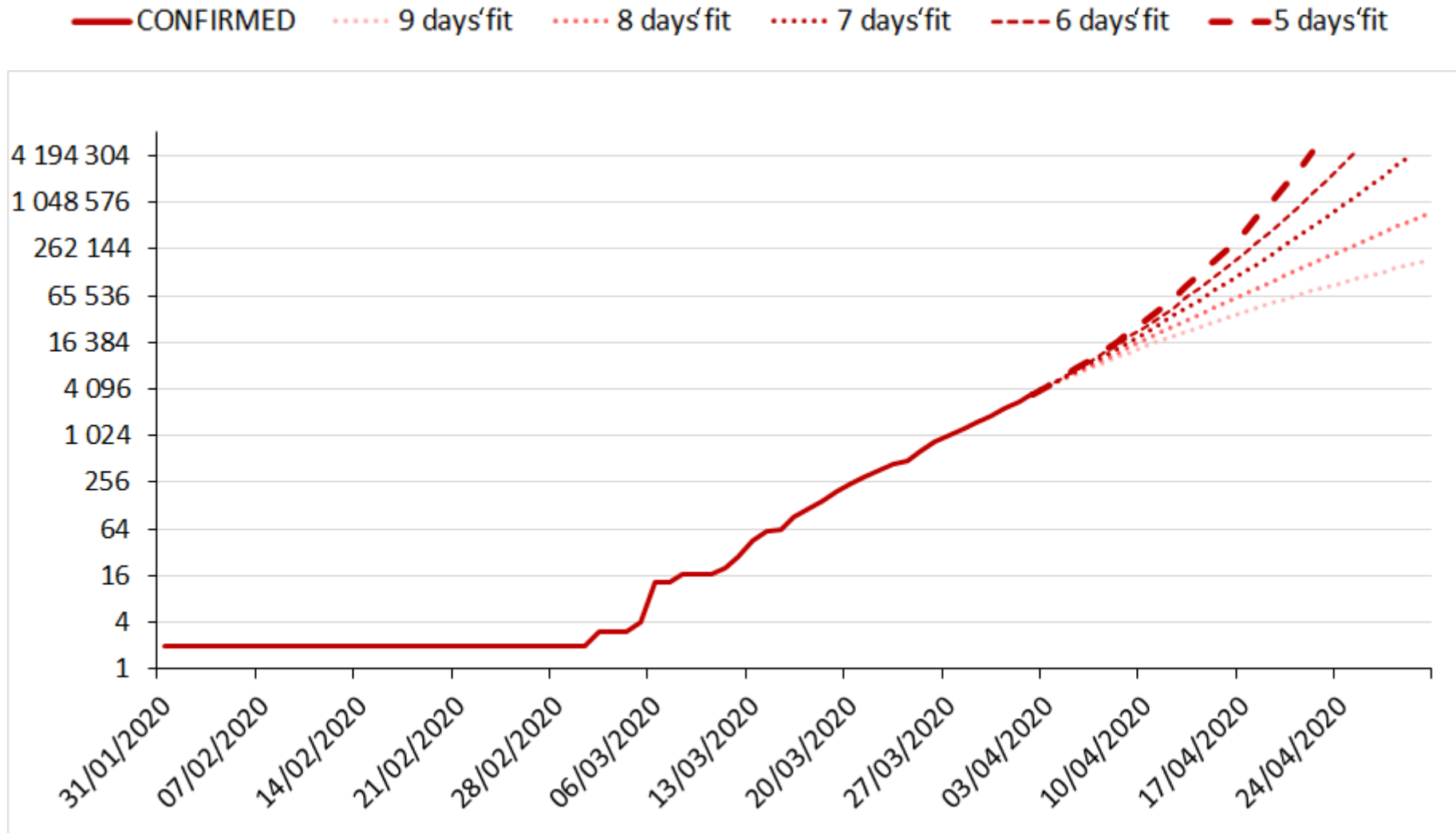
# Romania

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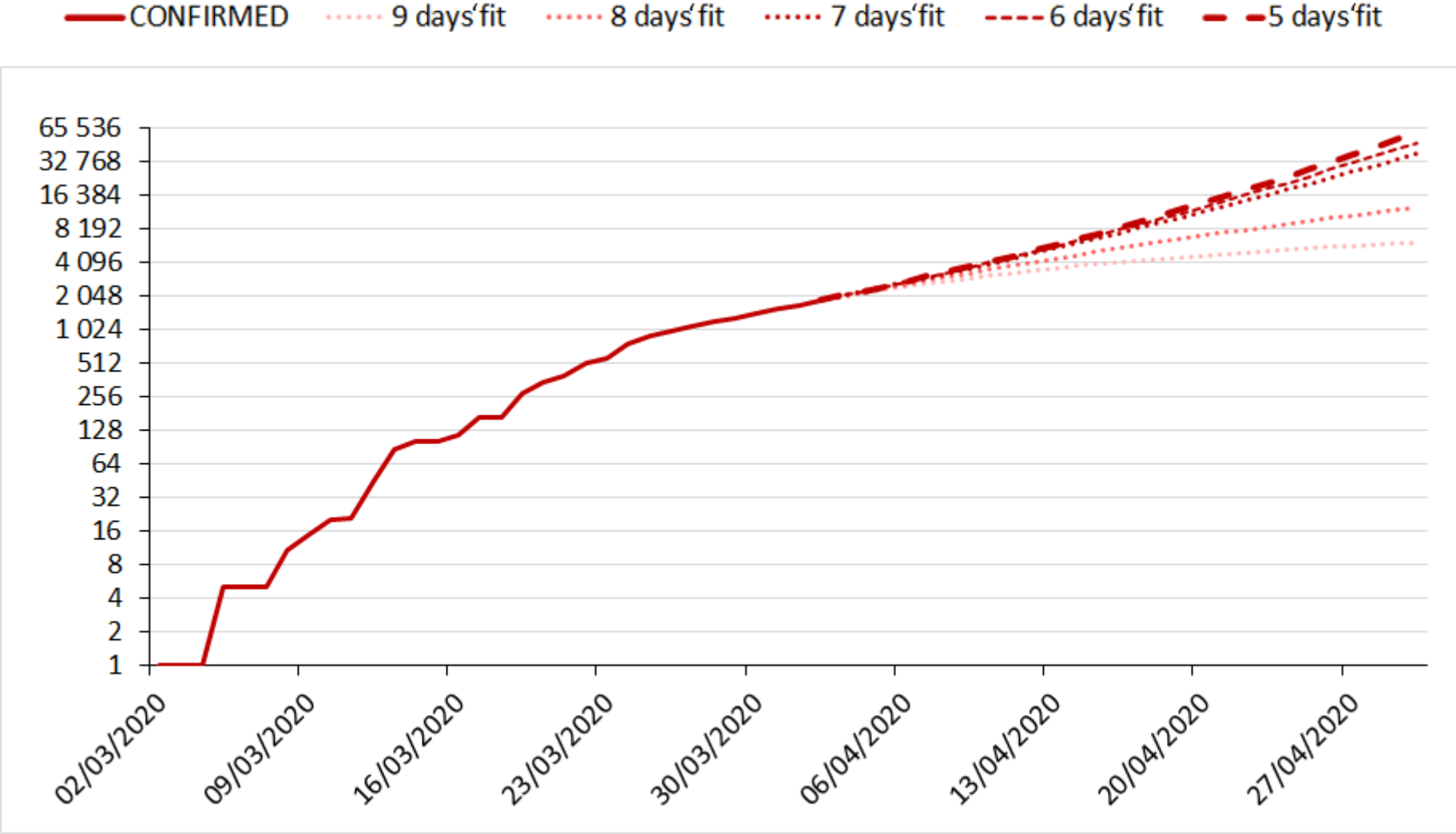
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# Russia



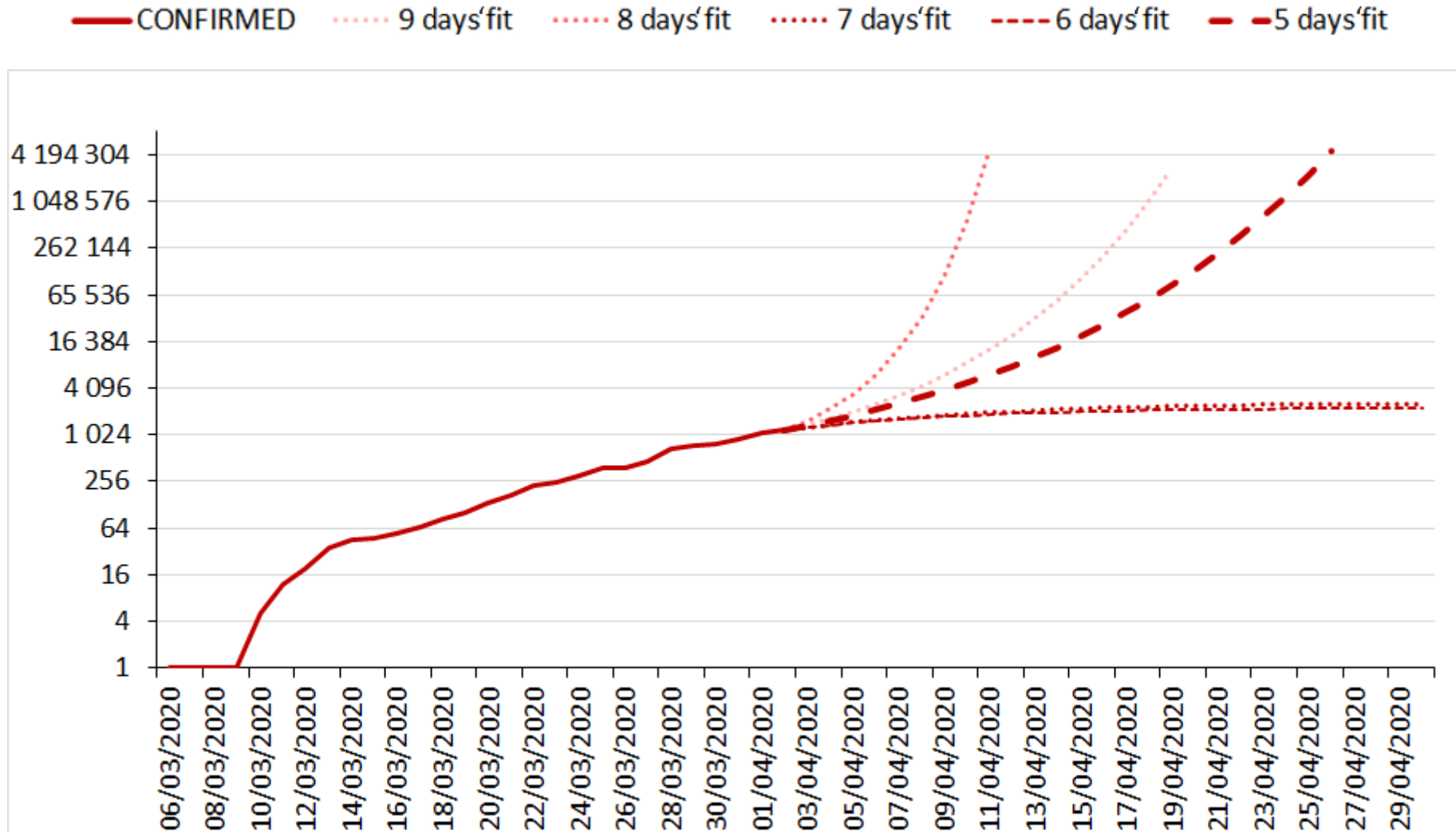
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# Saudi Arabia



Data: The Johns Hopkins University, Politolog.com

# Serbia

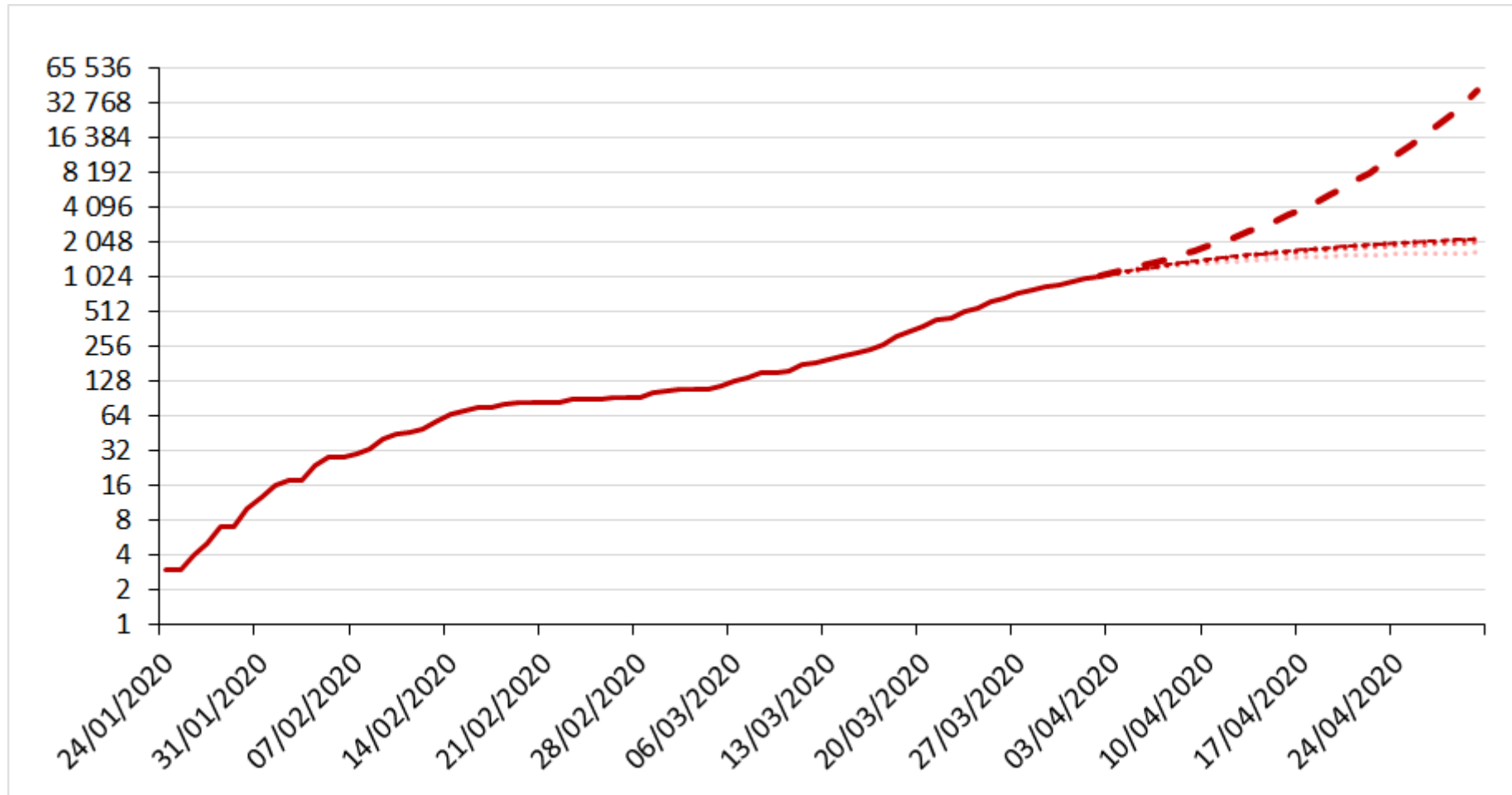


Data: The Johns Hopkins University, Politolog.com



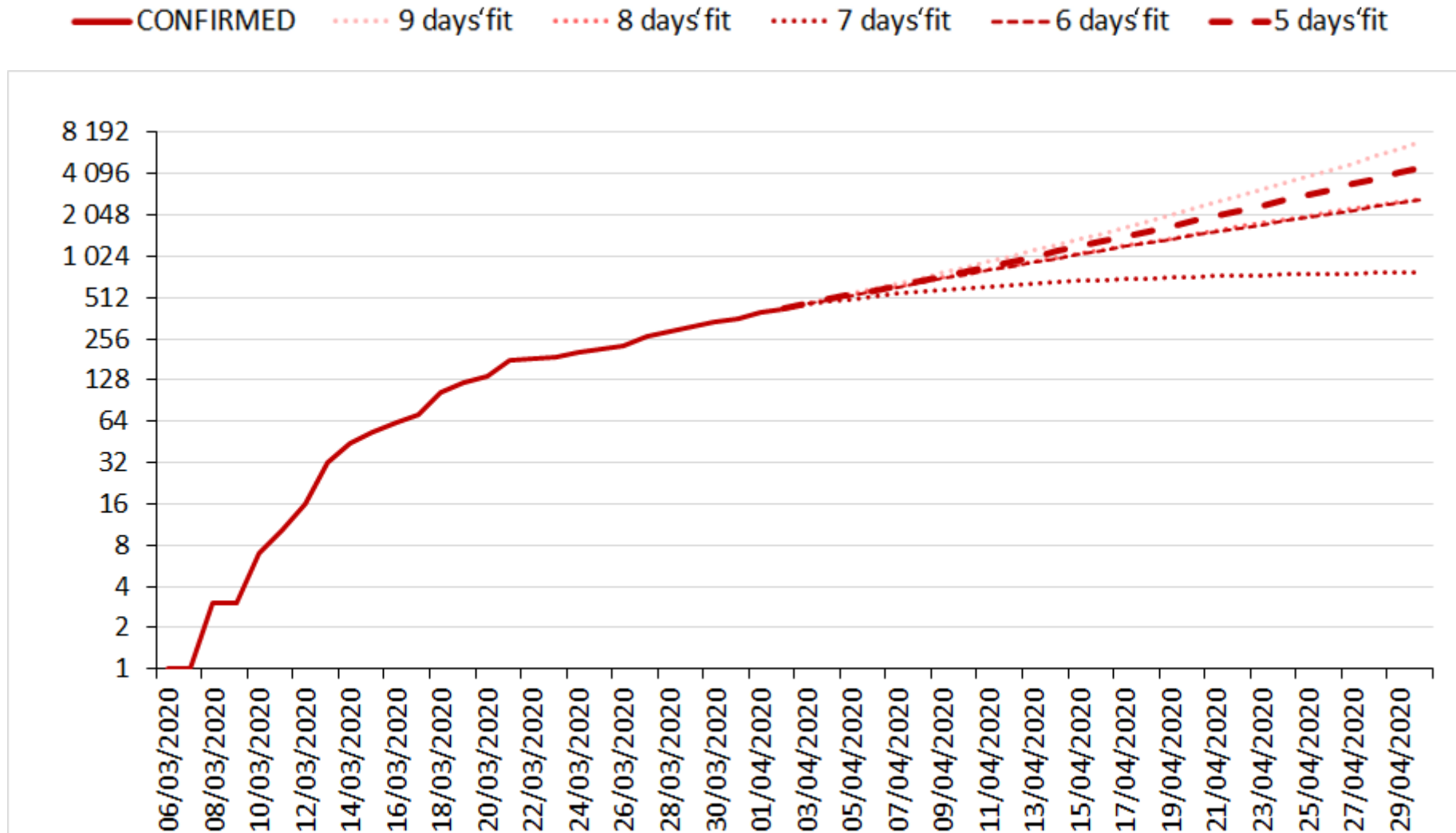
# Singapore

— CONFIRMED    ..... 9 days'fit    ..... 8 days'fit    ..... 7 days'fit    - - - - 6 days'fit    - - - - 5 days'fit



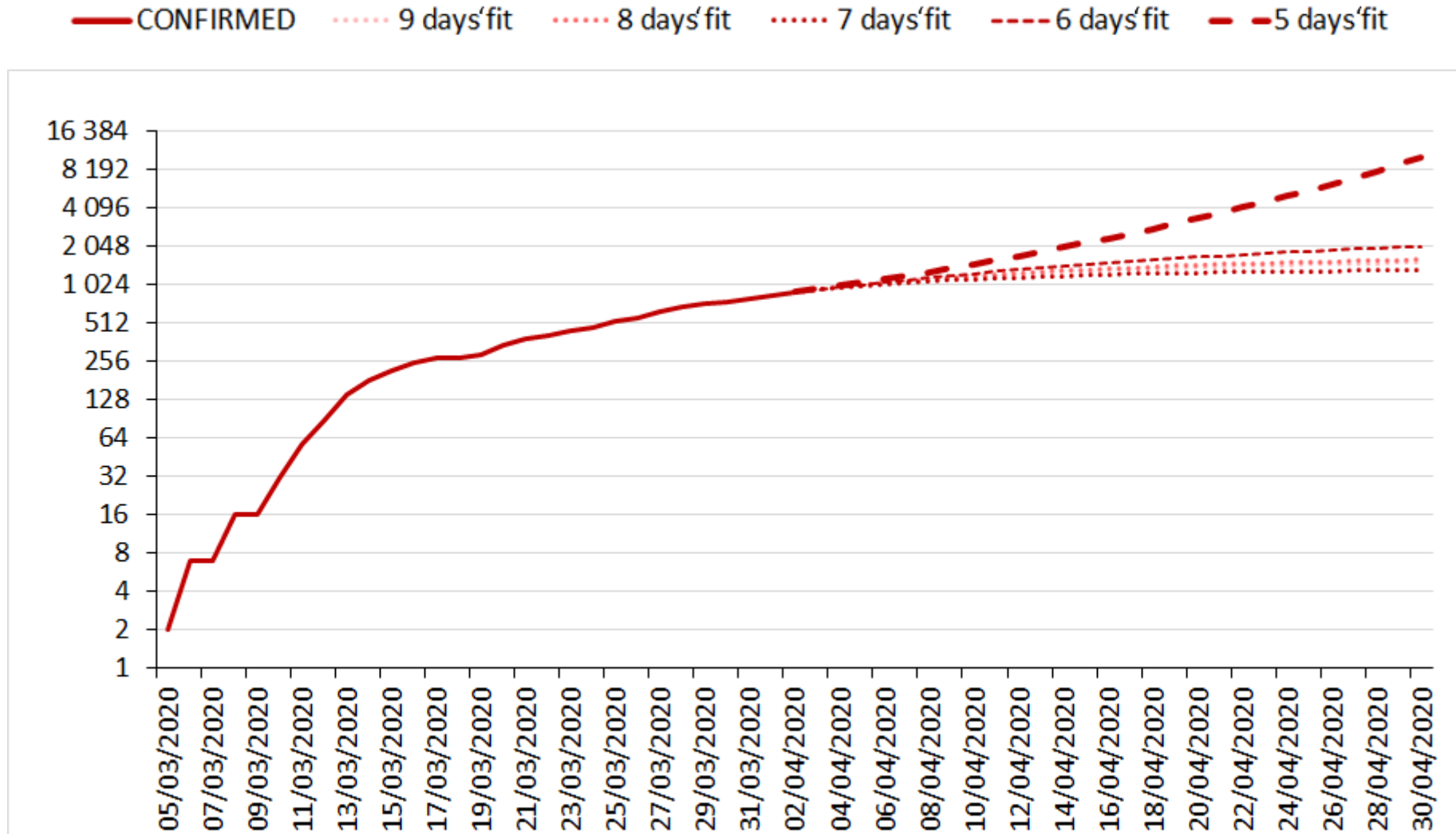
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# Slovakia



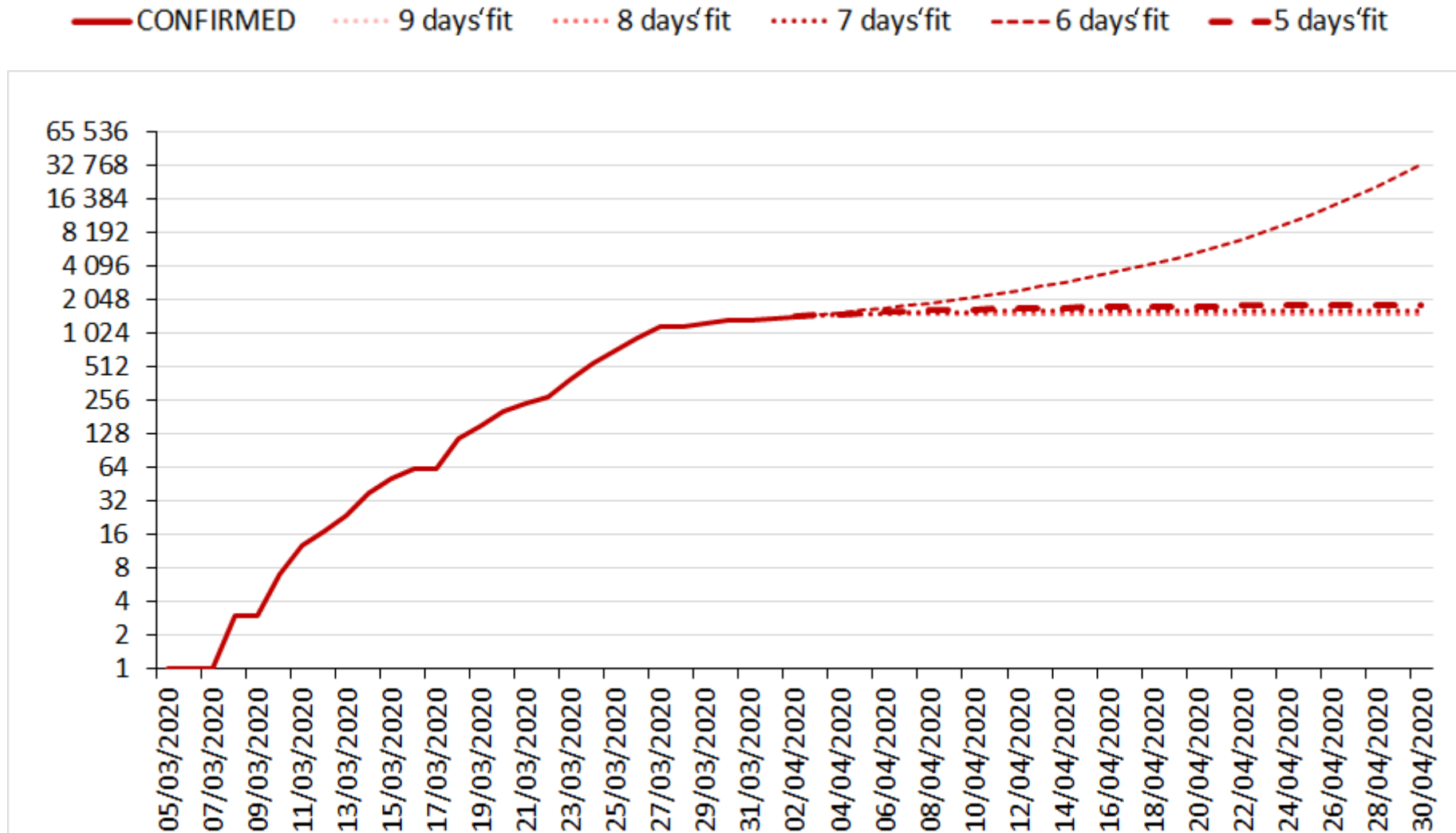
Data: The Johns Hopkins University, Politolog.com

# Slovenia



Data: The Johns Hopkins University, Politolog.com

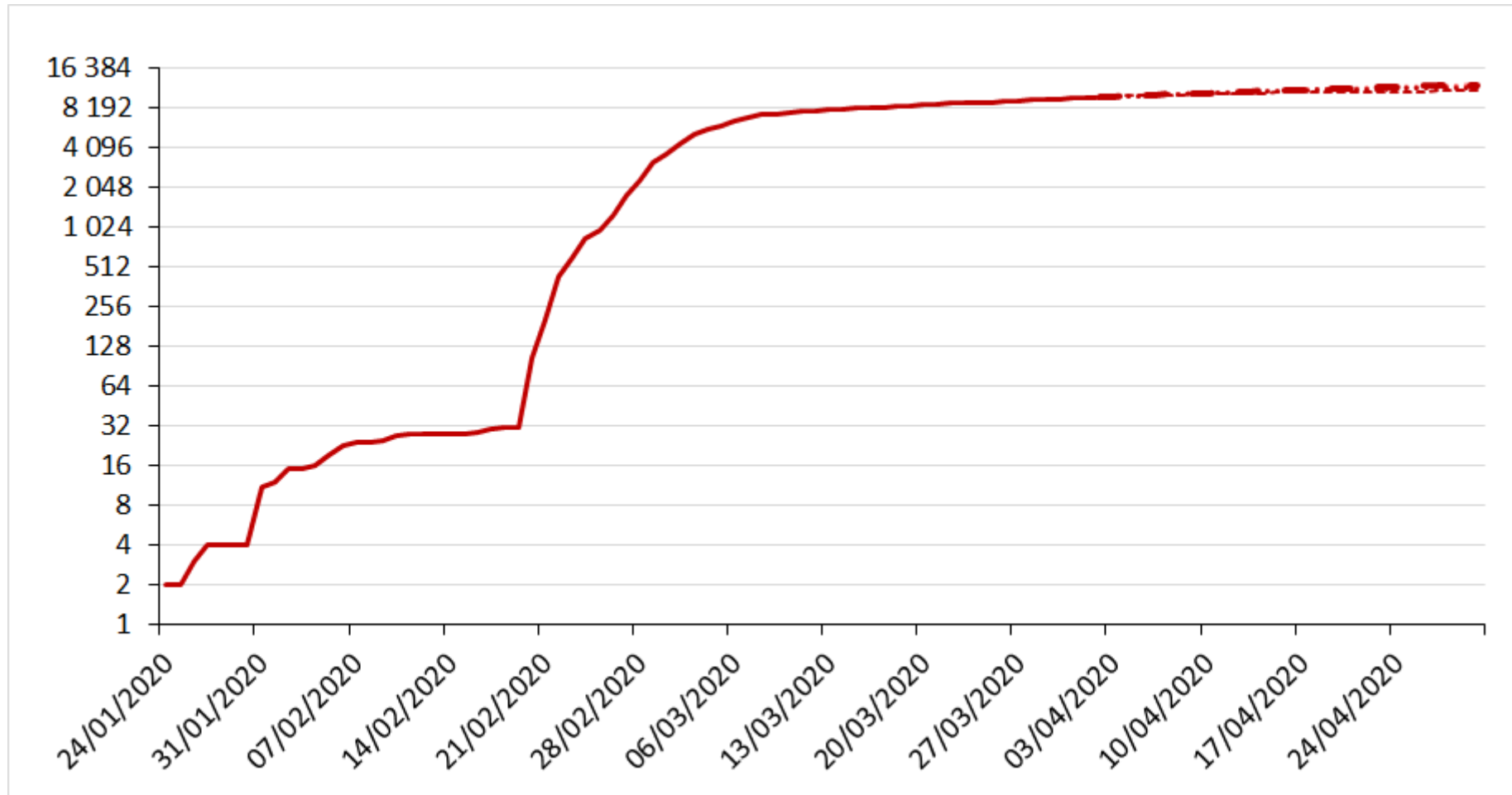
# South Africa



Data: The Johns Hopkins University, Politolog.com

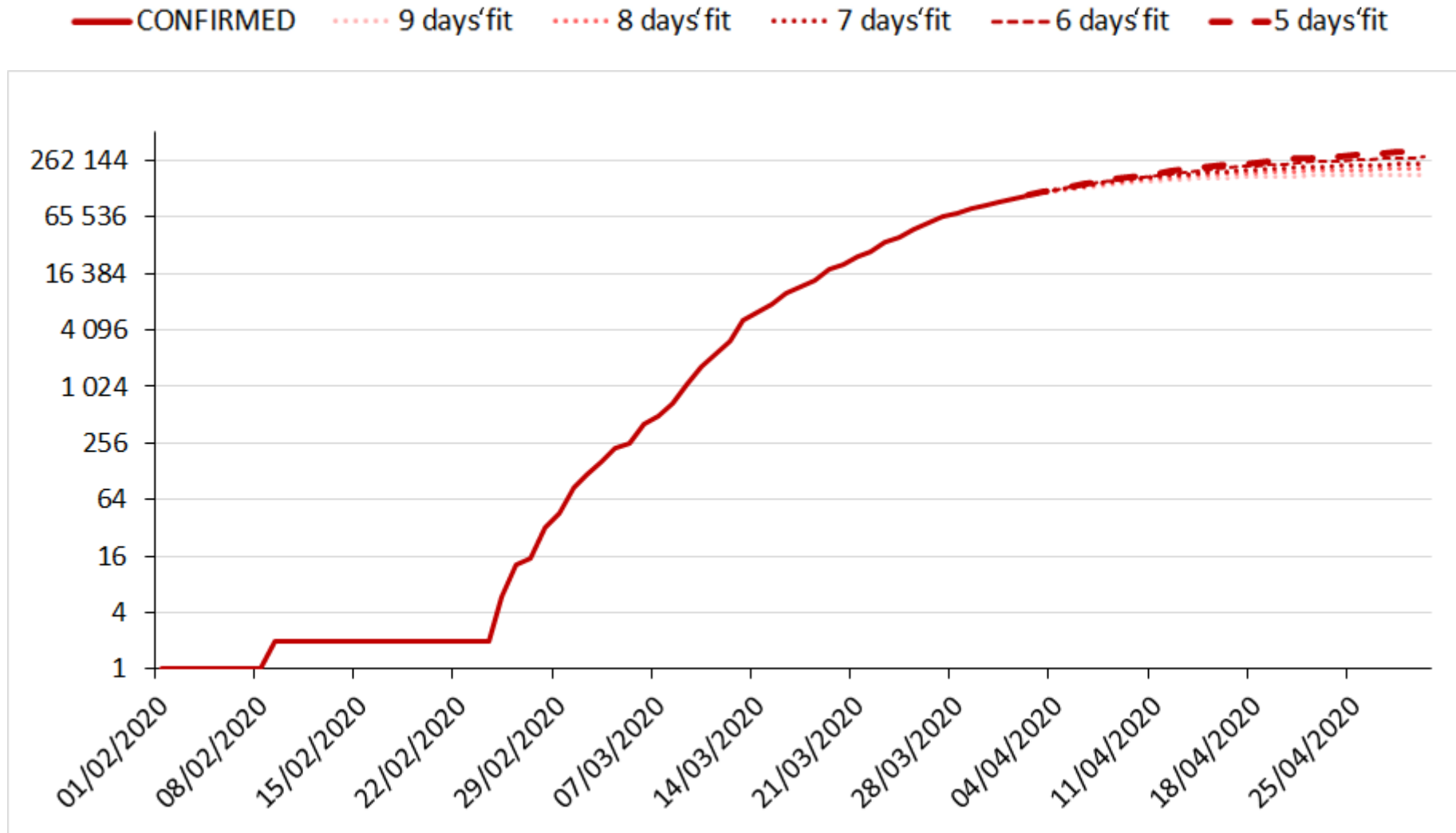
# South Korea

CONFIRMED 9 days'fit 8 days'fit 7 days'fit 6 days'fit 5 days'fit



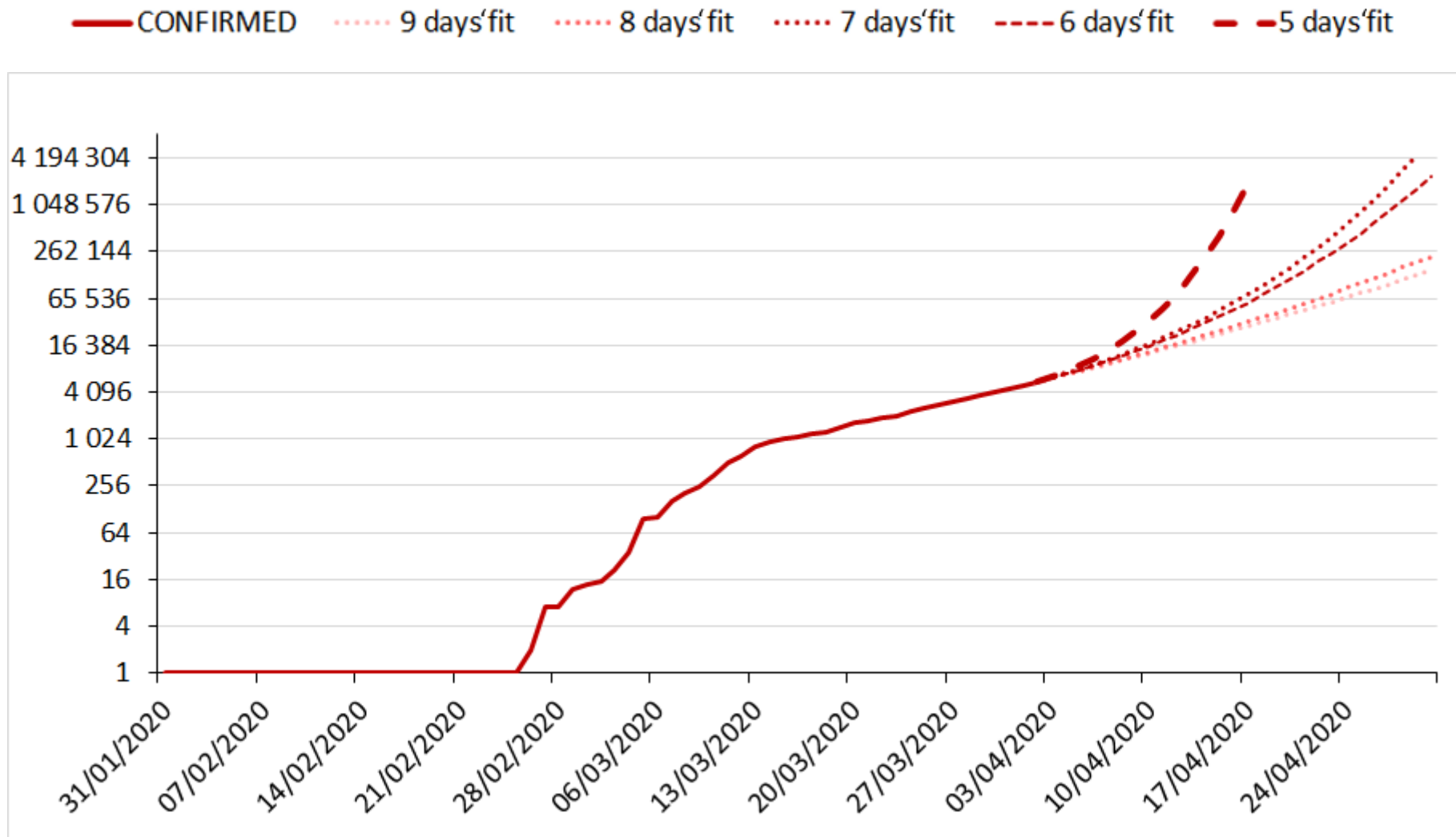
Data: The Johns Hopkins University, Politolog.com

# Spain



Data: The Johns Hopkins University, Politolog.com

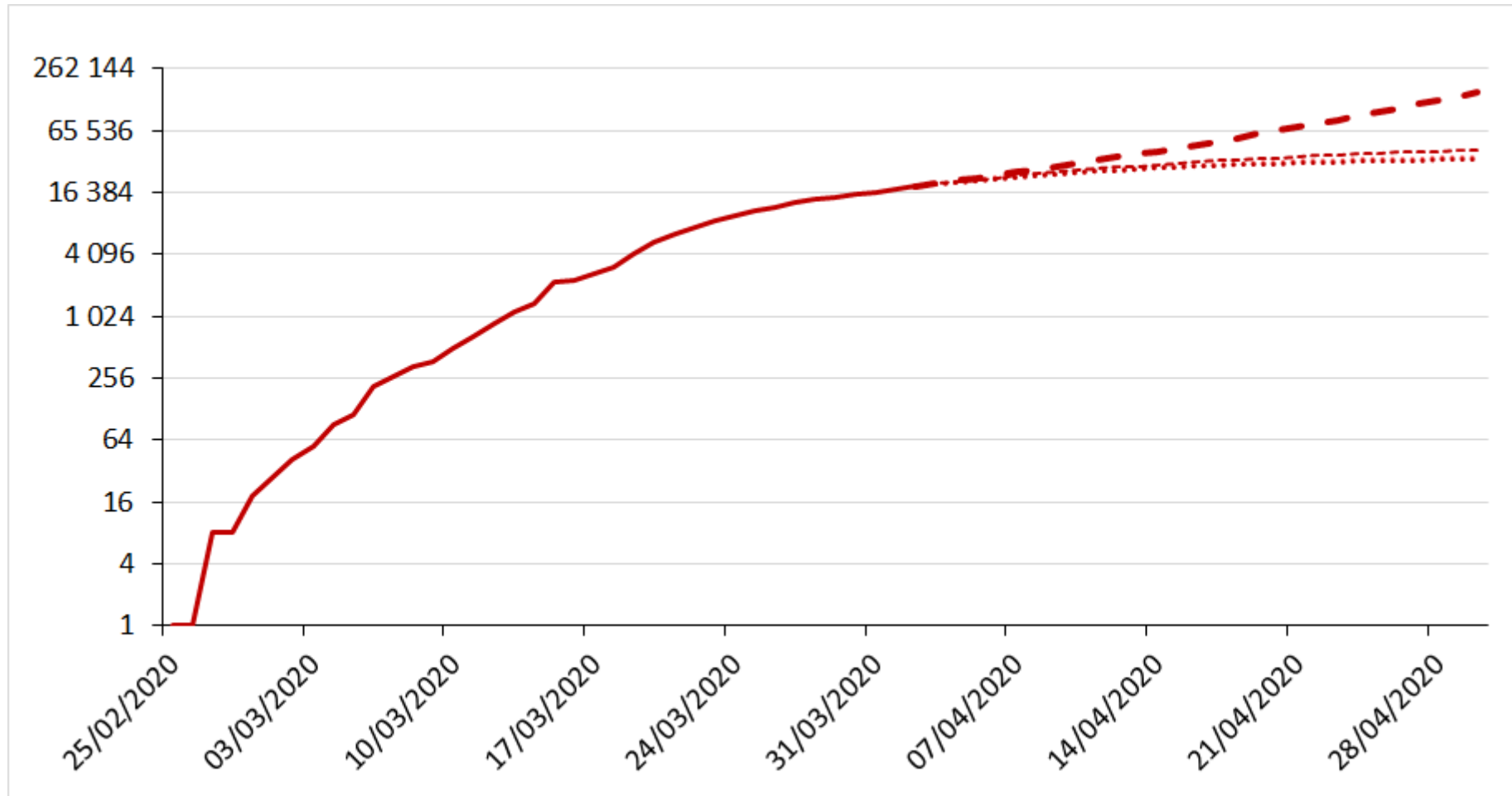
# Sweden



Data: The Johns Hopkins University, Politolog.com

# Switzerland

CONFIRMED 9 days' fit 8 days' fit 7 days' fit 6 days' fit 5 days' fit

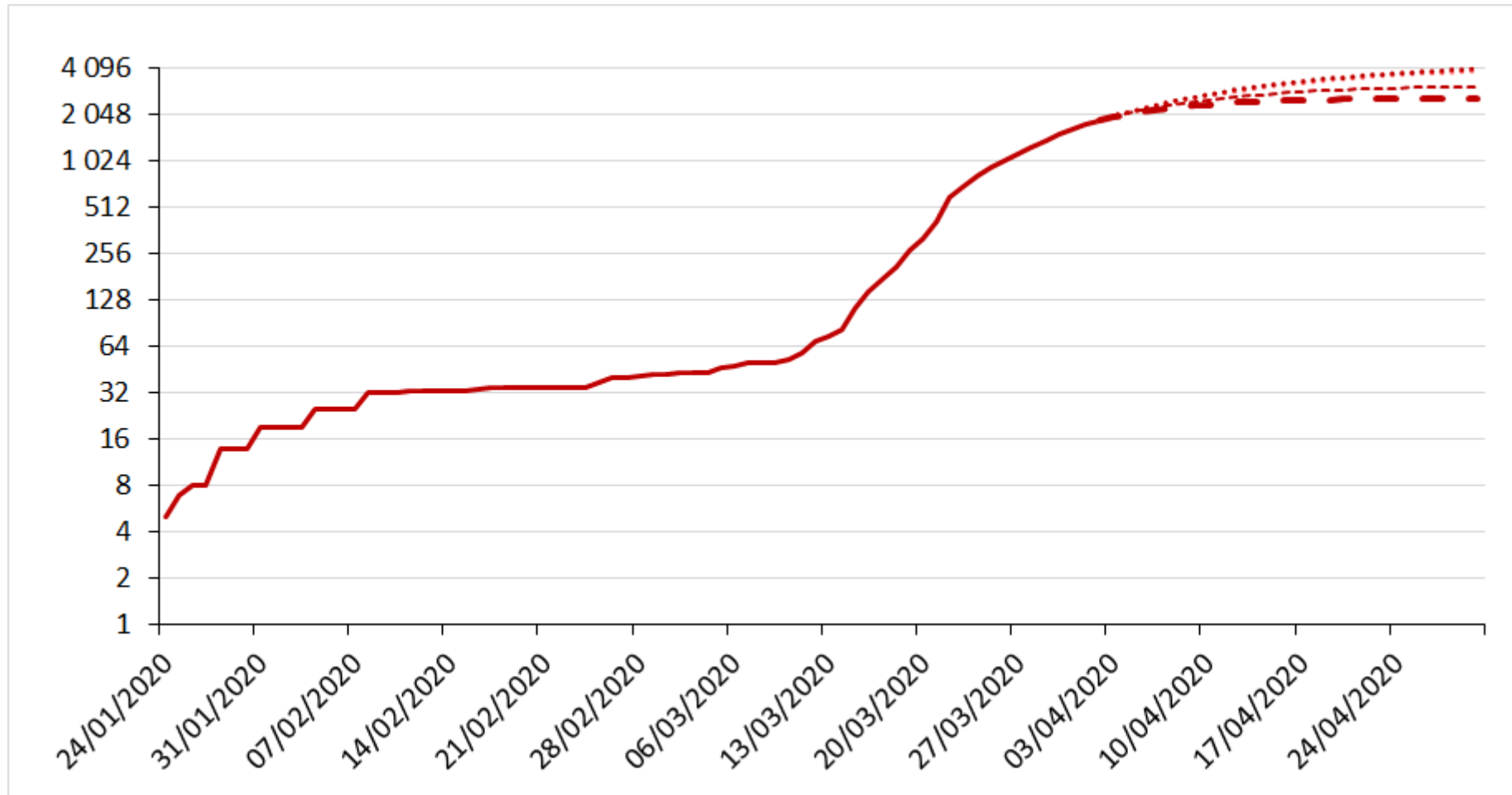


Data: The Johns Hopkins University, Politolog.com



# Thailand

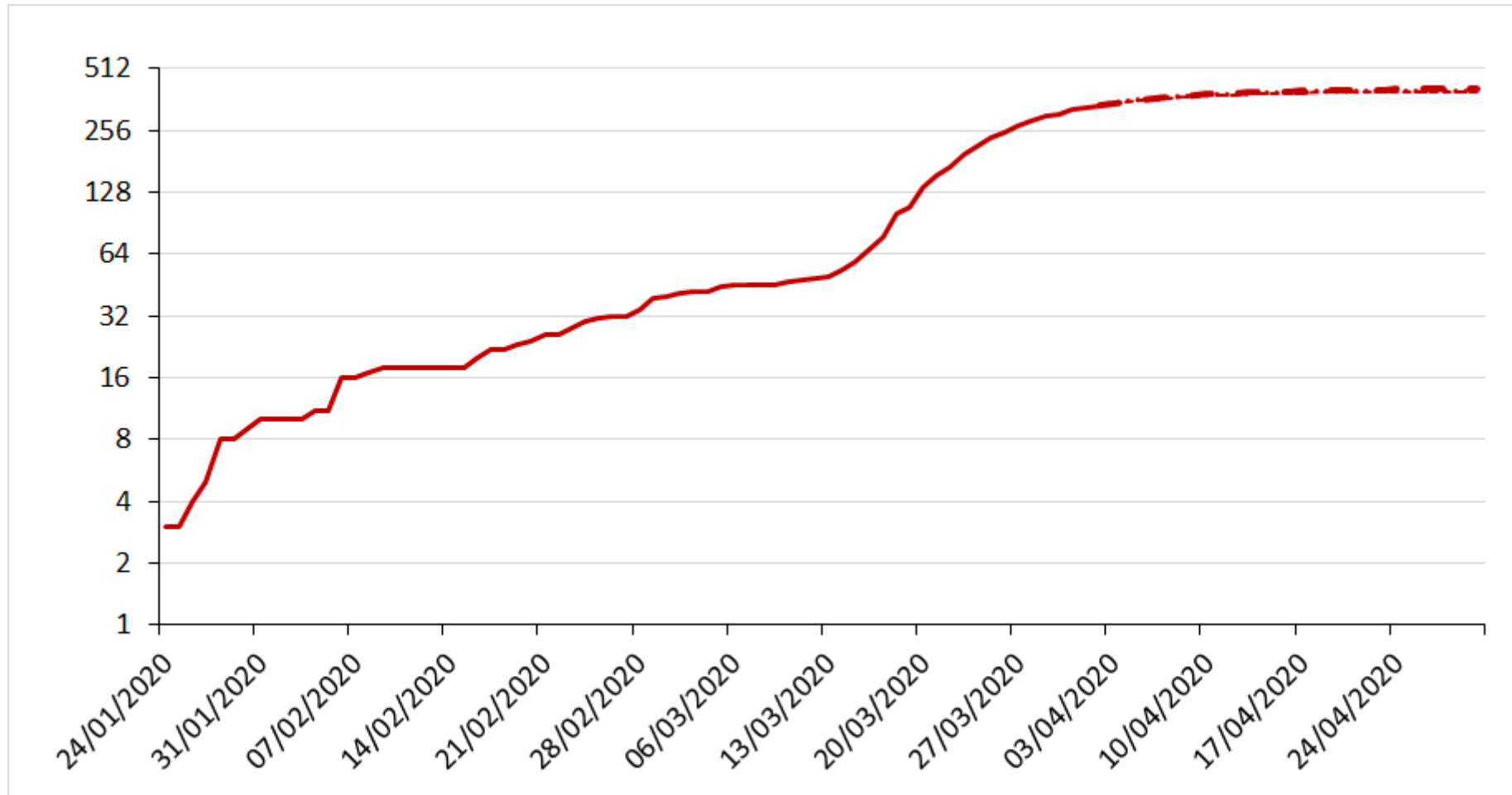
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Data: The Johns Hopkins University, Politolog.com

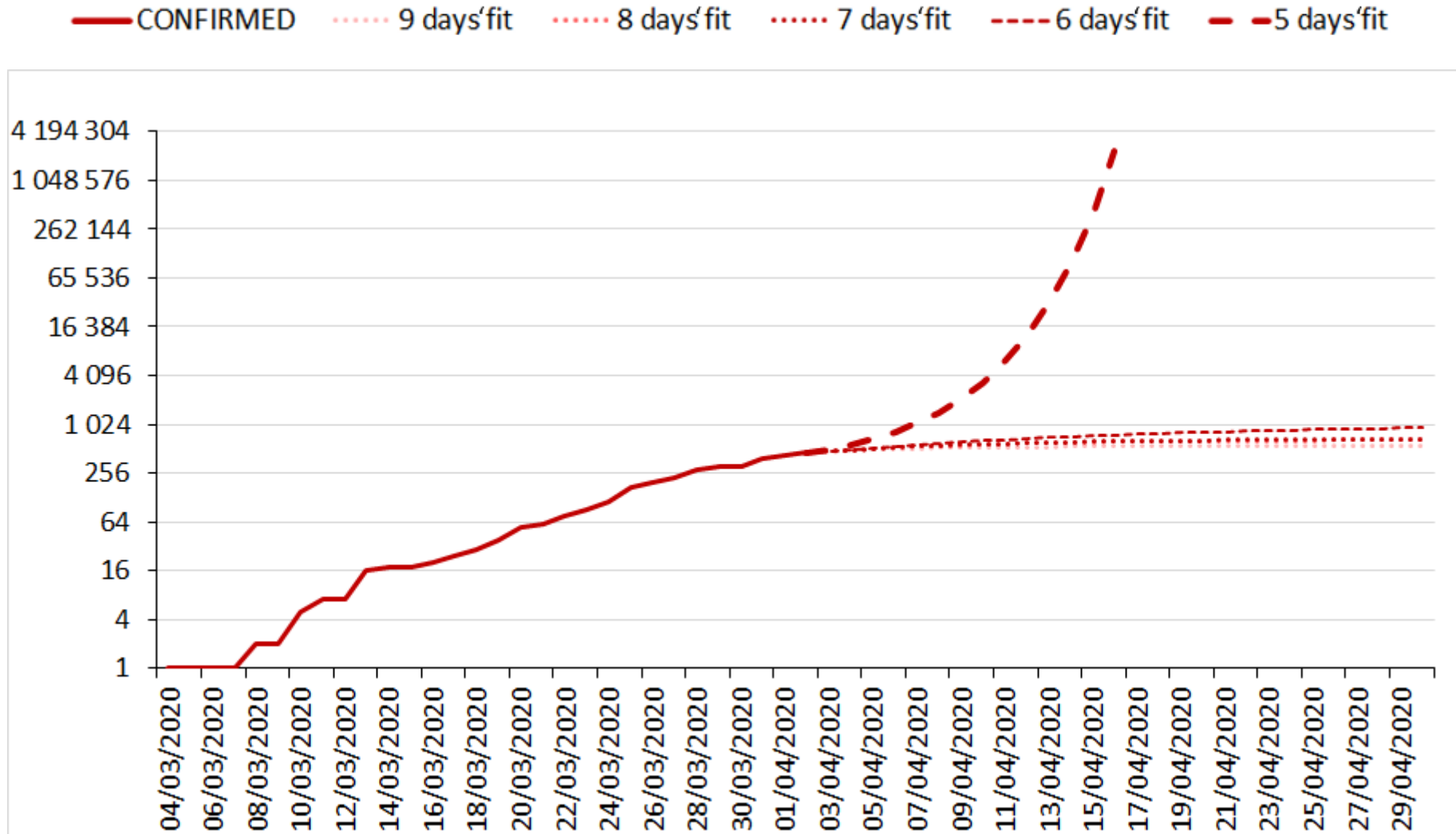
# Taiwan

CONFIRMED 9 days'fit 8 days'fit 7 days'fit 6 days'fit 5 days'fit



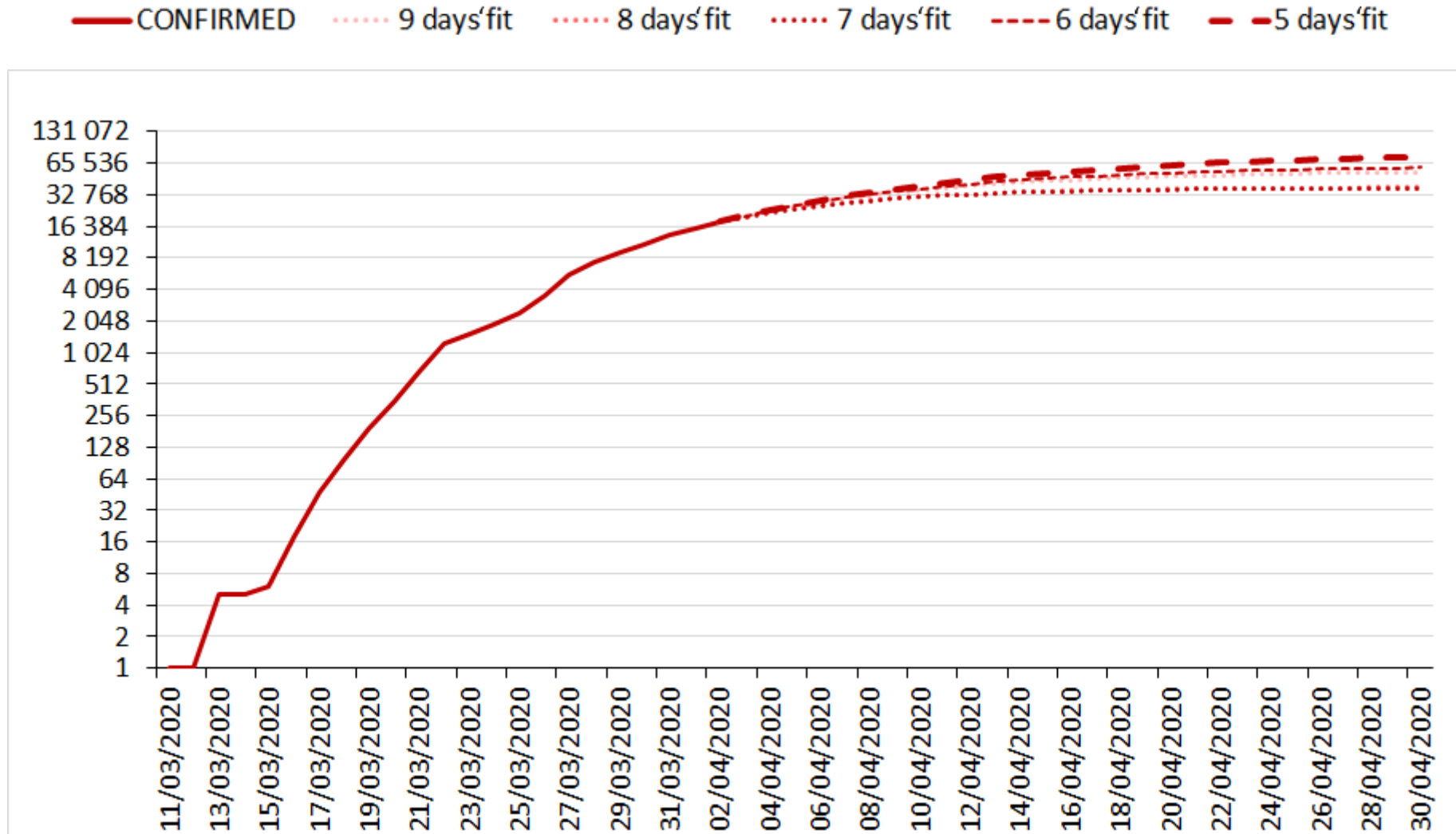
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# Tunisia



Data: The Johns Hopkins University, Politolog.com

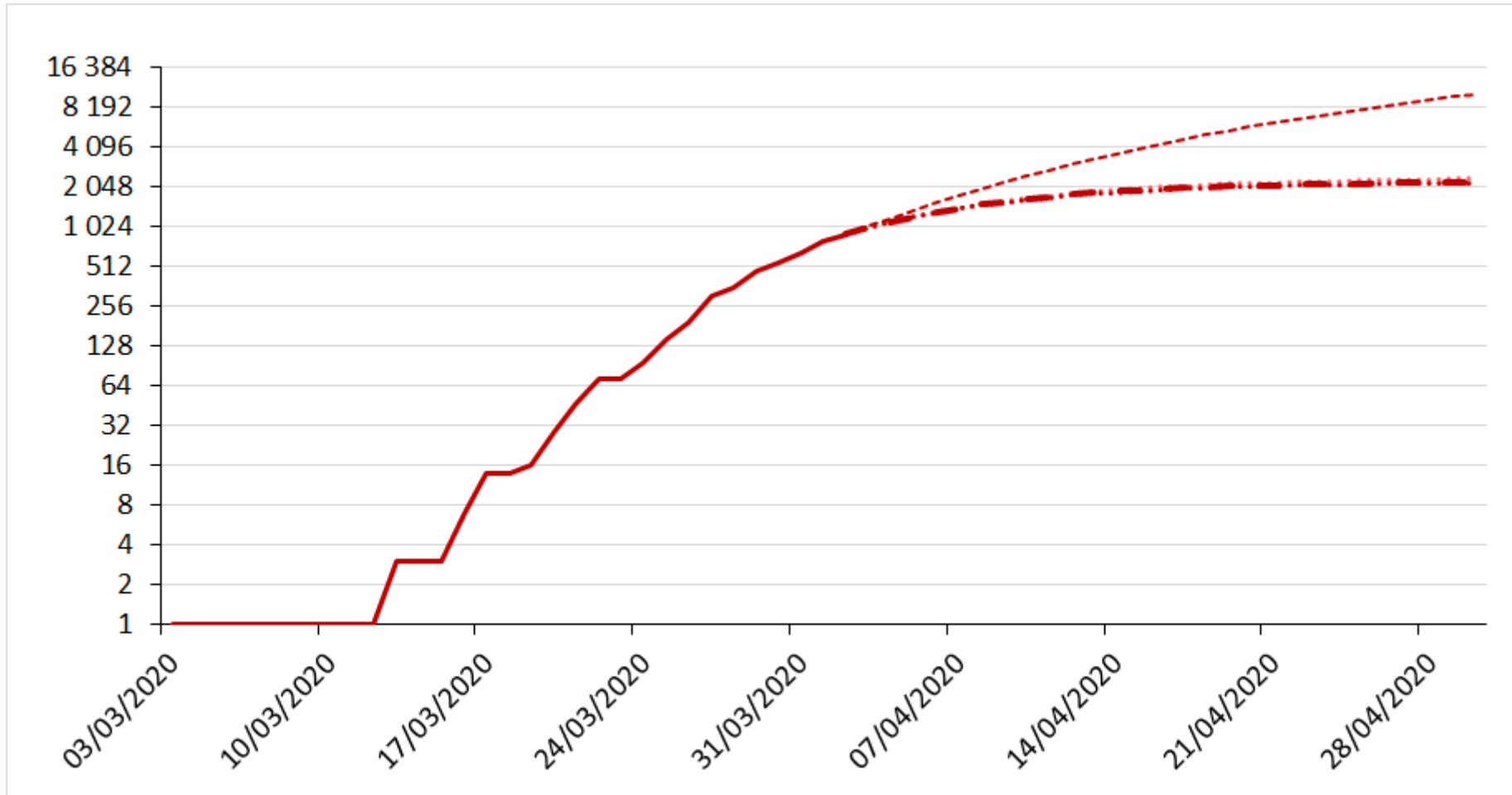
# Turkey



Data: The Johns Hopkins University, Politolog.com

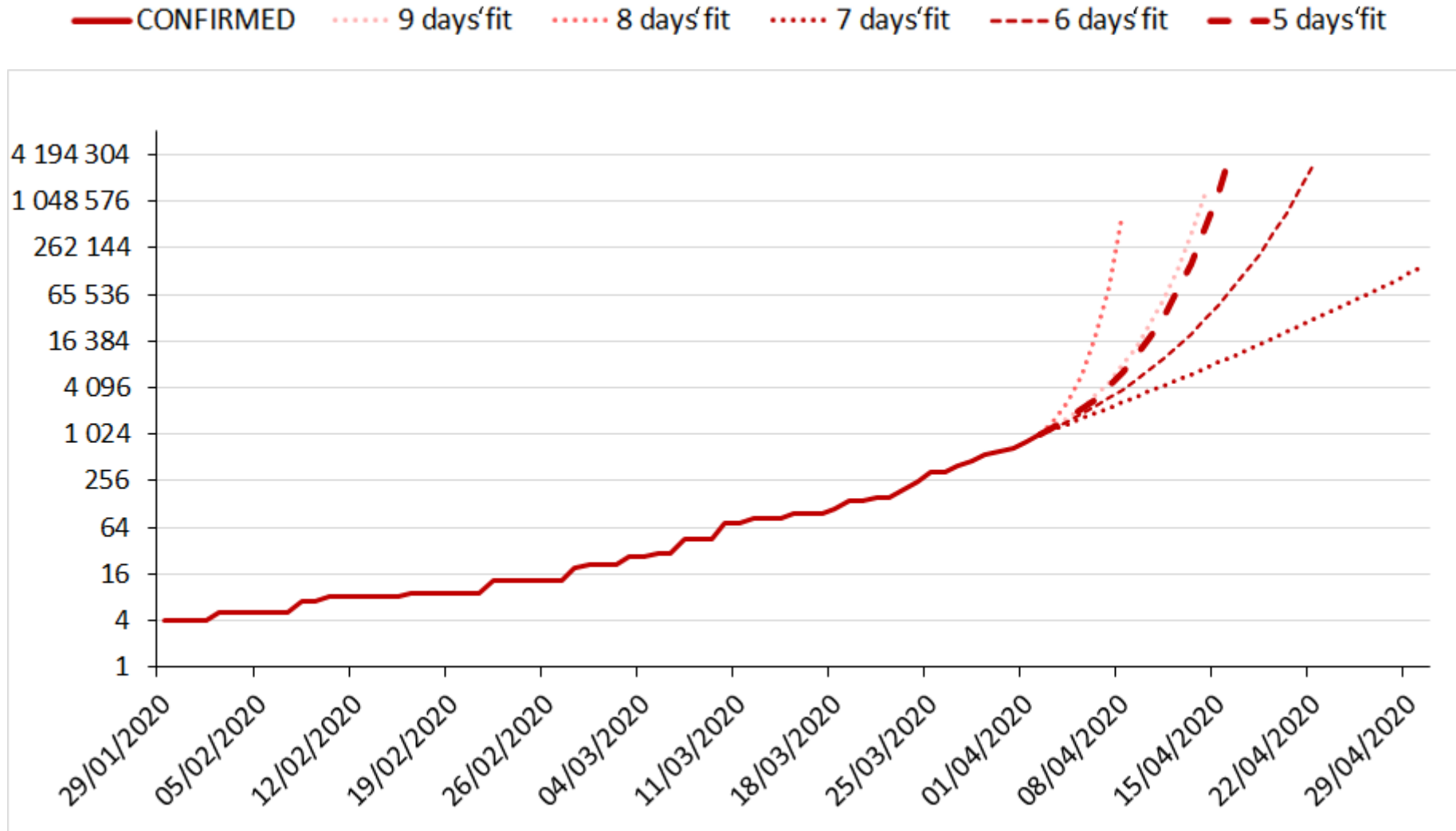
# Ukraine

CONFIRMED 9 days'fit 8 days'fit 7 days'fit 6 days'fit 5 days'fit



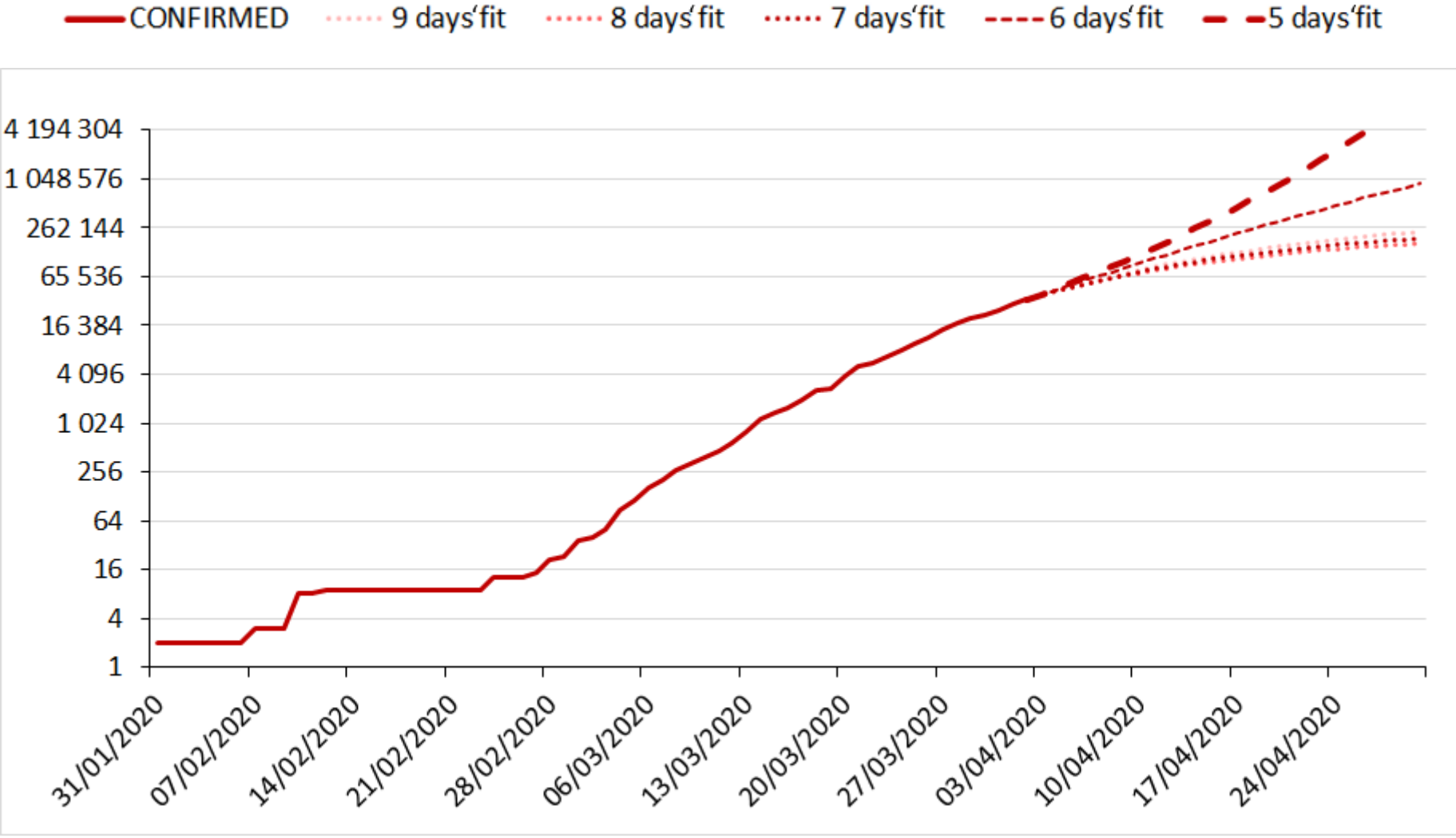
Data: The Johns Hopkins University, Politolog.com

# United Arab Emirates



Data: The Johns Hopkins University, Politolog.com

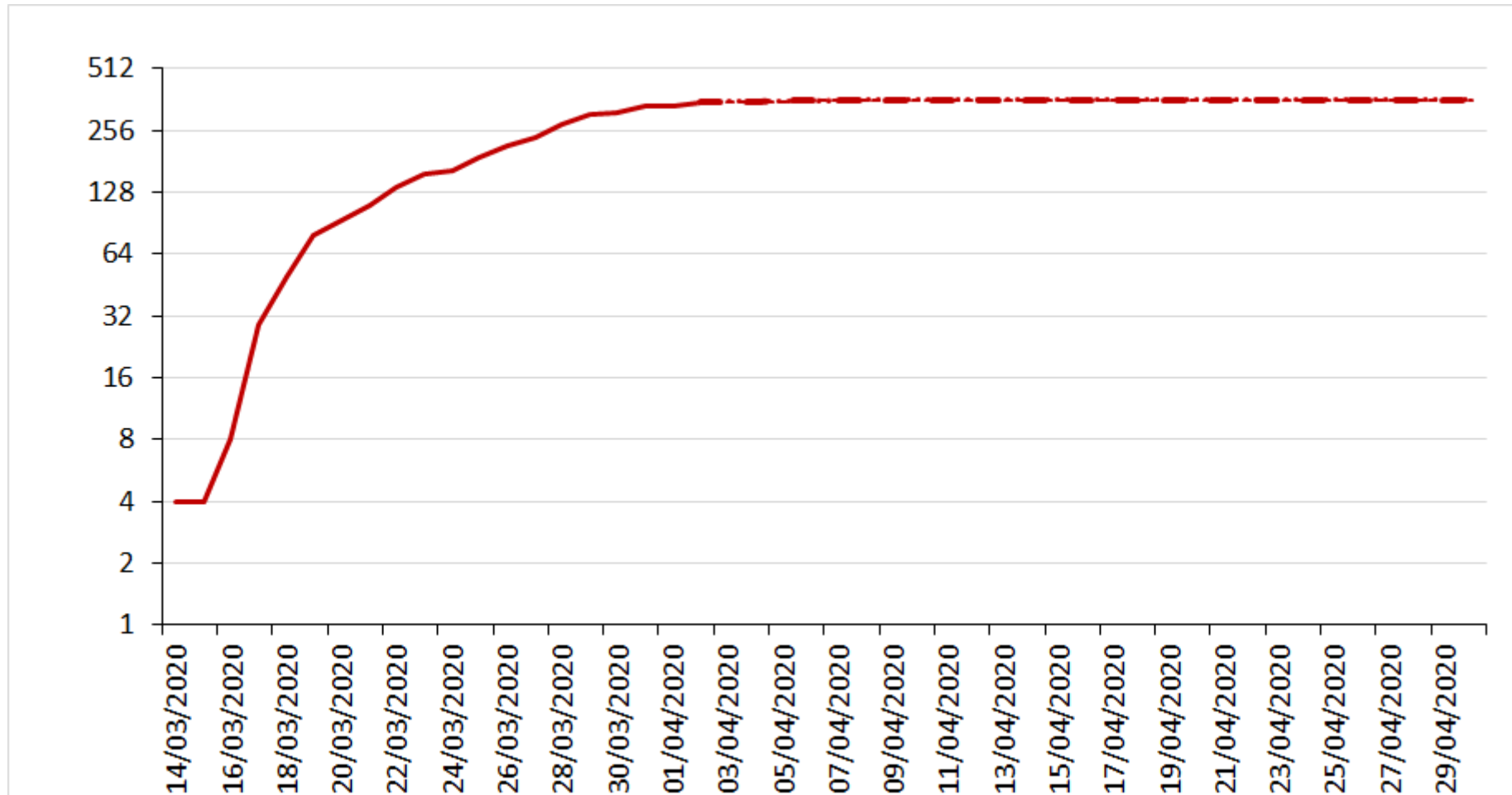
# United Kingdom



Data: The Johns Hopkins University, Politolog.com

# Uruguay

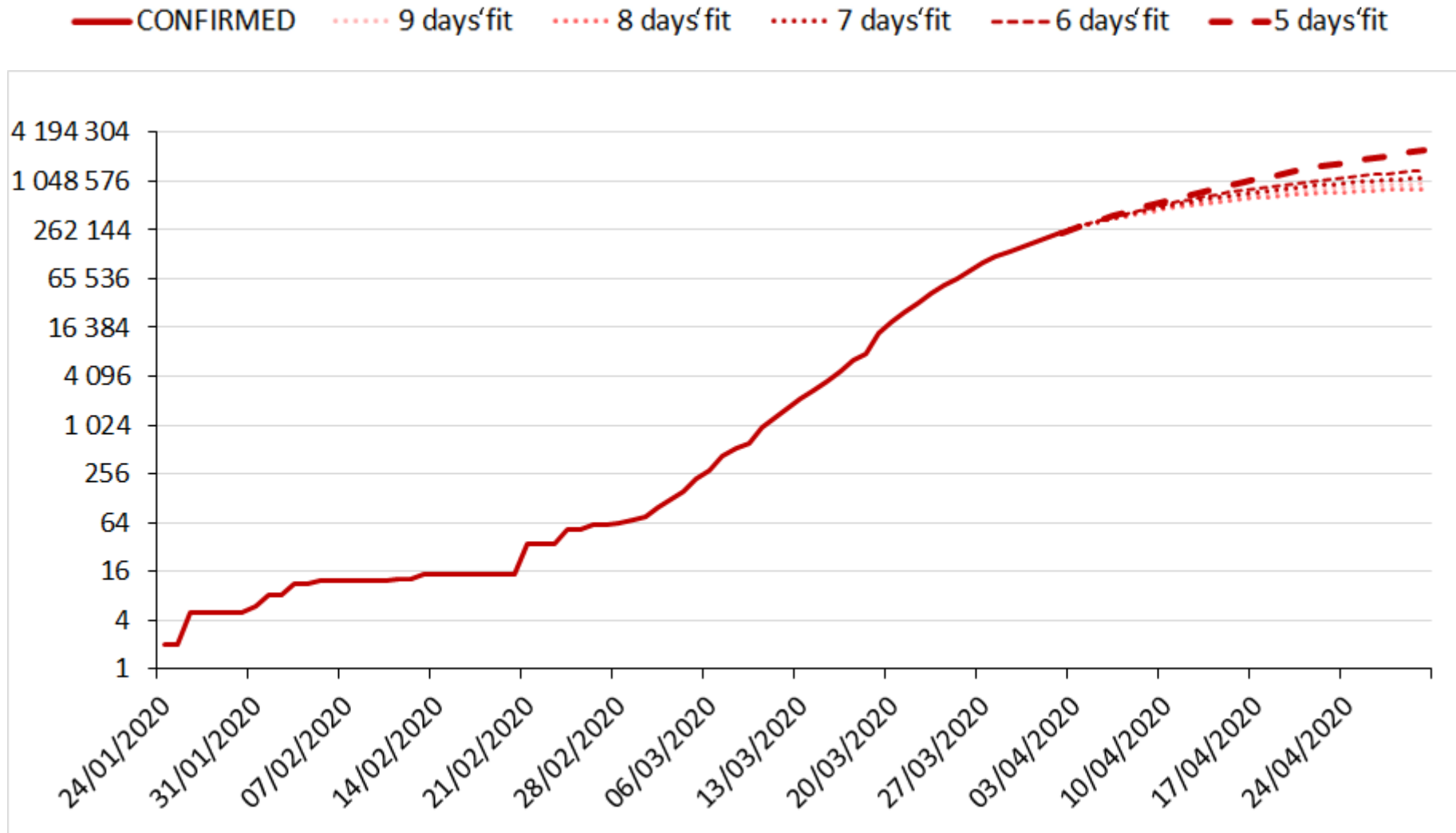
CONFIRMED 9 days' fit 8 days' fit 7 days' fit 6 days' fit 5 days' fit



Data: The Johns Hopkins University, Politolog.com



# USA



Data: The Johns Hopkins University, Politolog.com



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