

29 March 2020

COVID-19 Projections

Didier Darcet

COVID-19 Cases' and Deaths' Projection Method

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.

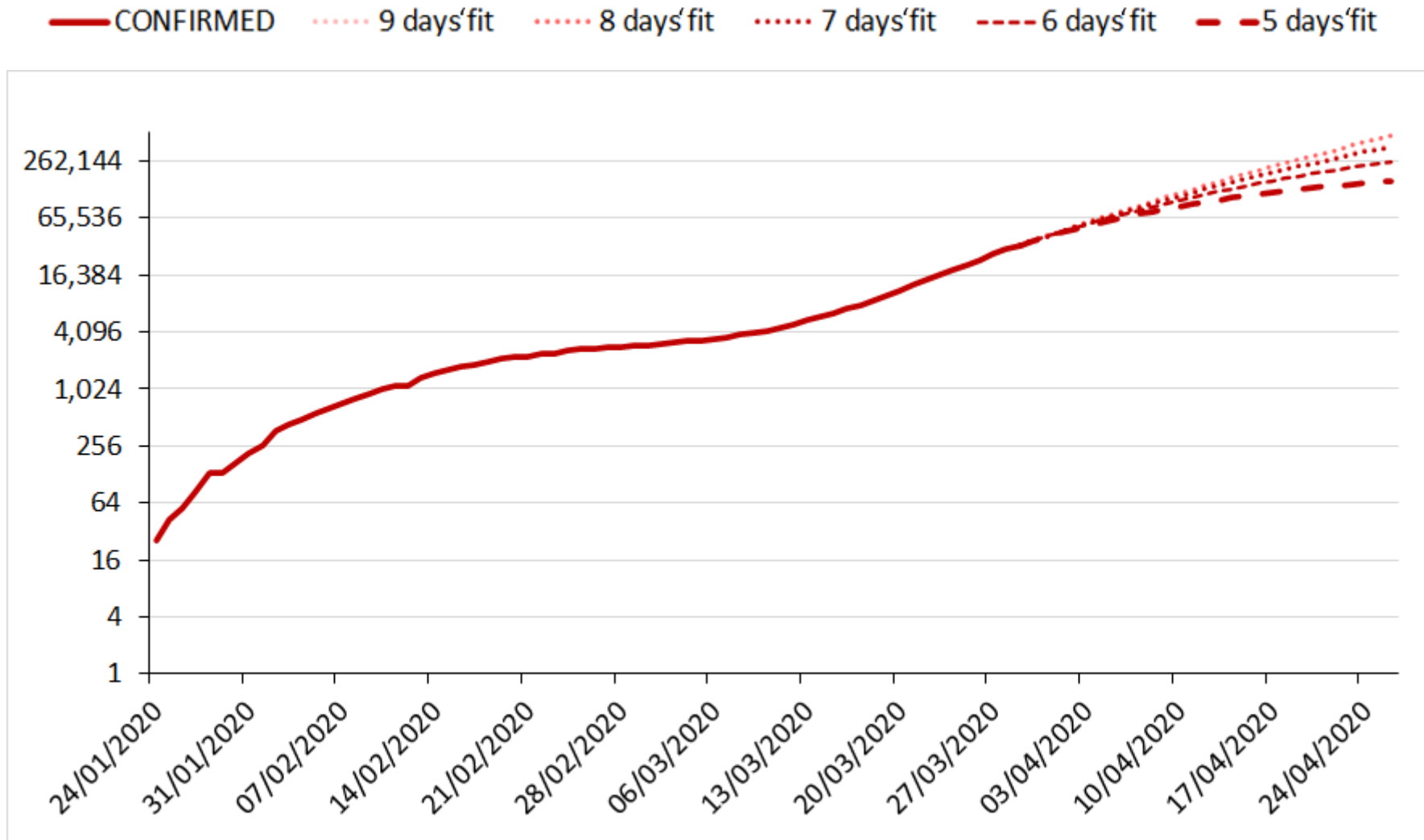
The jolt is fitted with an exponential function over, respectively, the previous 5, 6, 7, 8 and 9 days. Large numbers are truncated to facilitate the reading of the charts.

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.

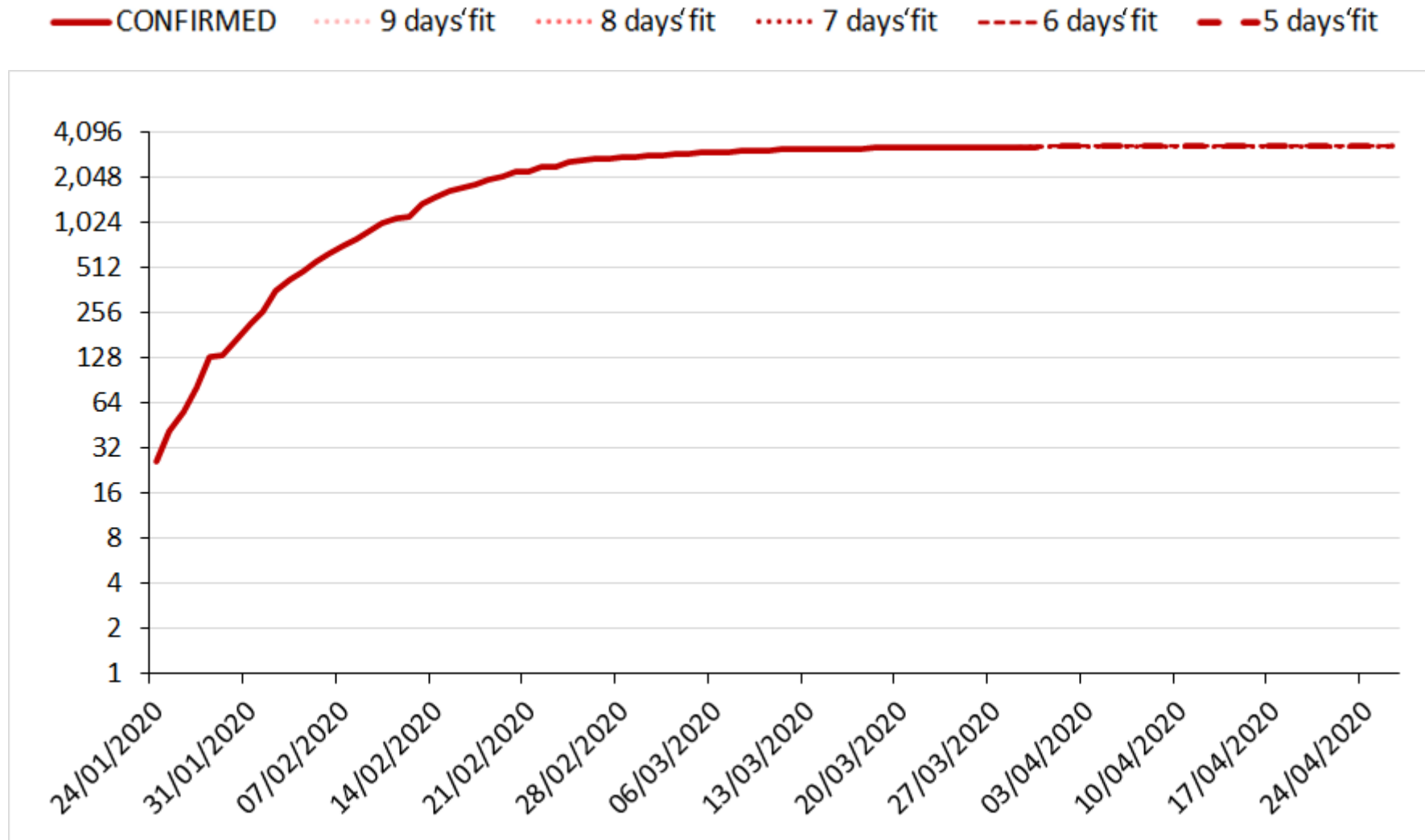
DEATHS - PROJECTIONS

World



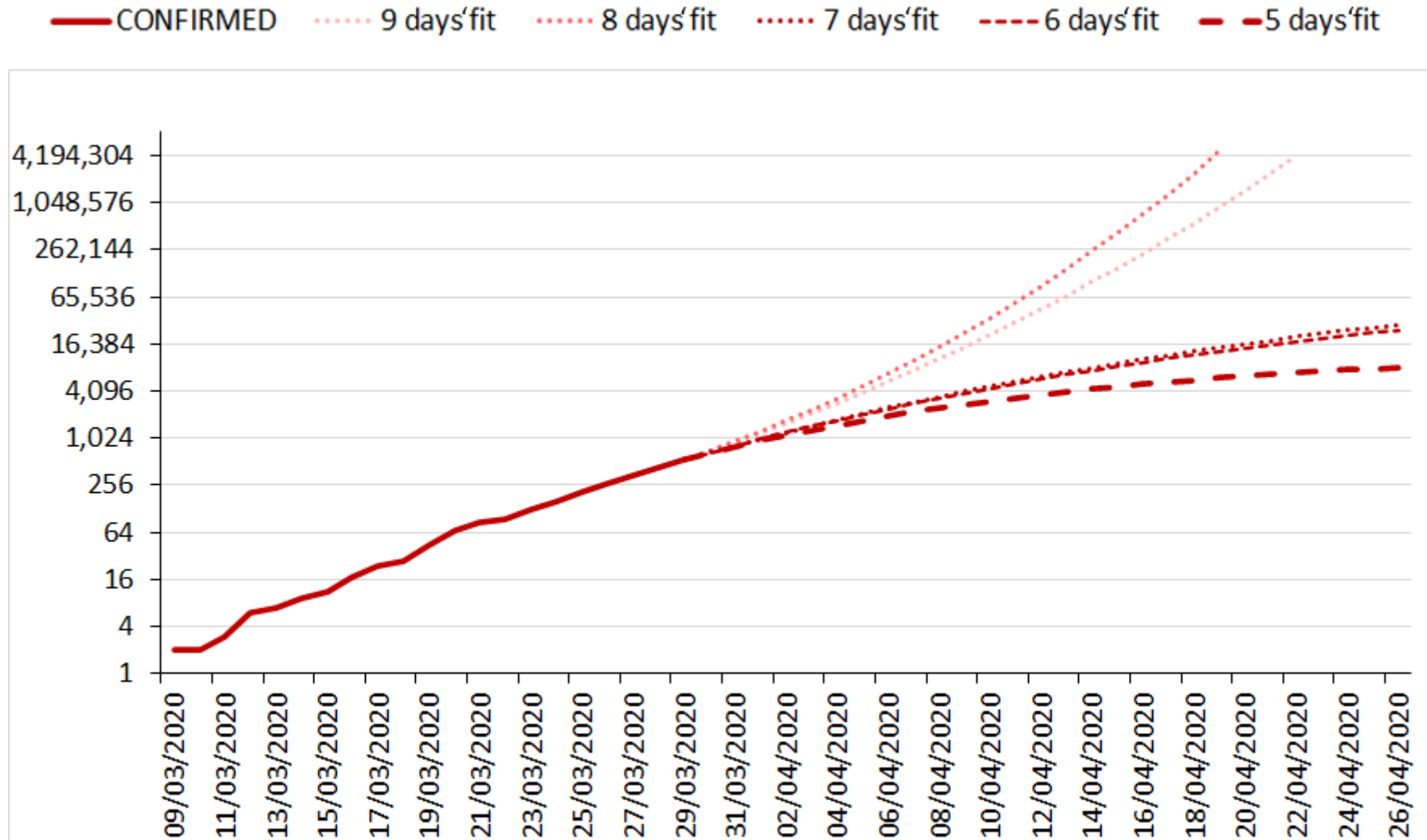
Data: The Johns Hopkins University, Politolog.com

China



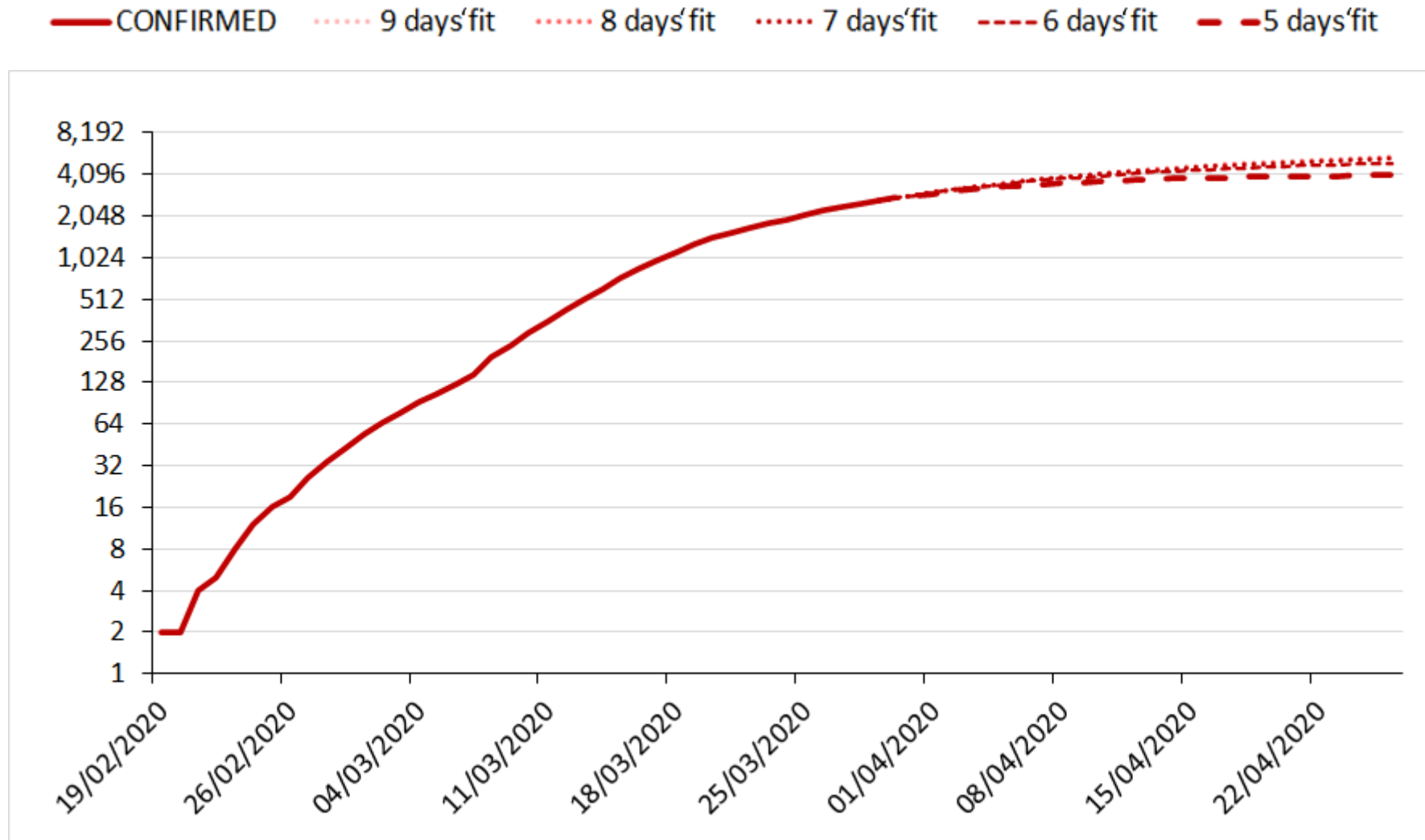
Data: The Johns Hopkins University, Politolog.com

Germany



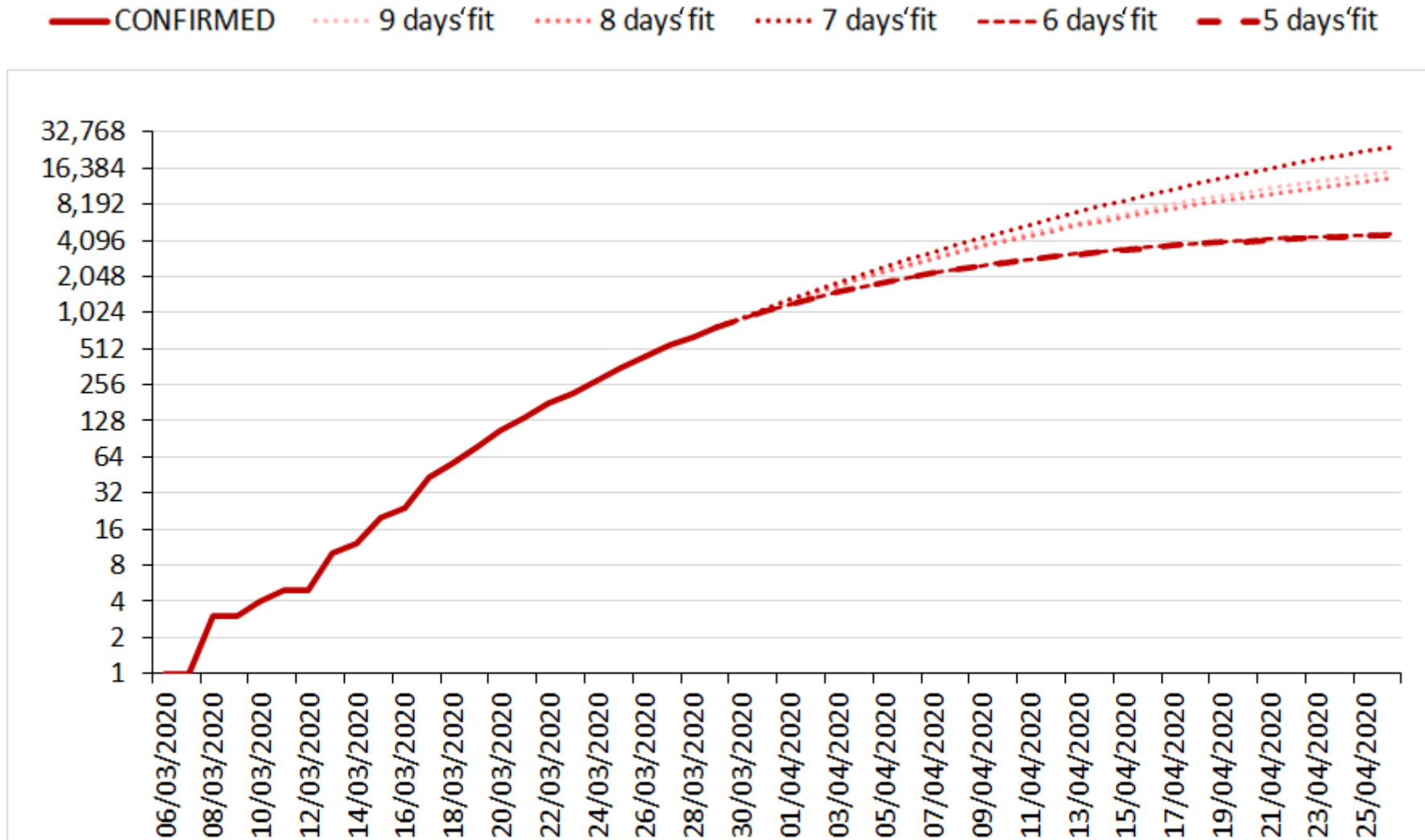
Data: The Johns Hopkins University, Politolog.com

Iran



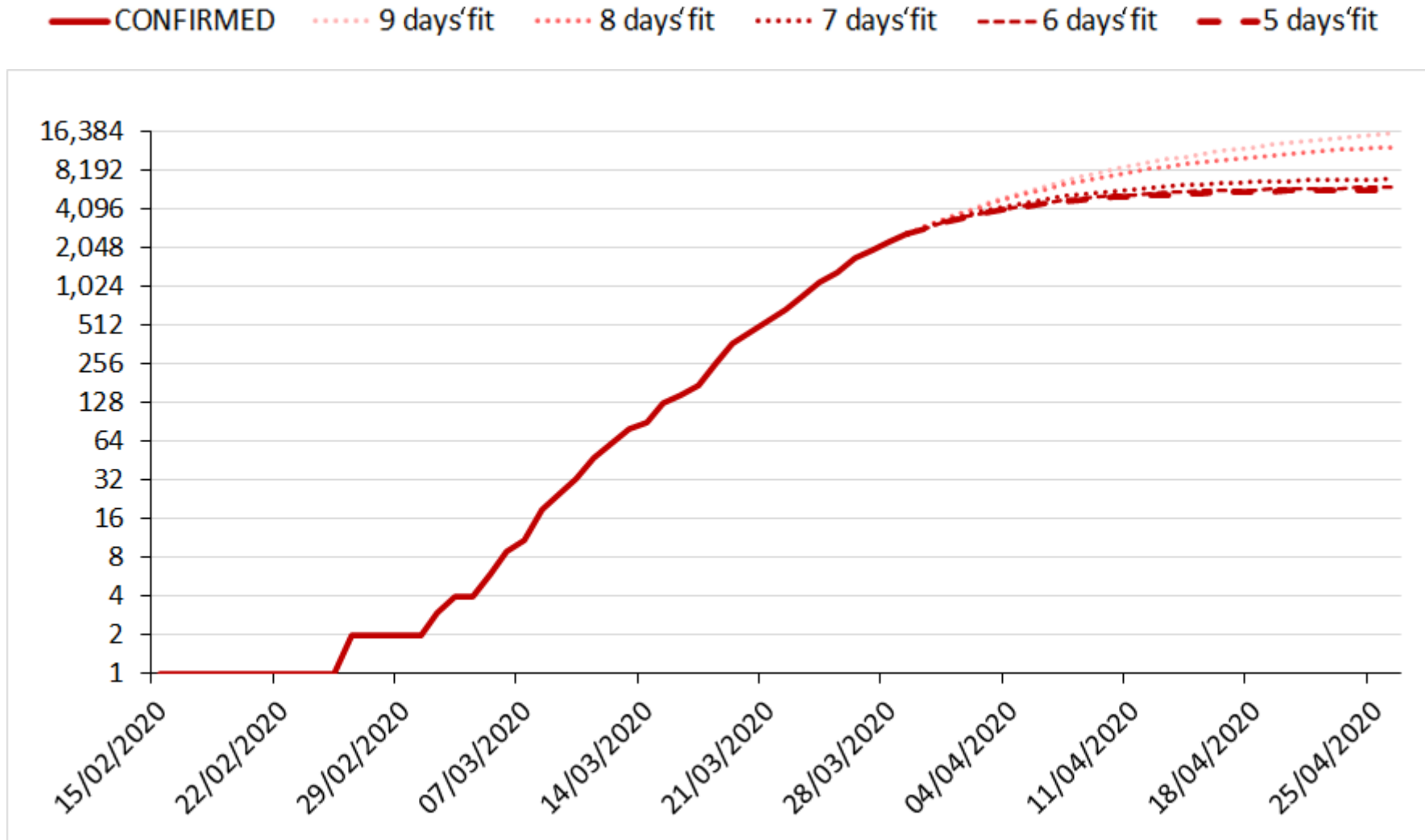
Data: The Johns Hopkins University, Politolog.com

Netherlands



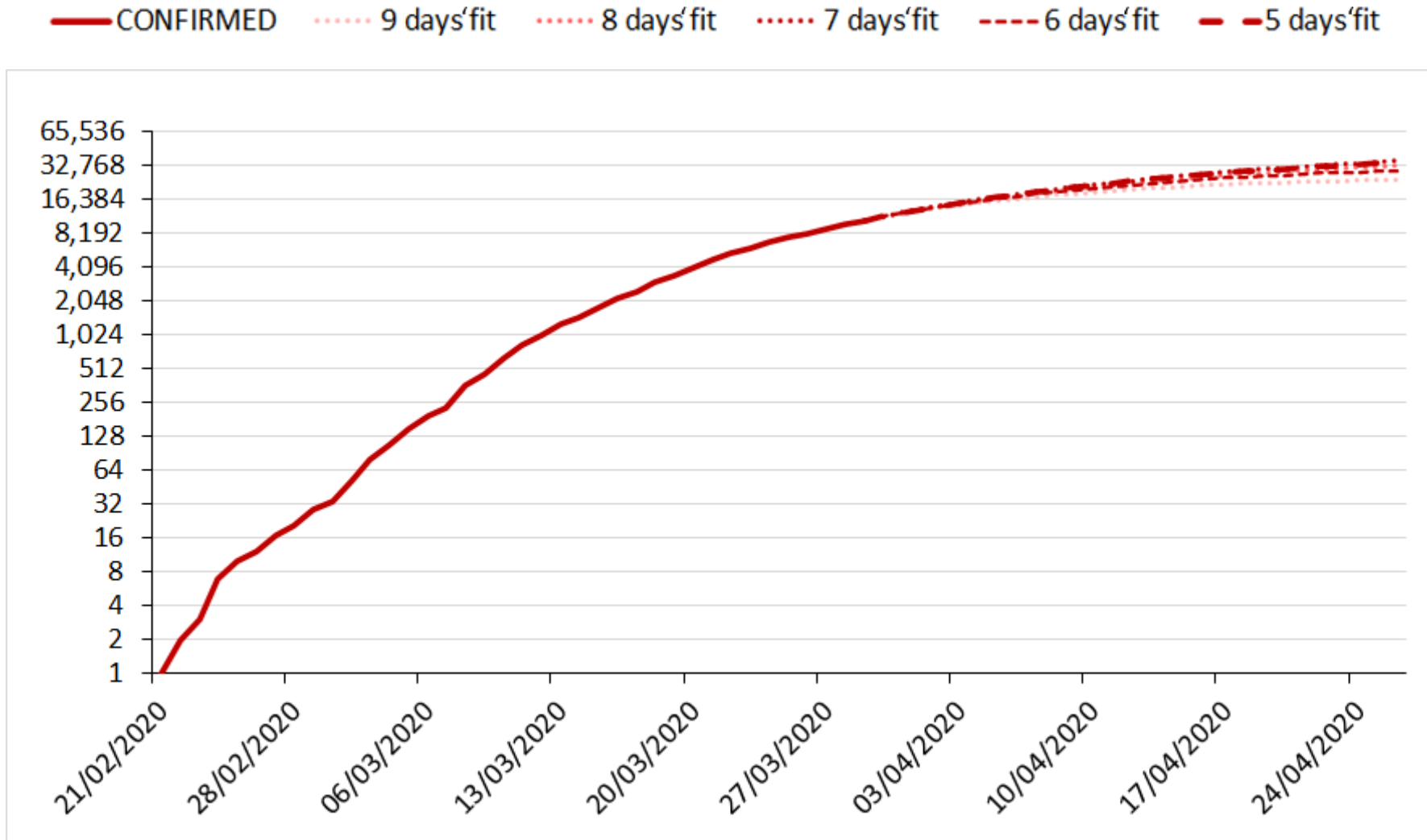
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France



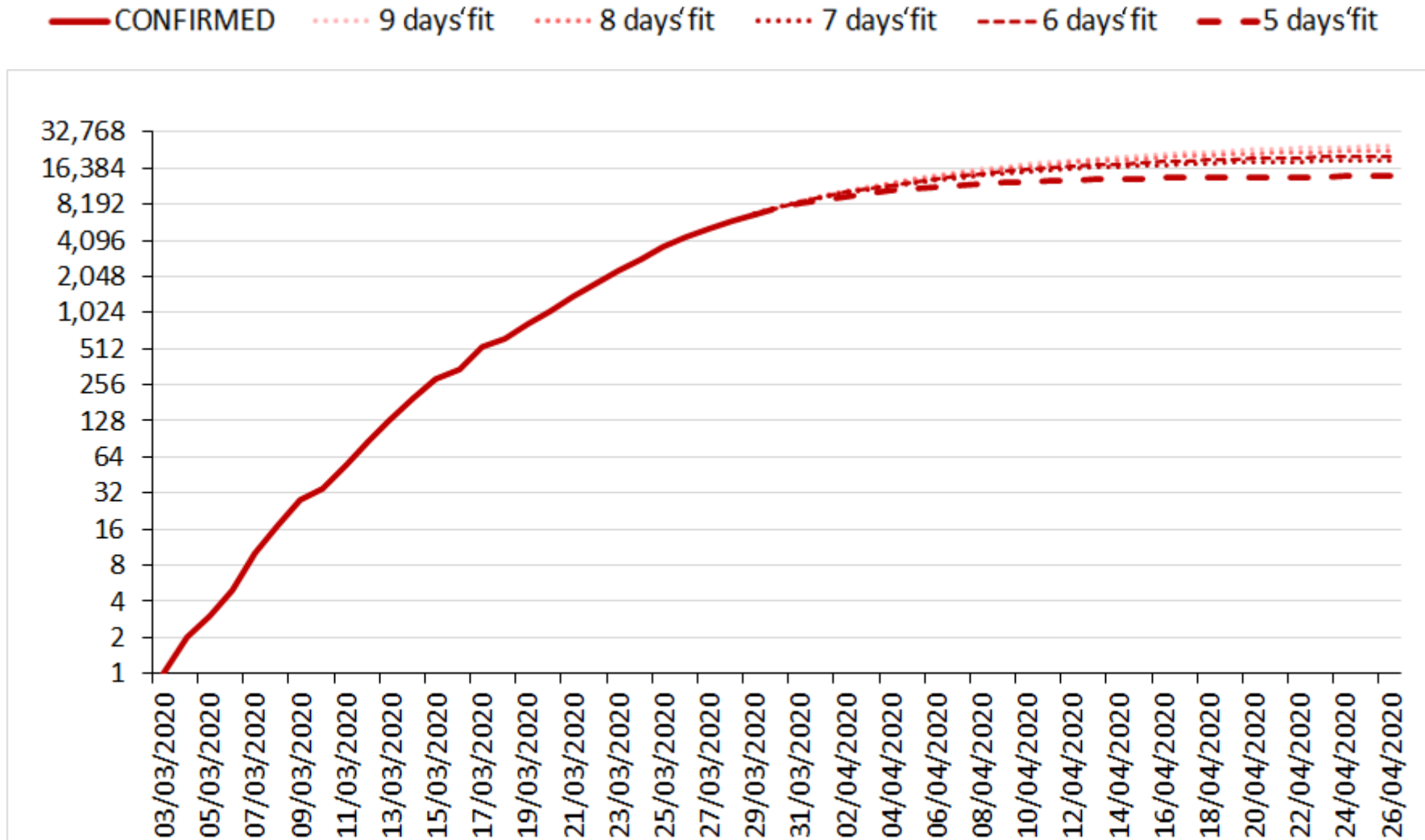
Data: The Johns Hopkins University, Politolog.com

Italy



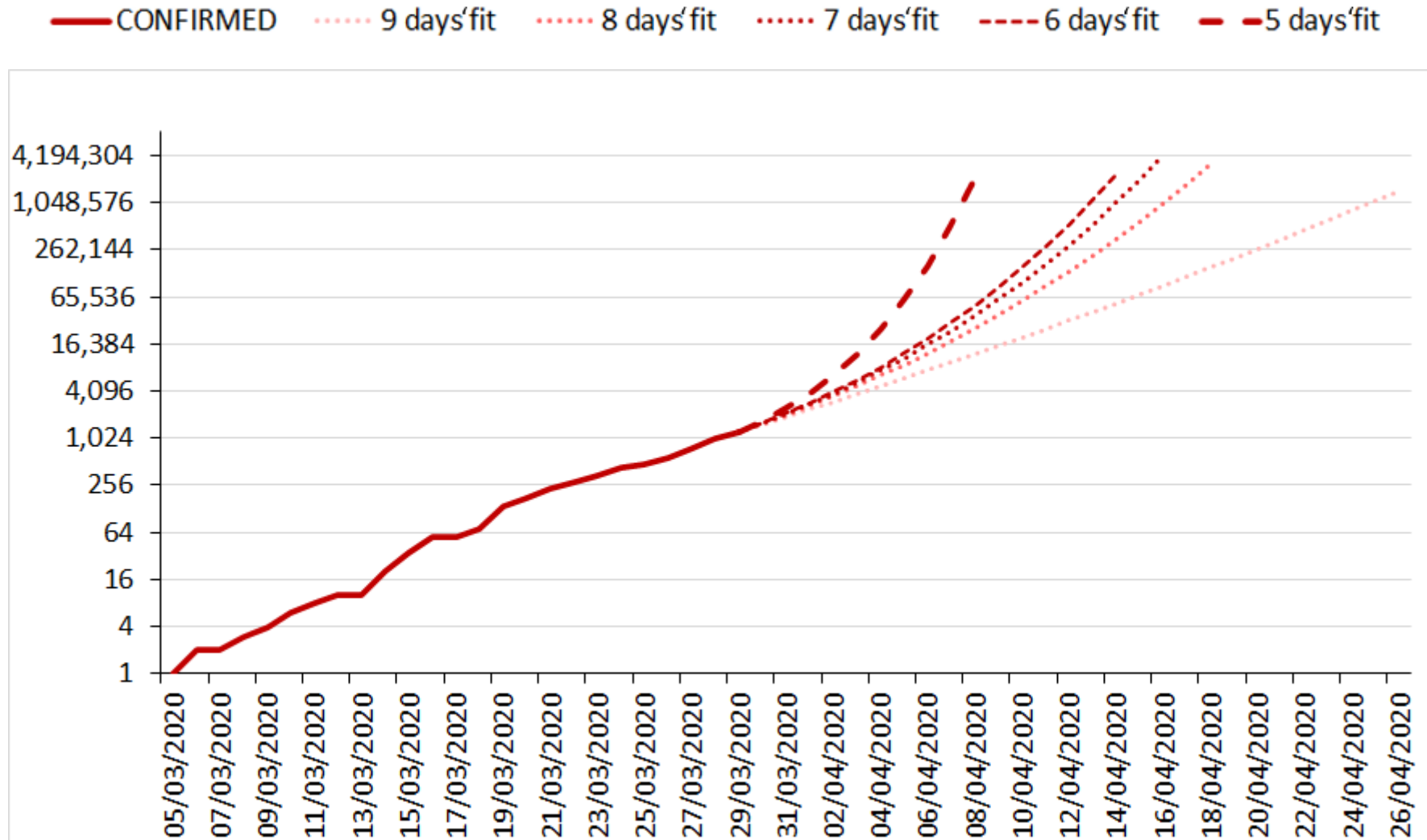
Data: The Johns Hopkins University, Politolog.com

Spain



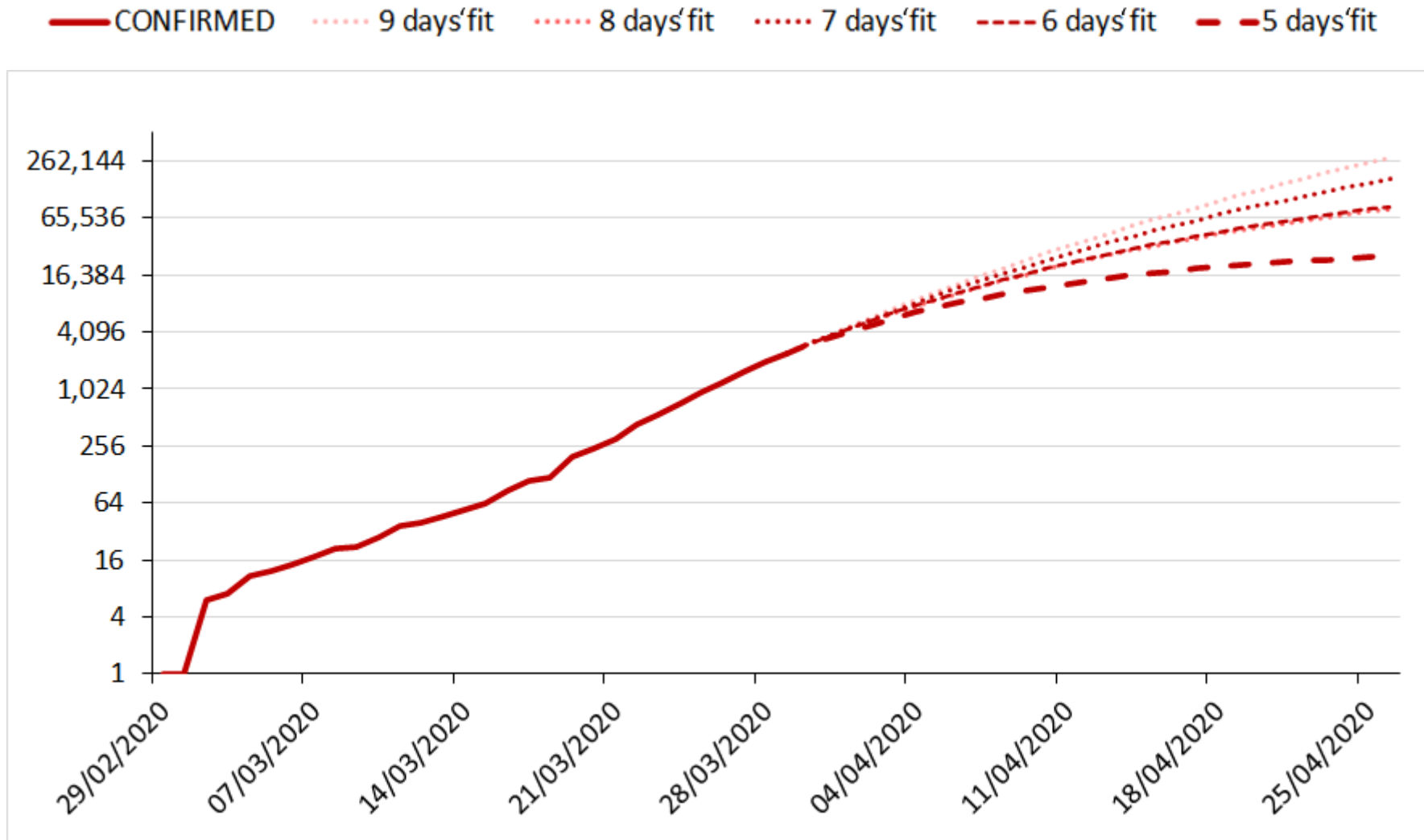
Data: The Johns Hopkins University, Politolog.com

United Kingdom



Data: The Johns Hopkins University, Politolog.com

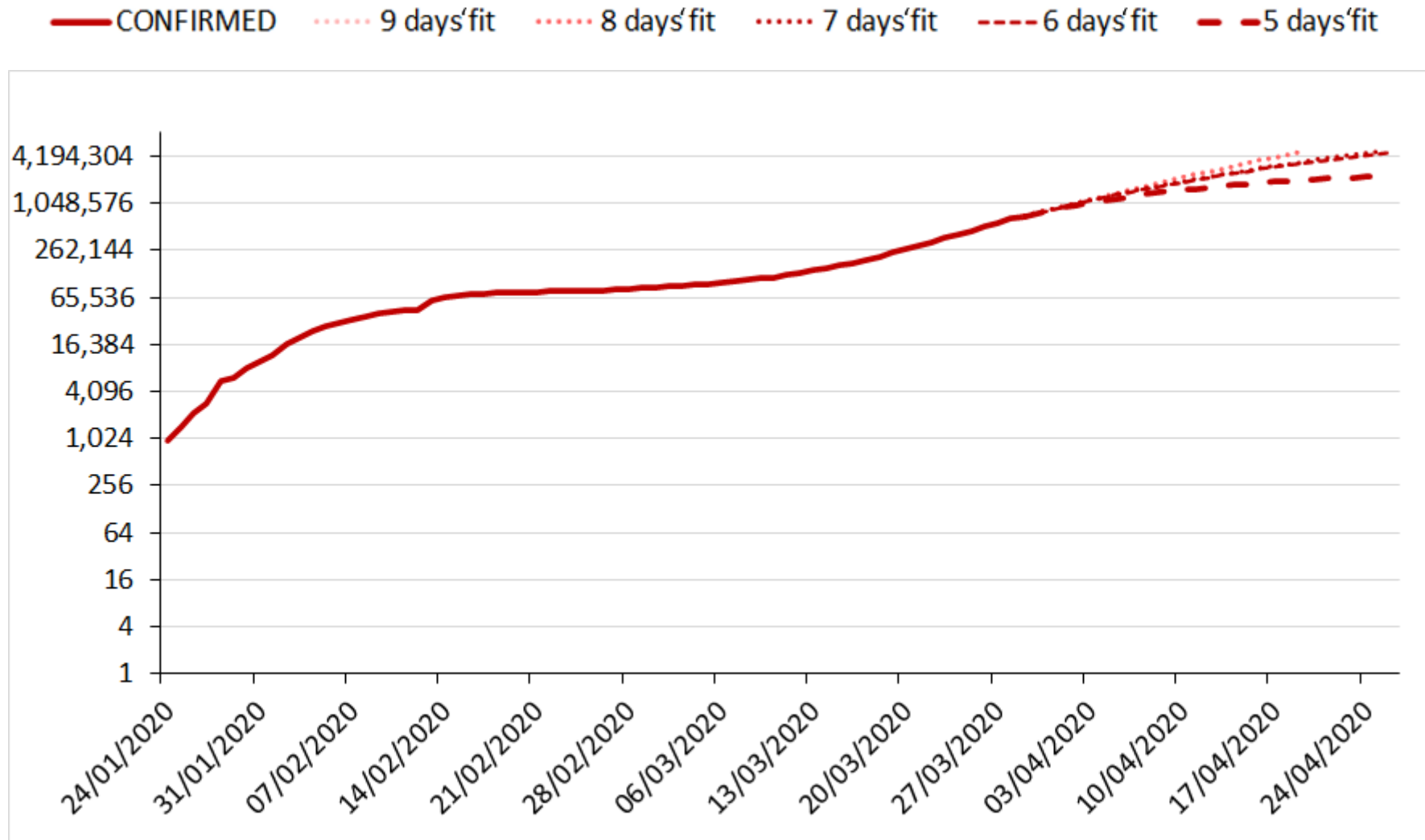
USA



Data: The Johns Hopkins University, Politolog.com

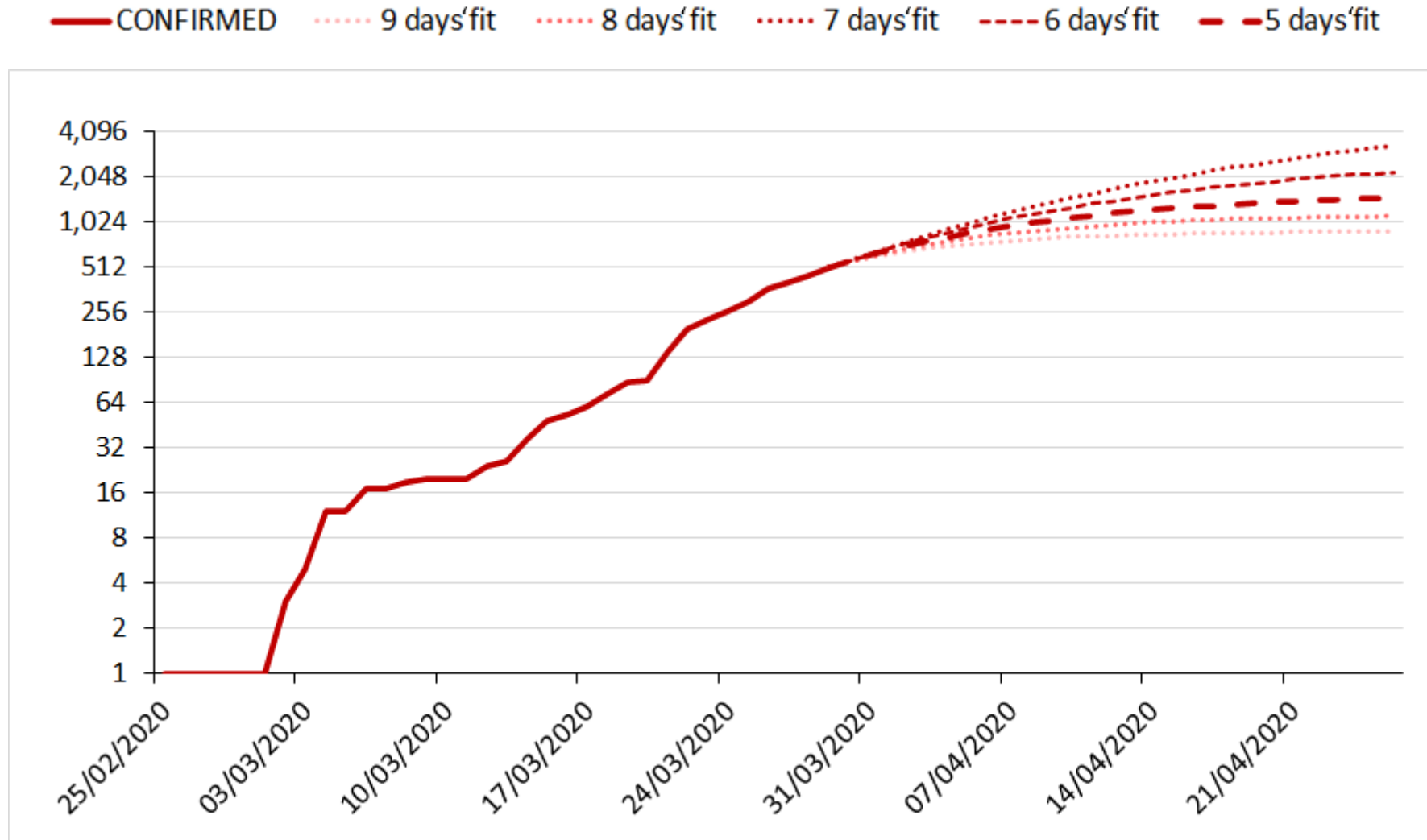
CUMULATED CASES - PROJECTIONS

World



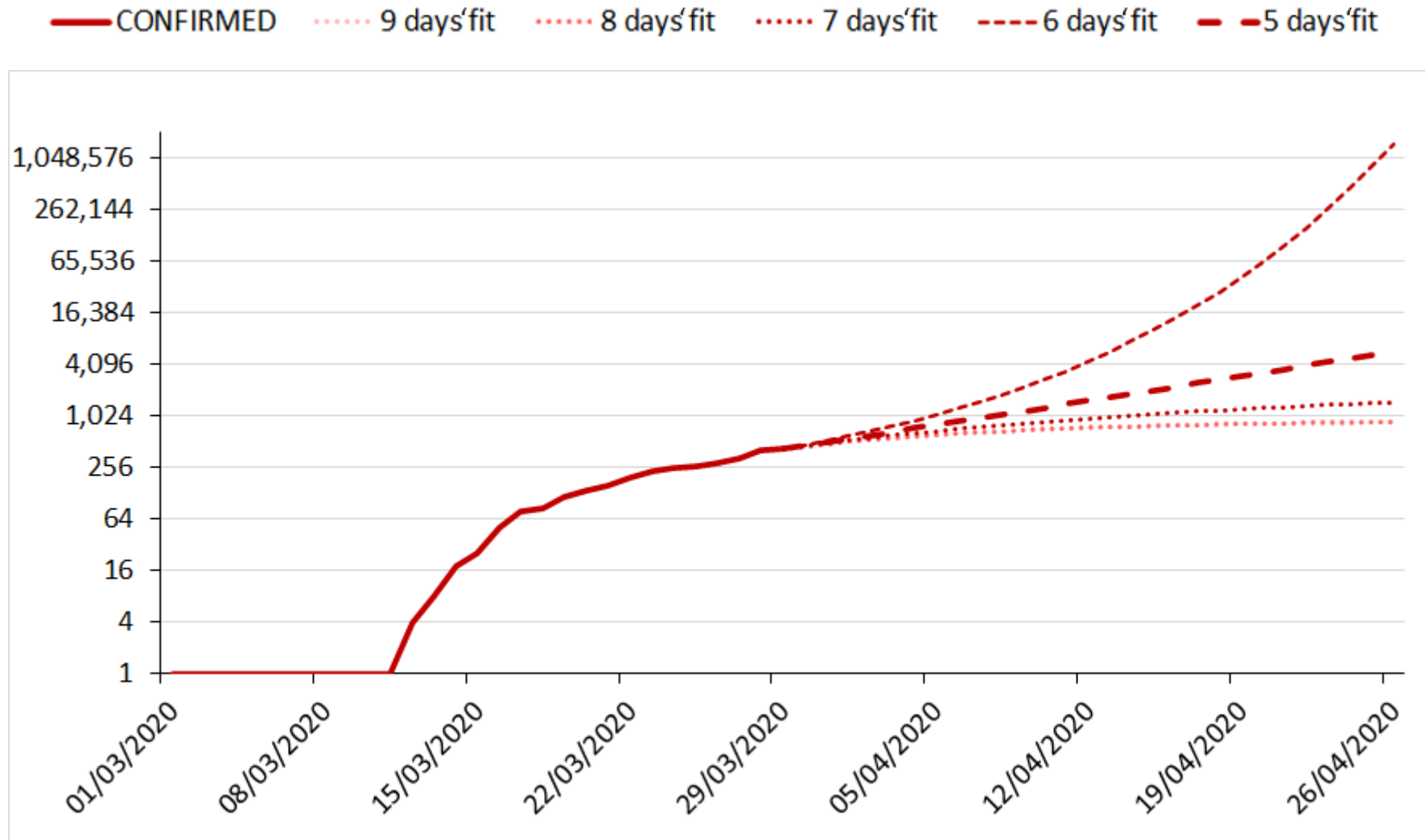
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Algeria



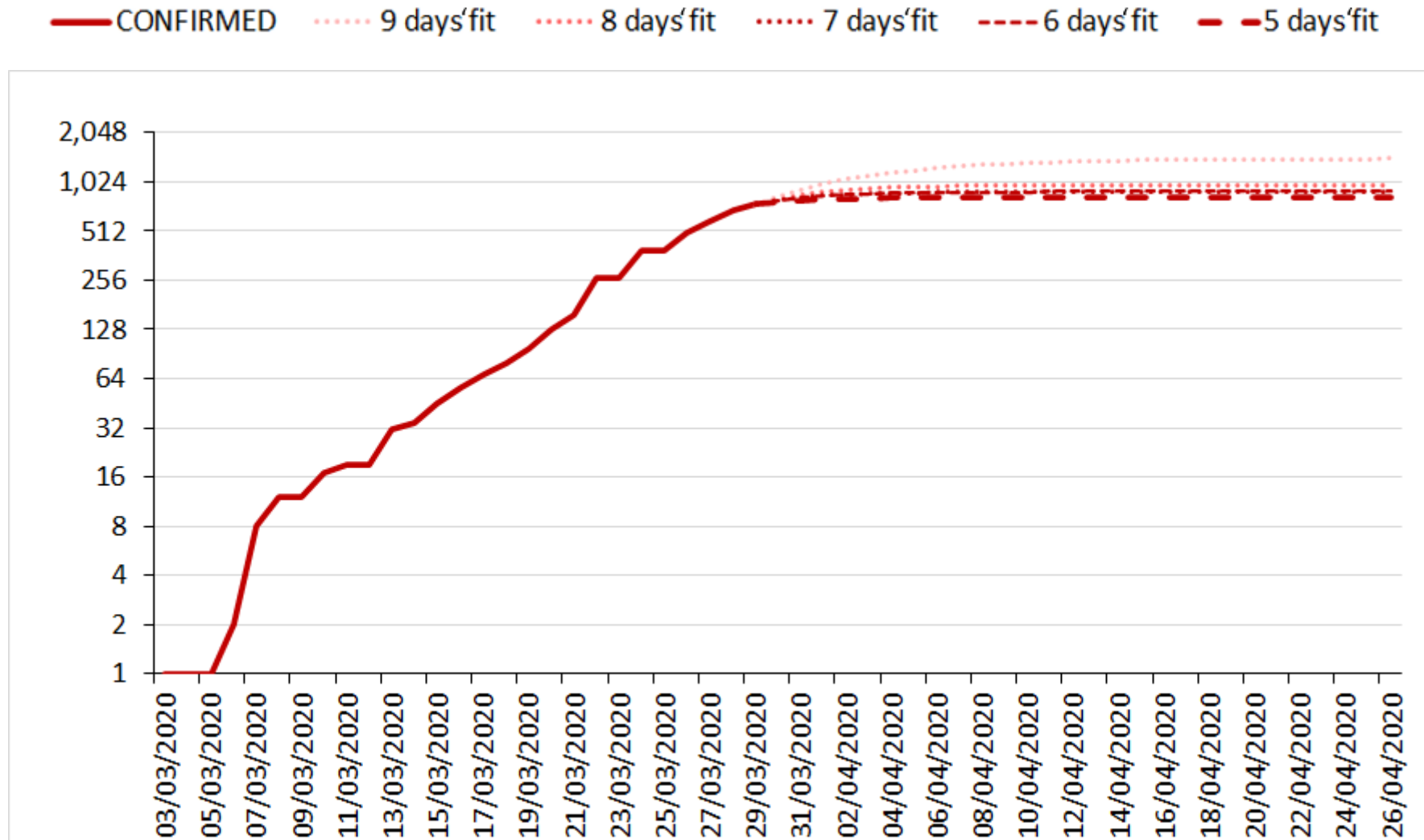
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Armenia



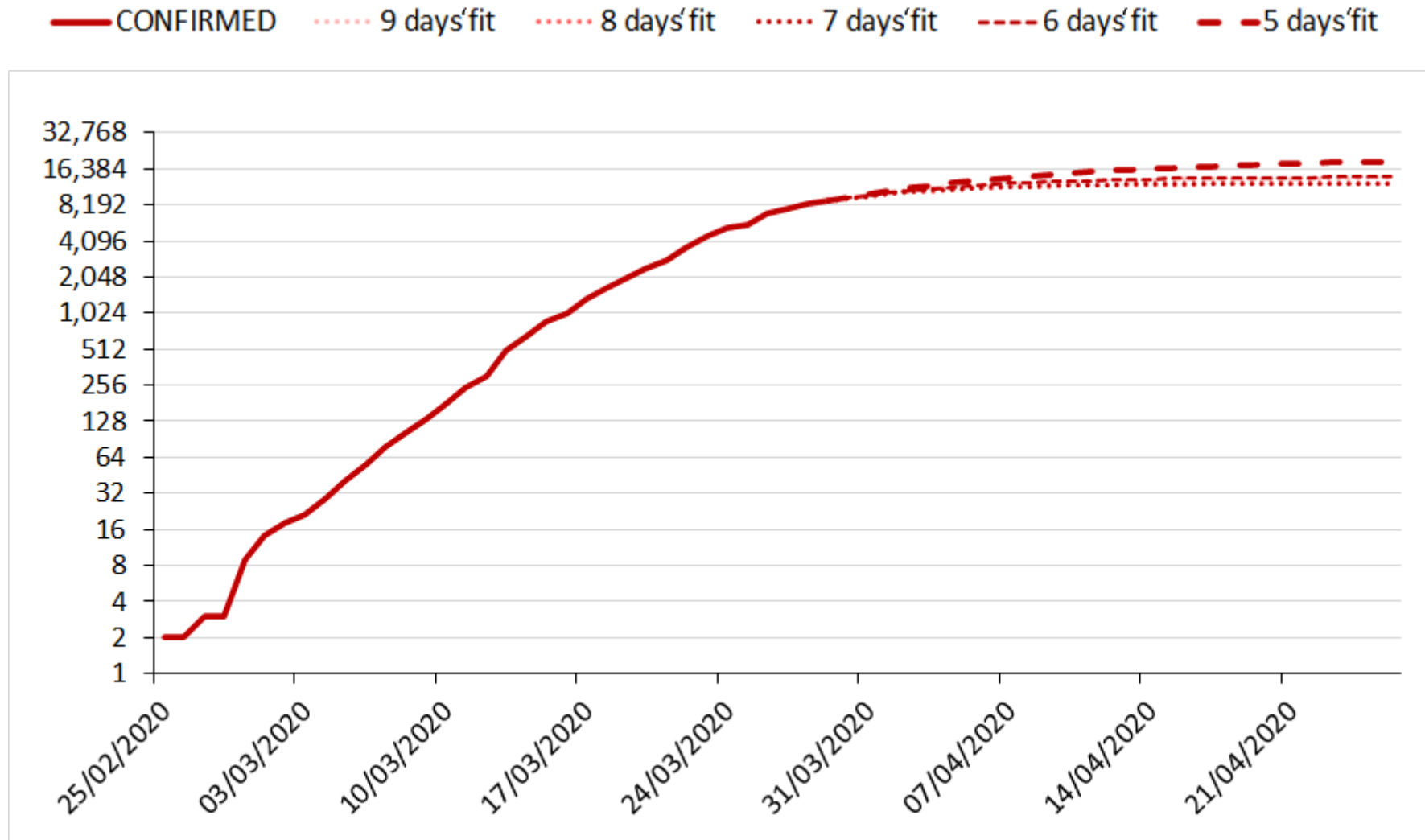
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Argentina



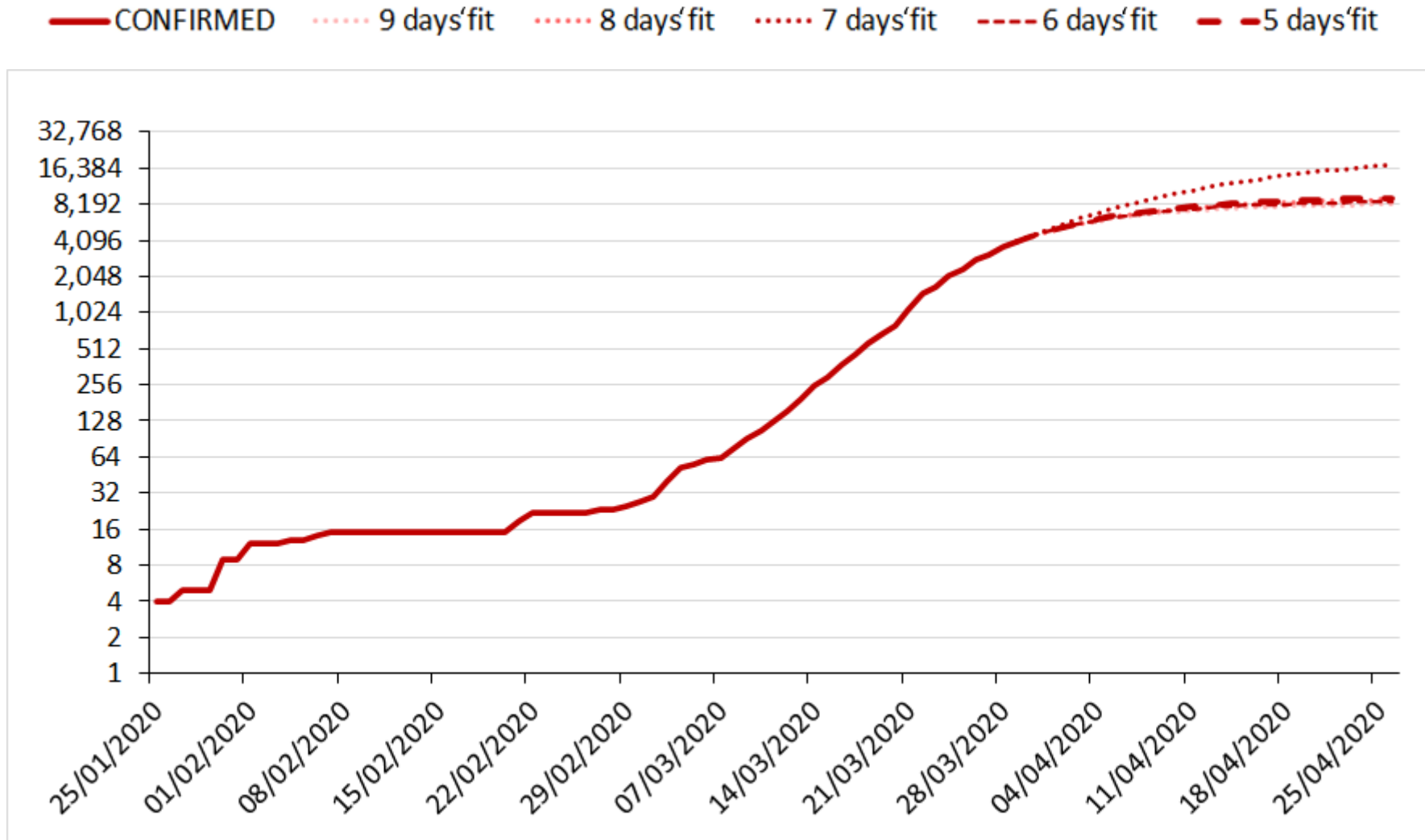
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Austria



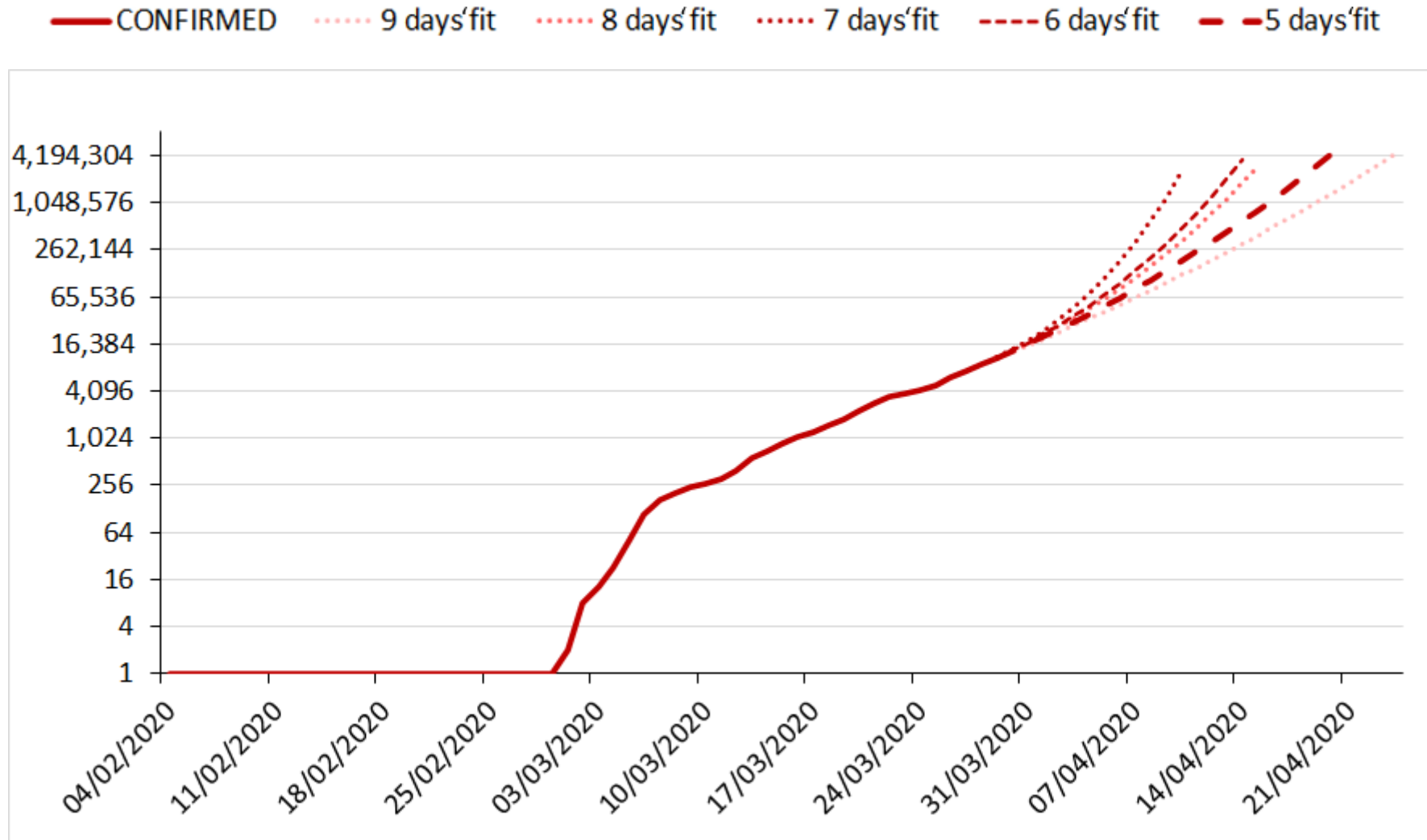
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Australia



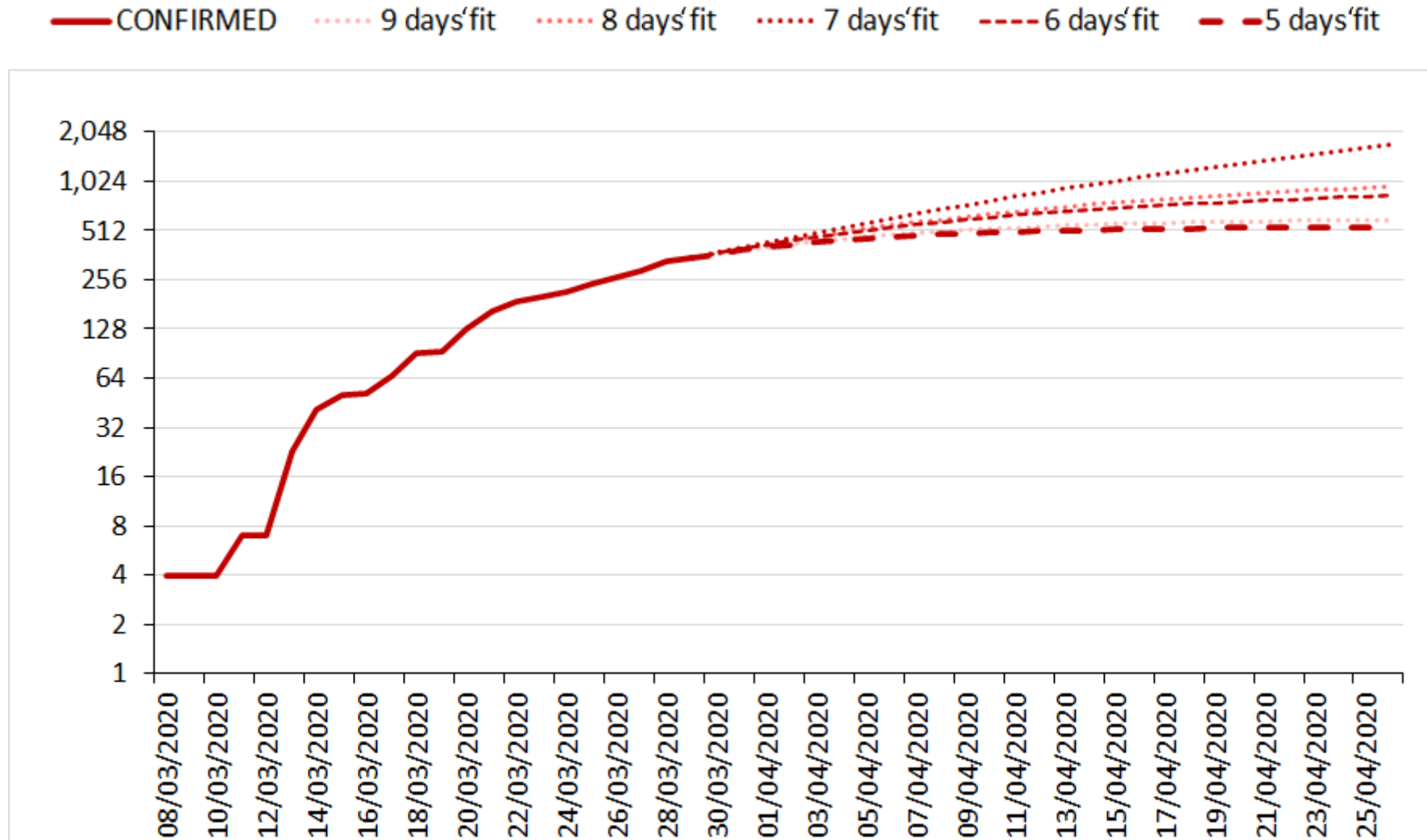
Data: The Johns Hopkins University, Politolog.com

Belgium



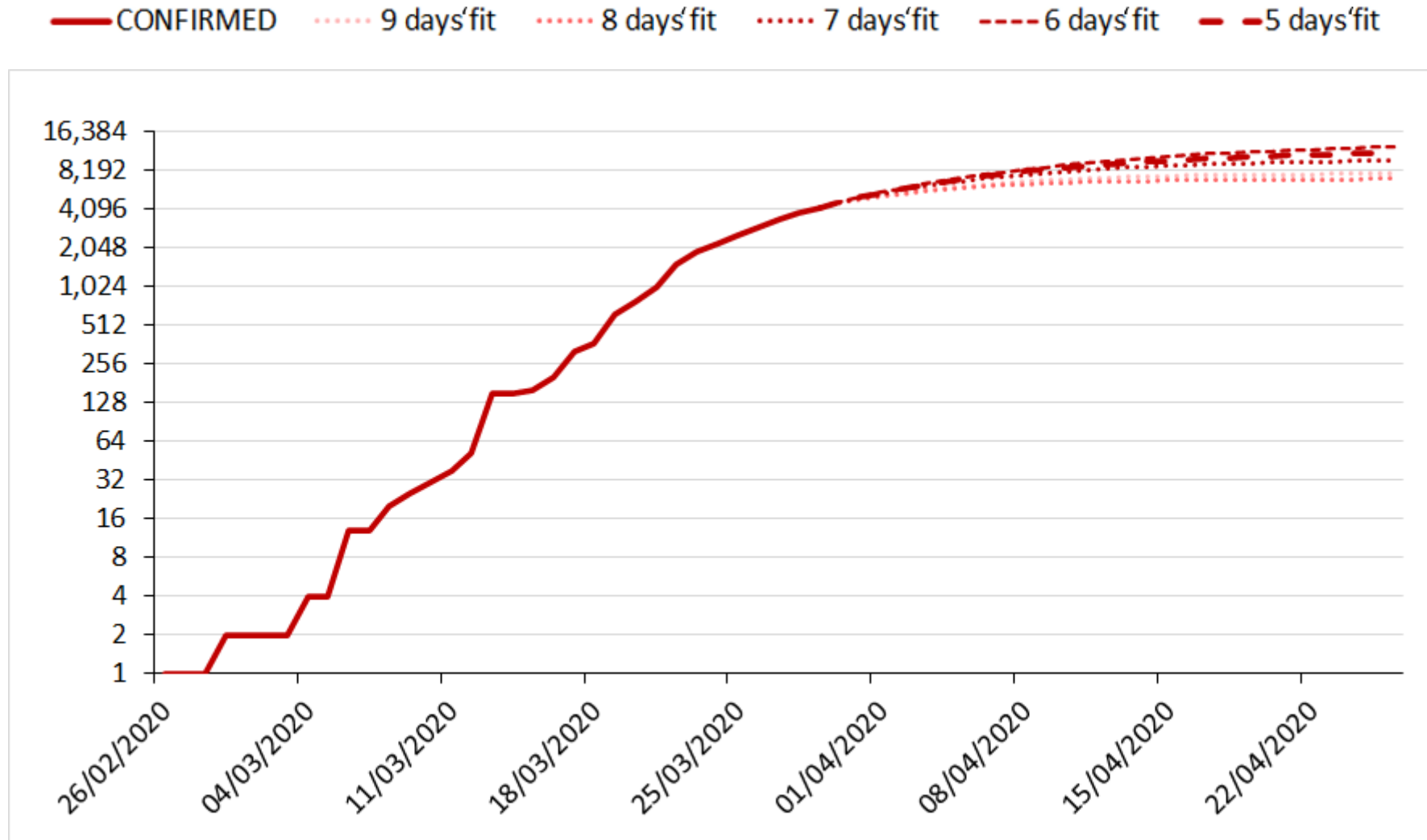
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Bulgaria



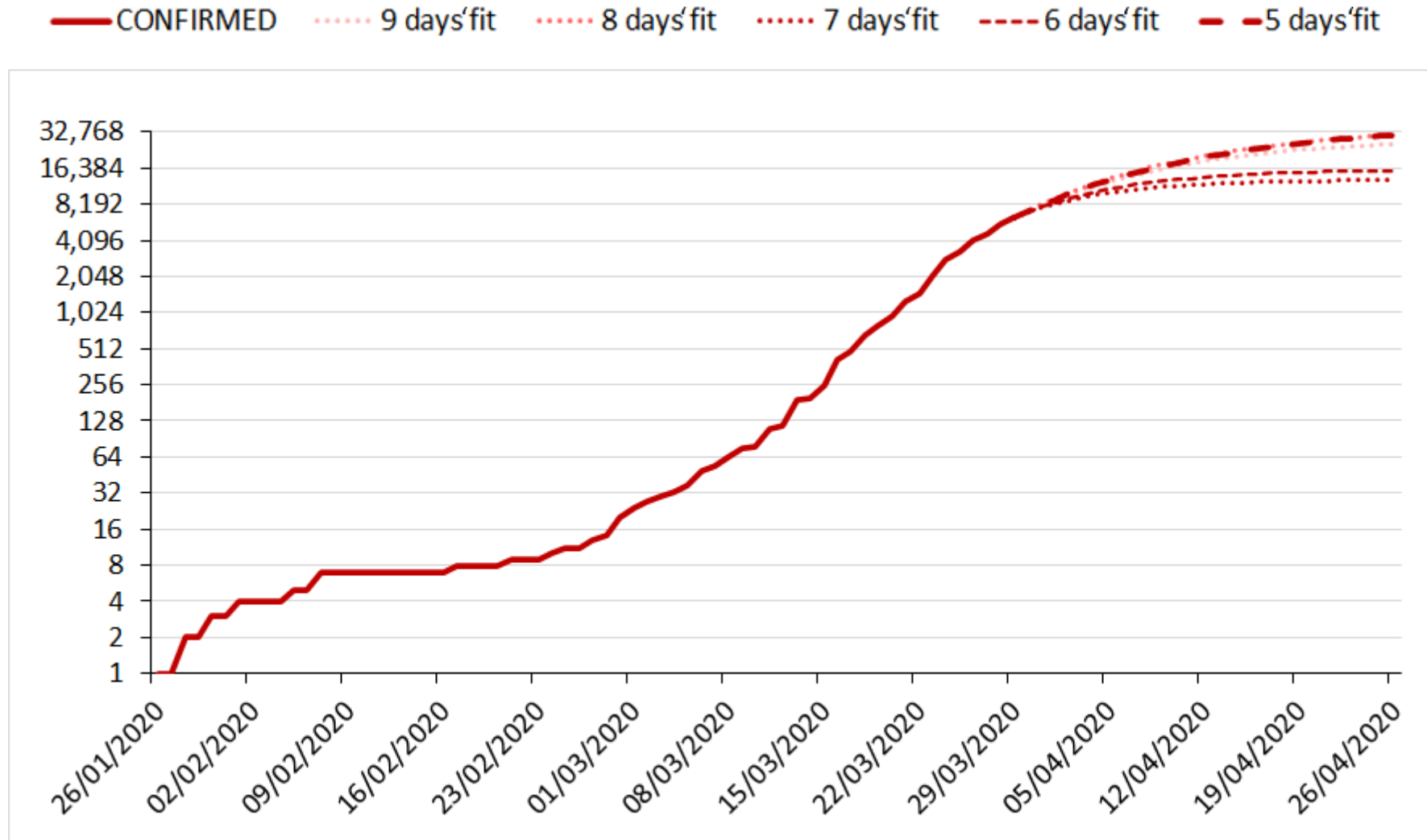
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Brazil



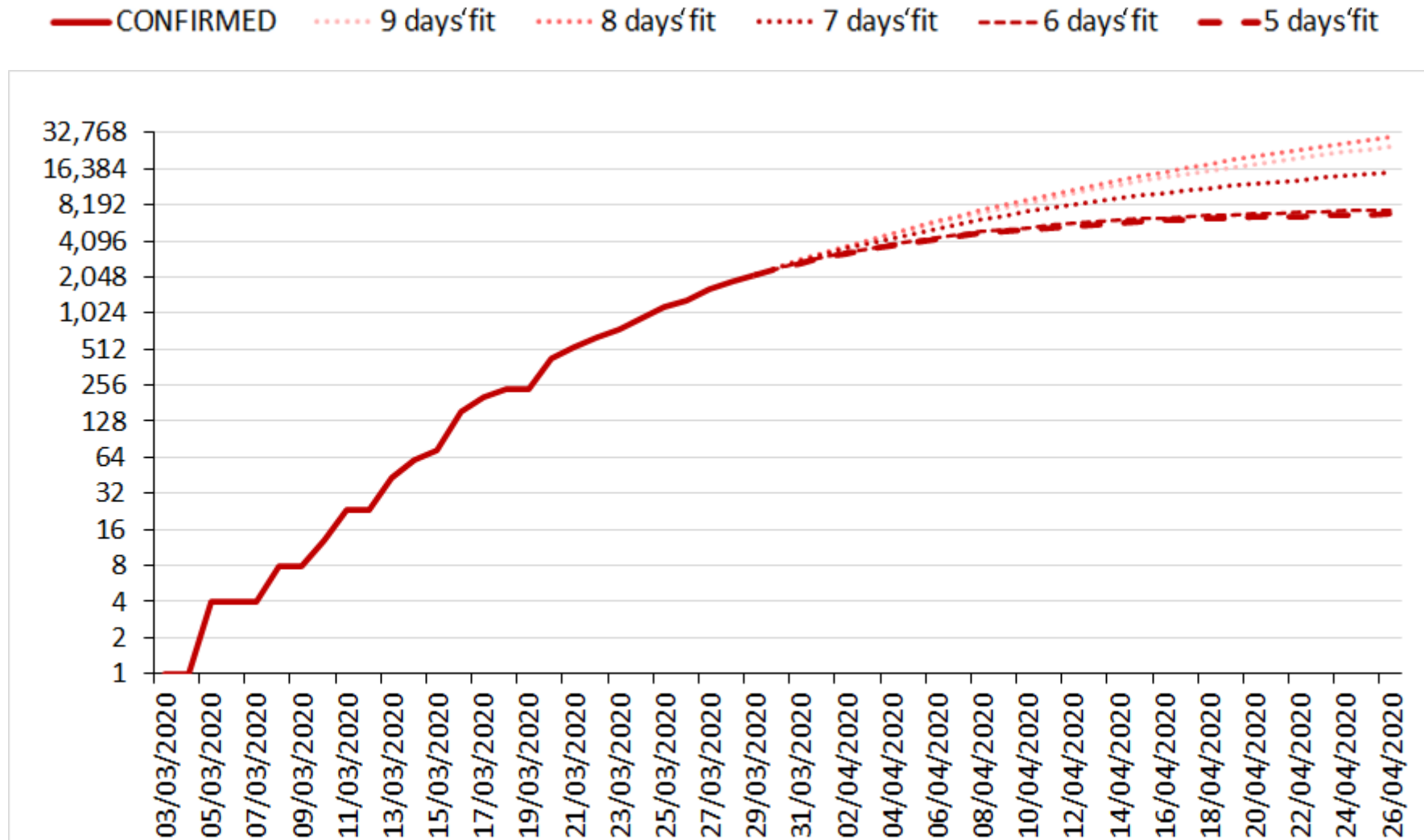
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Canada



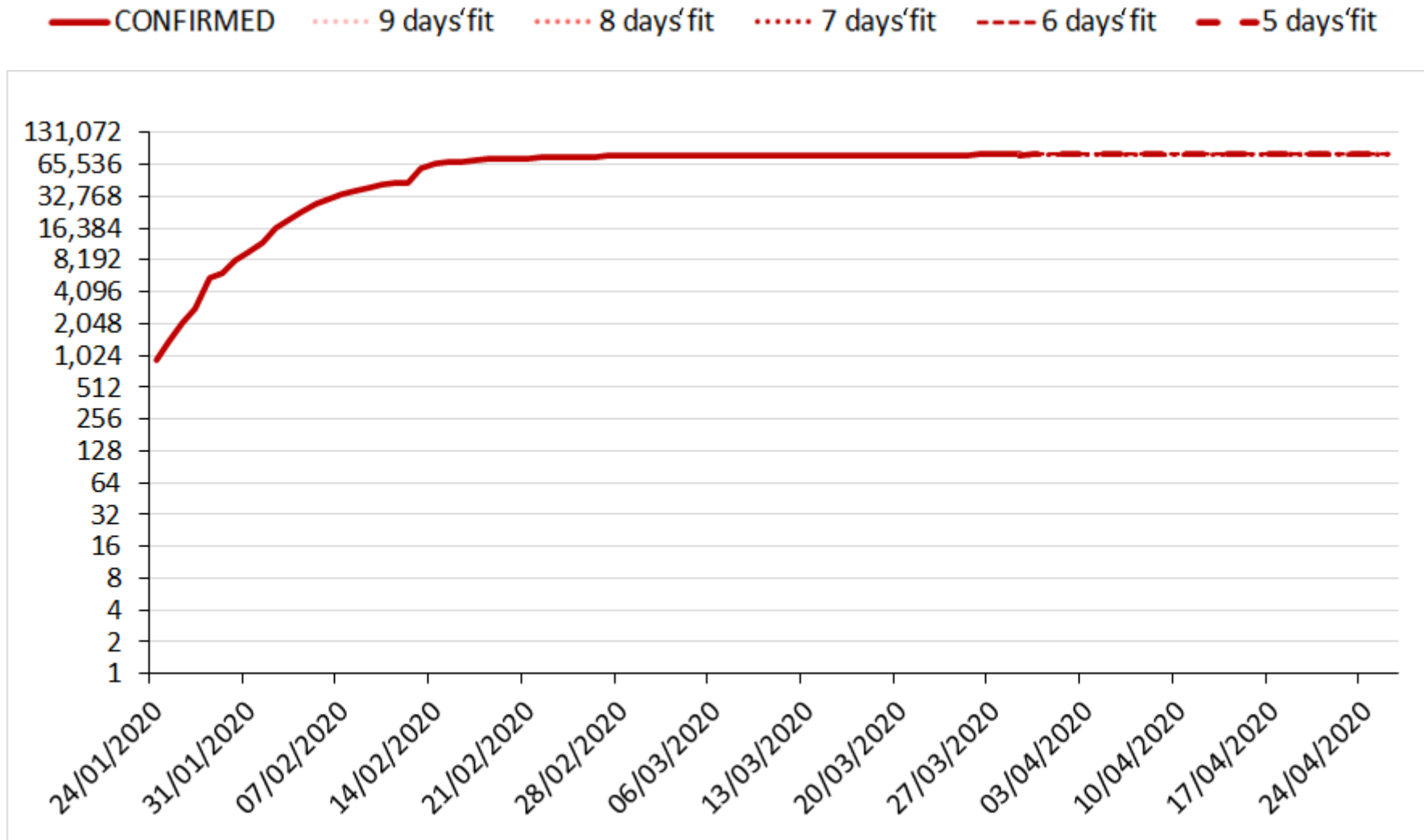
Data: The Johns Hopkins University, Politolog.com

Chile



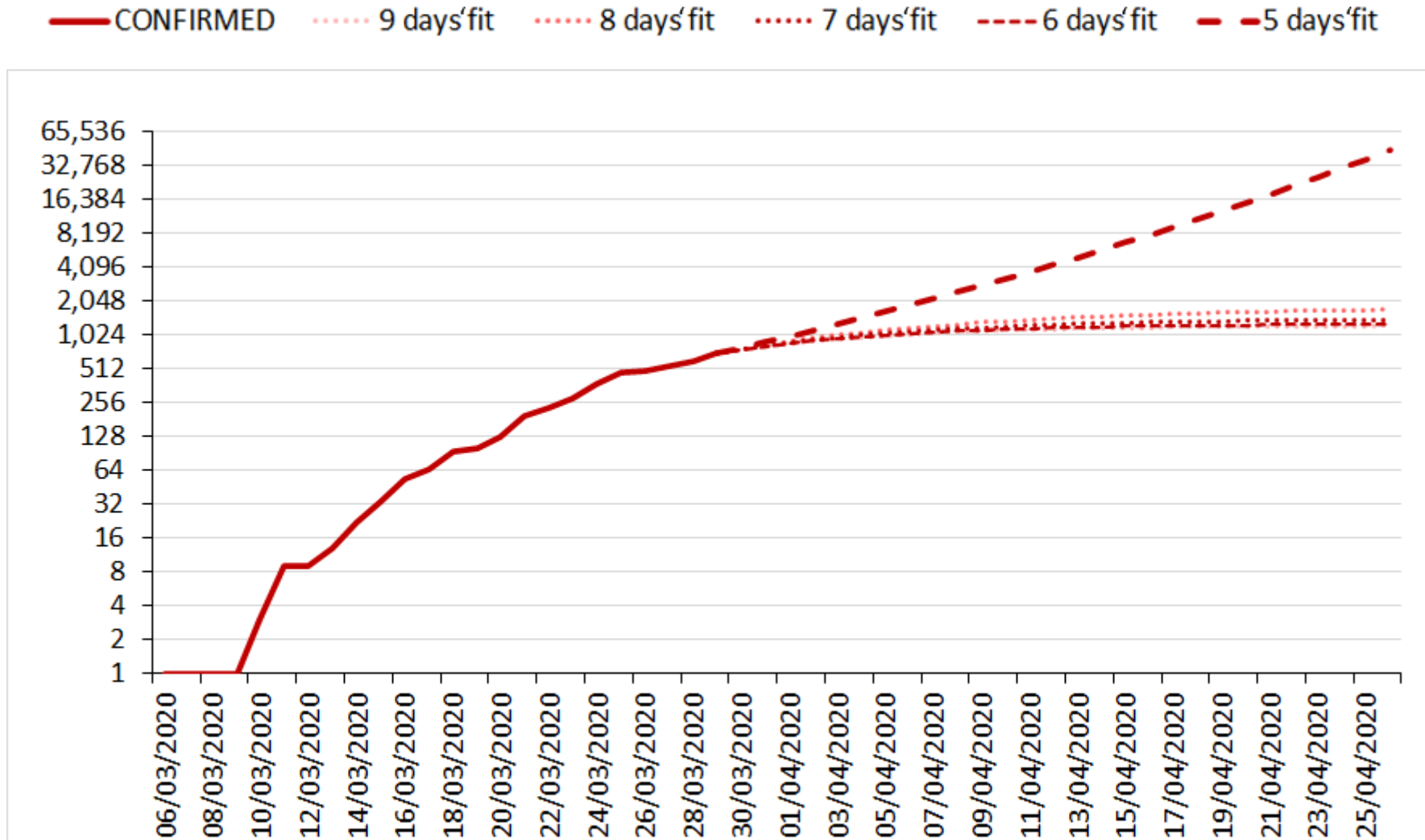
Data: The Johns Hopkins University, Politolog.com

China



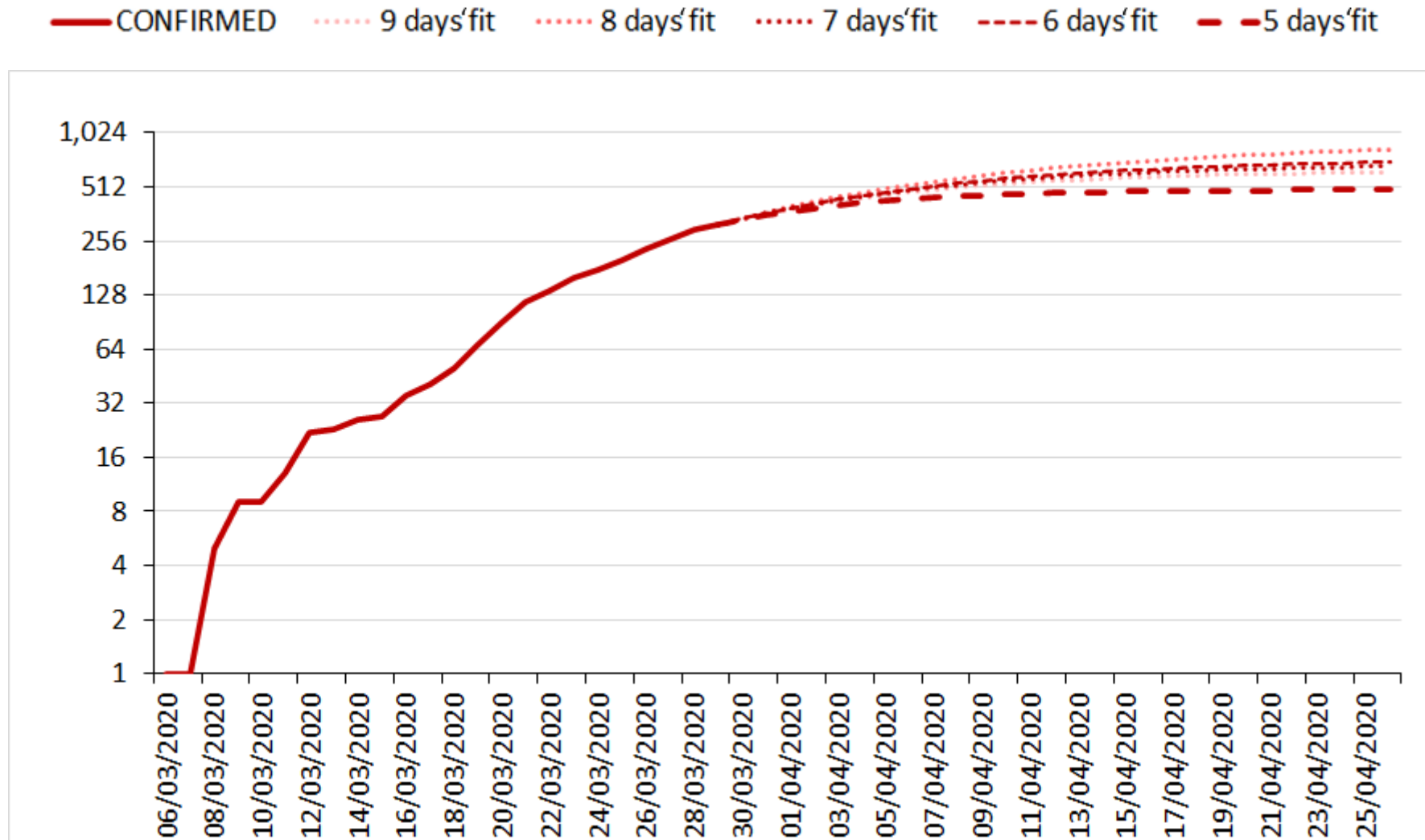
Data: The Johns Hopkins University, Politolog.com

Colombia



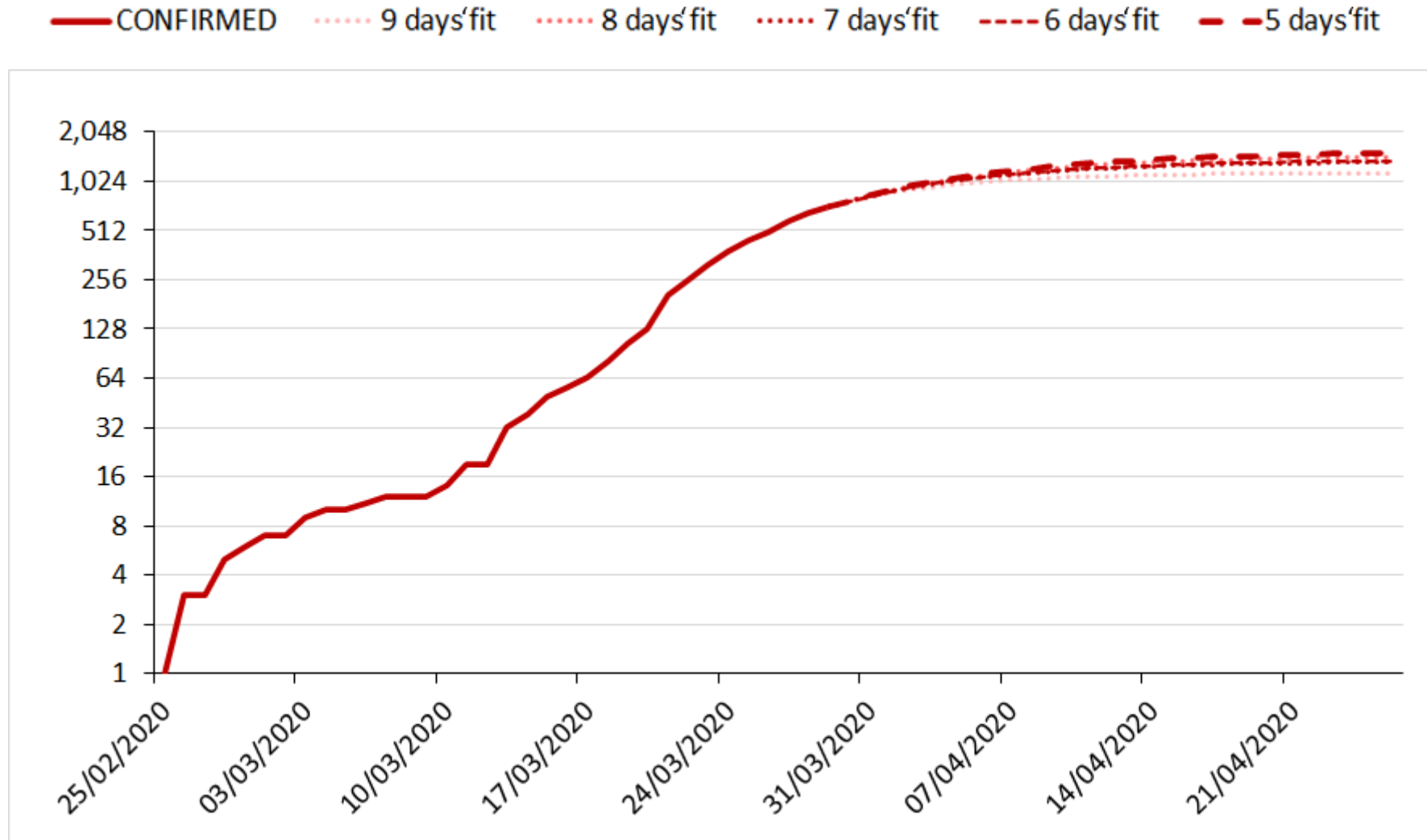
Data: The Johns Hopkins University, Politolog.com

Costa Rica



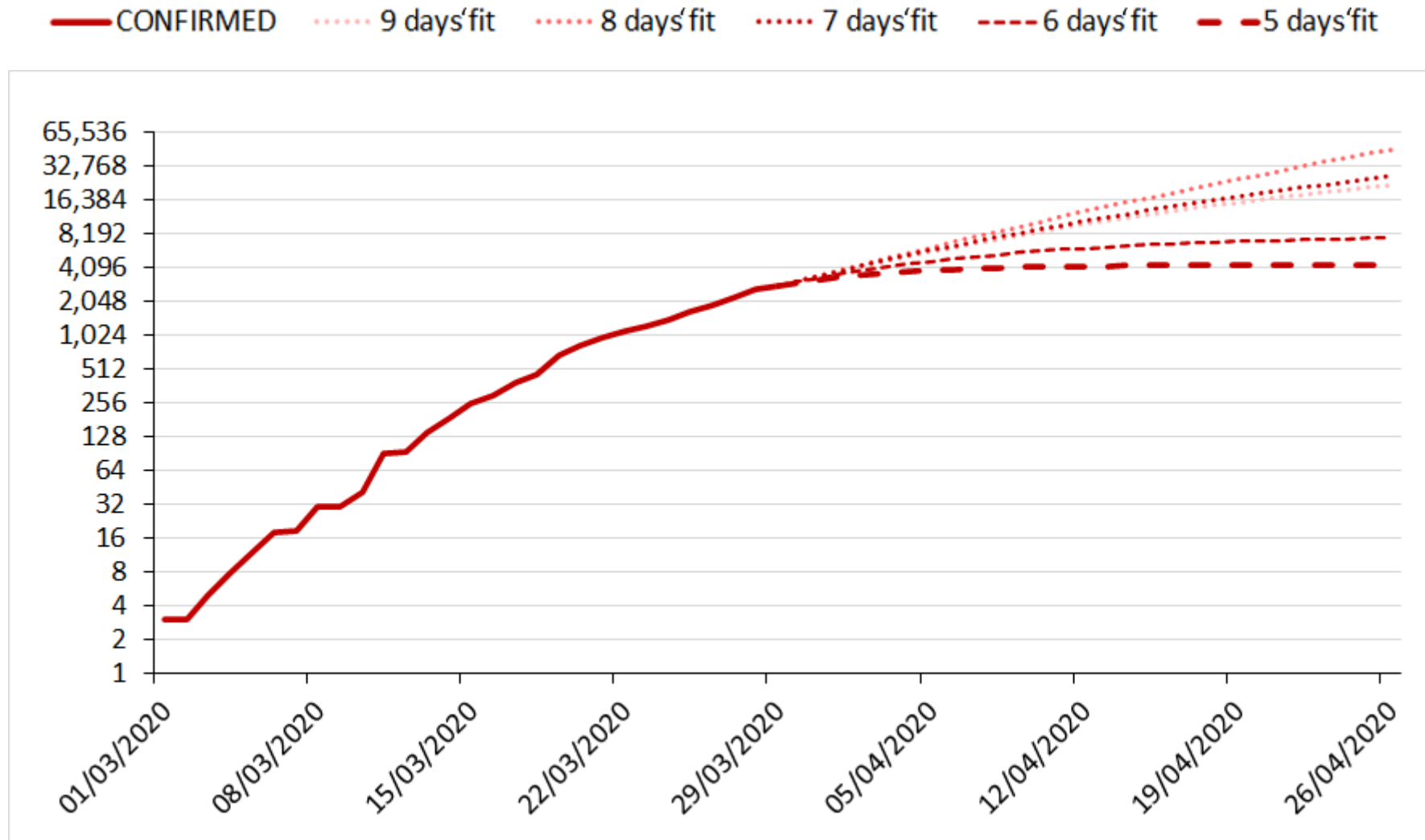
Data: The Johns Hopkins University, Politolog.com

Croatia



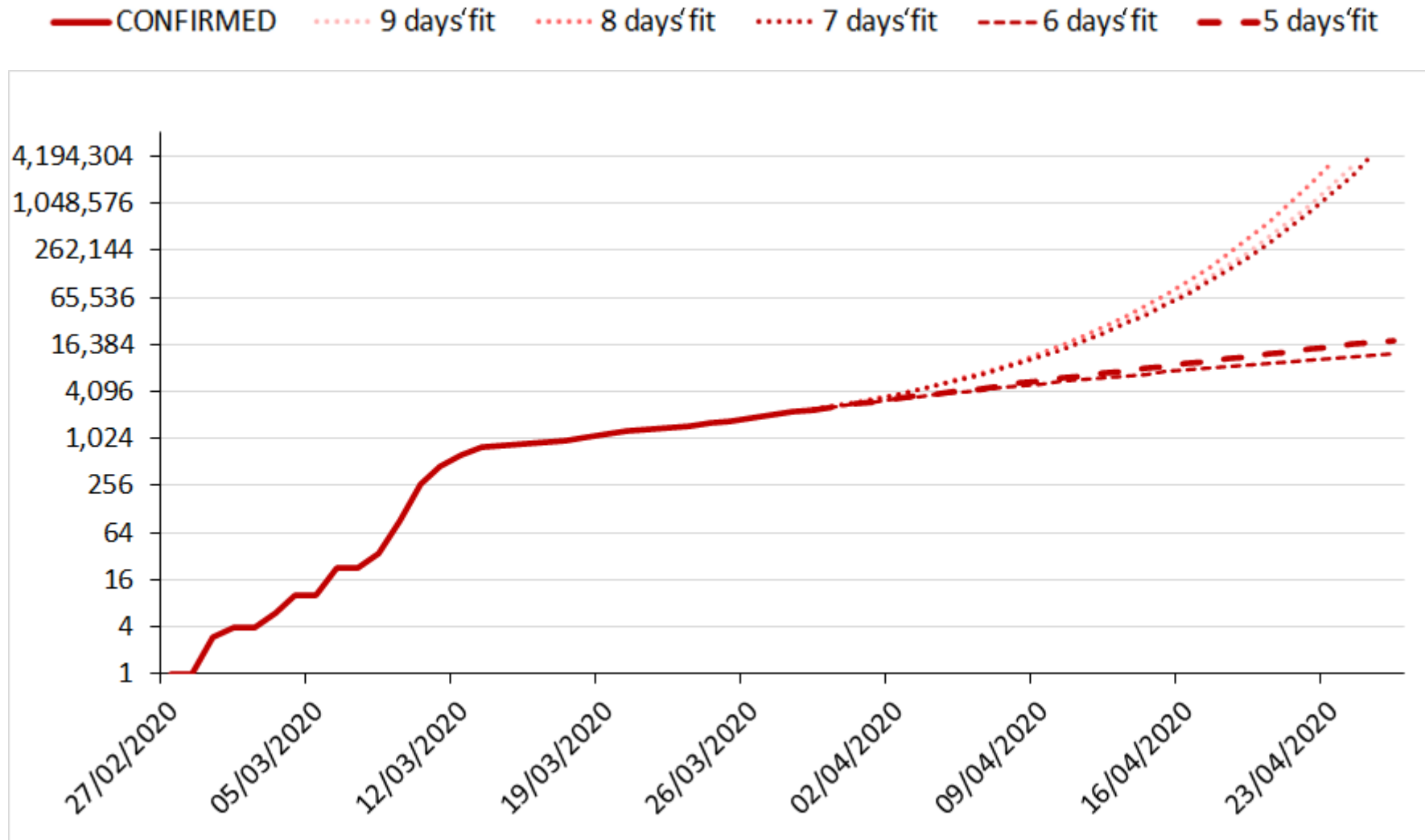
Data: The Johns Hopkins University, Politolog.com

Czech Republic



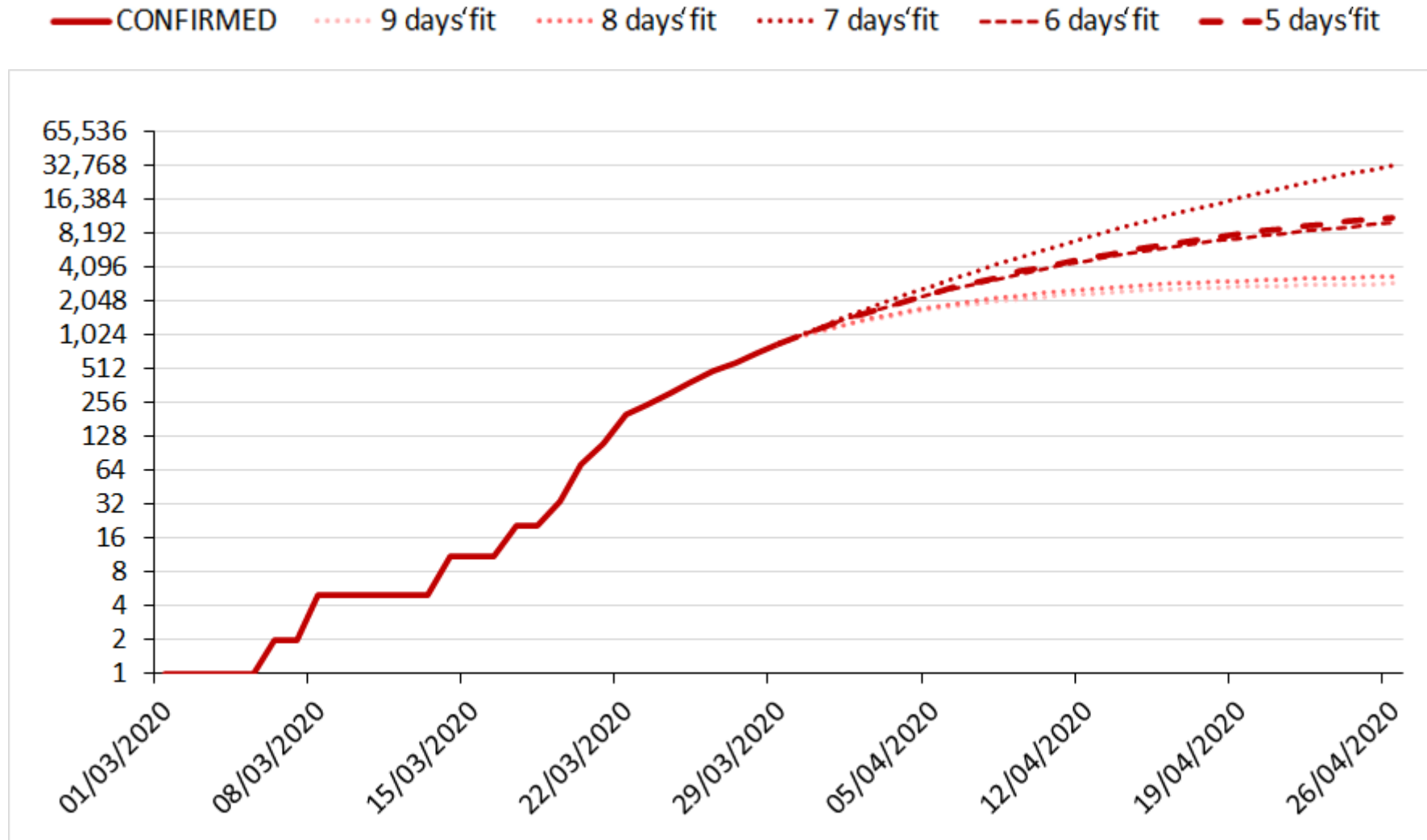
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Denmark



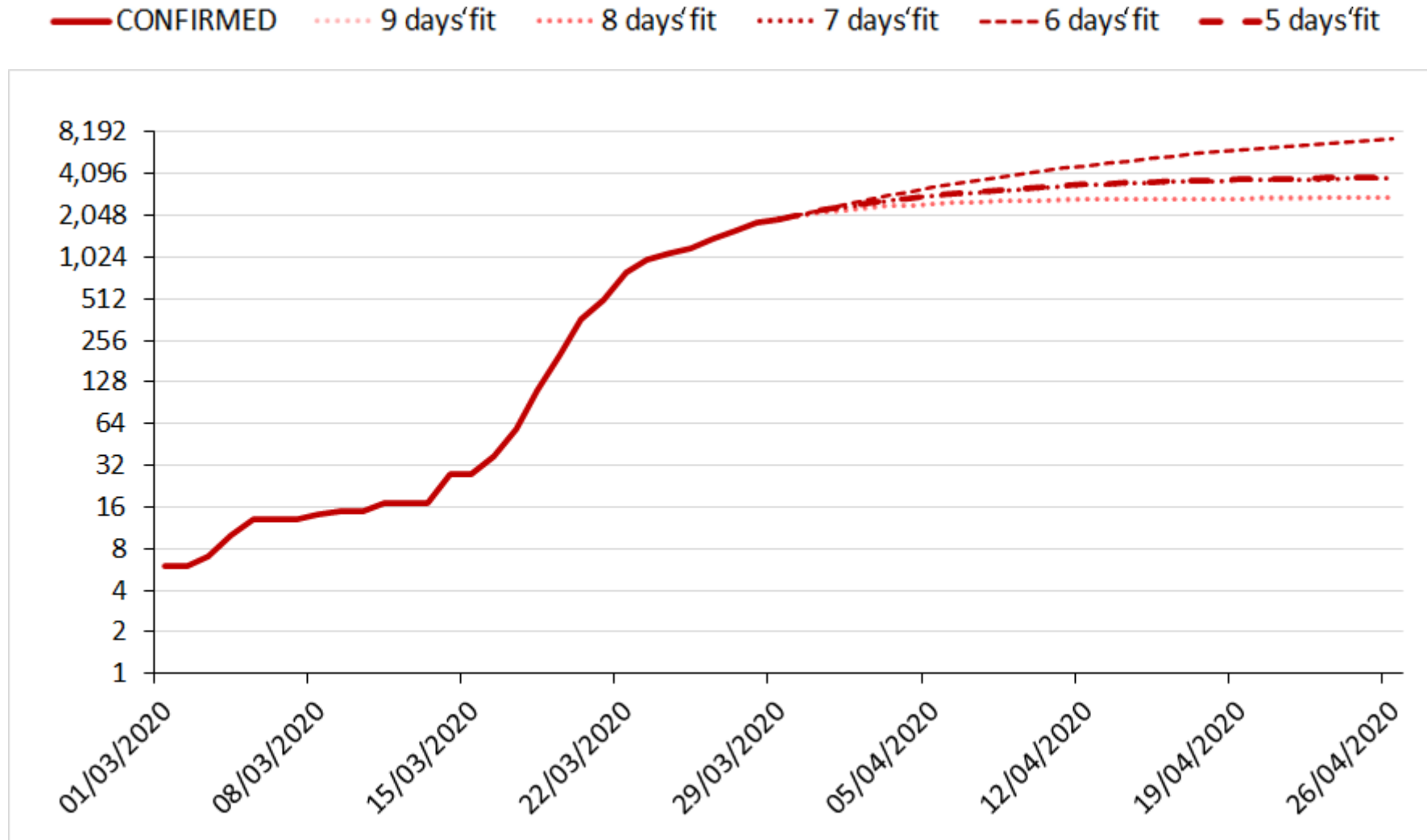
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Dominican Republic



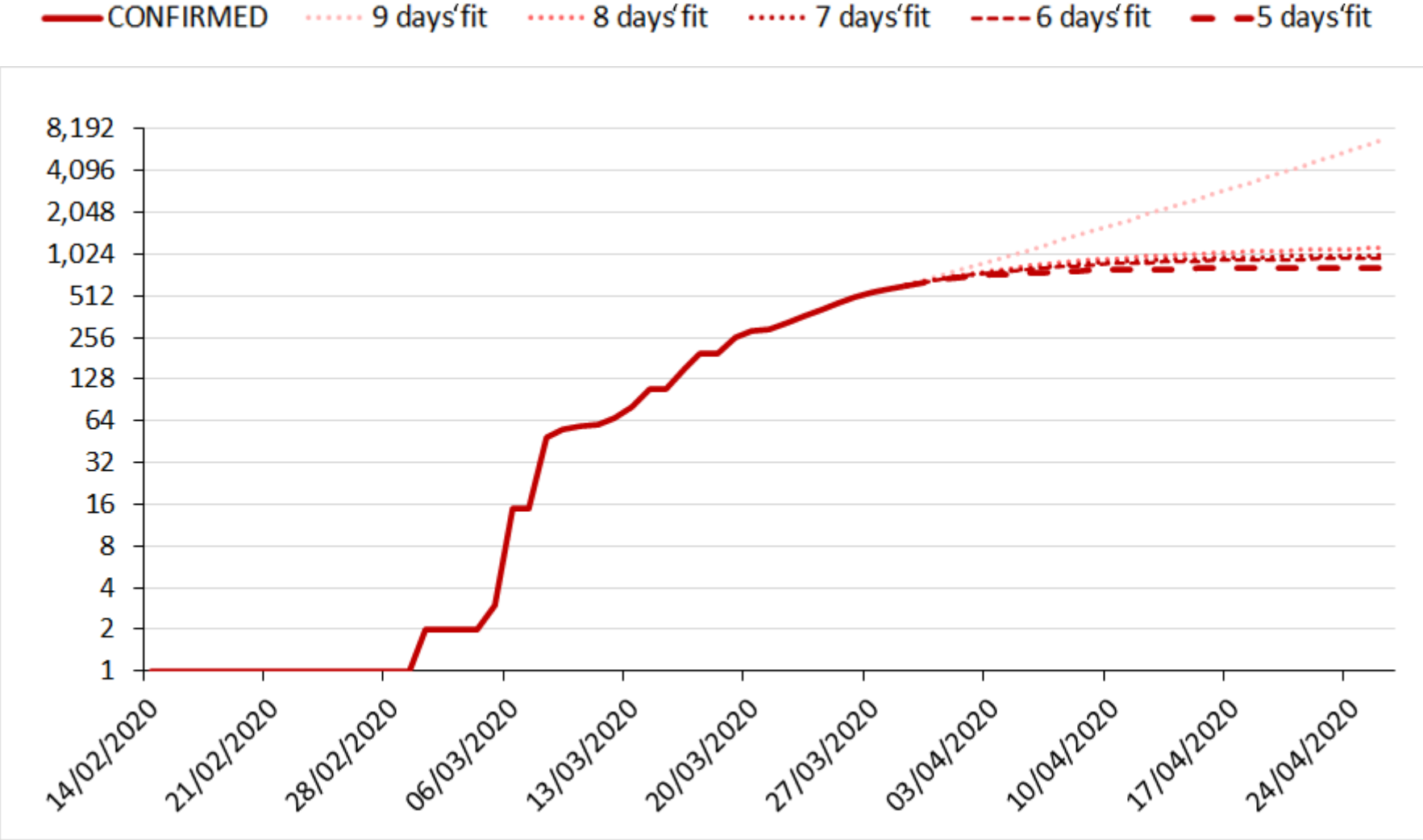
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Ecuador



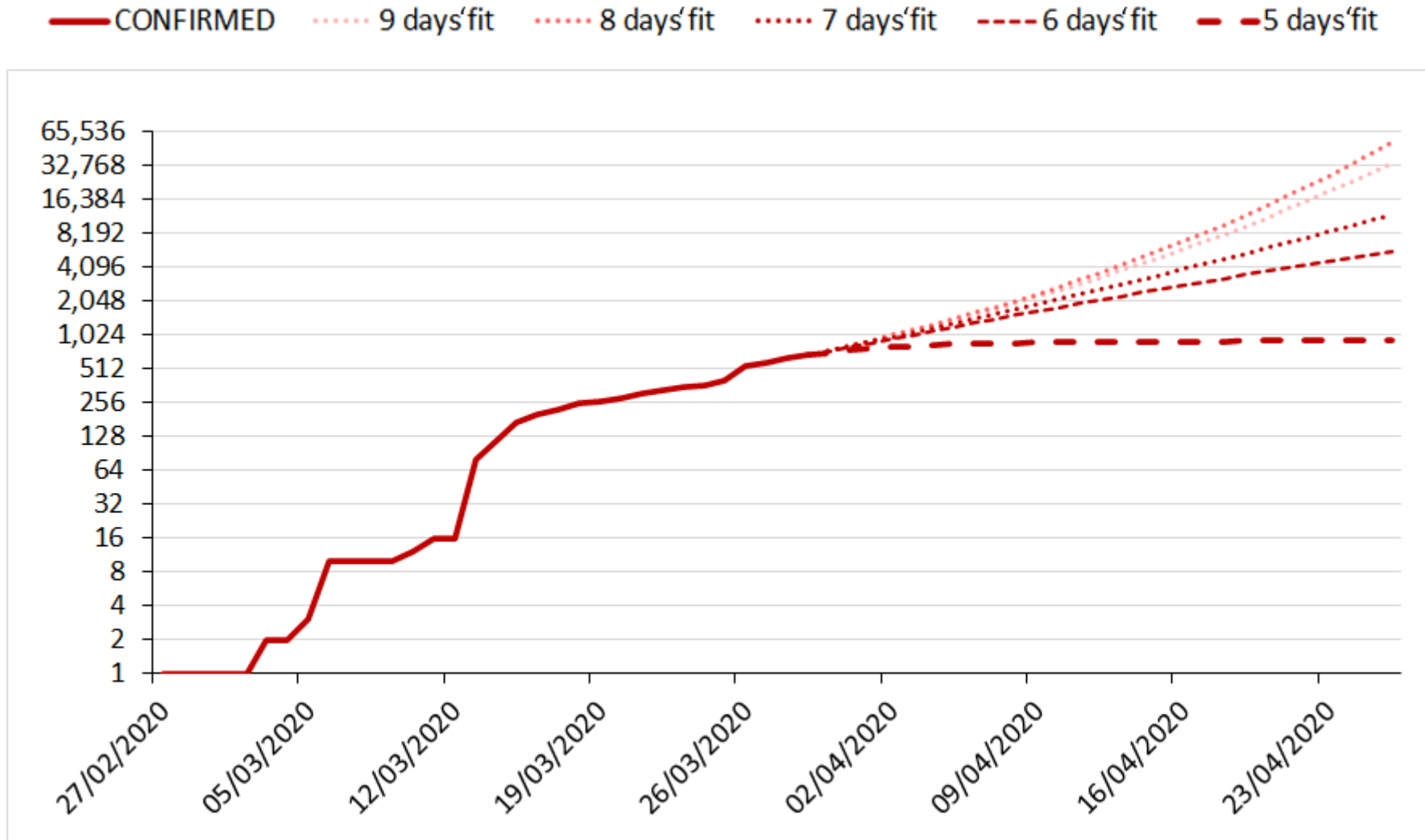
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Egypt



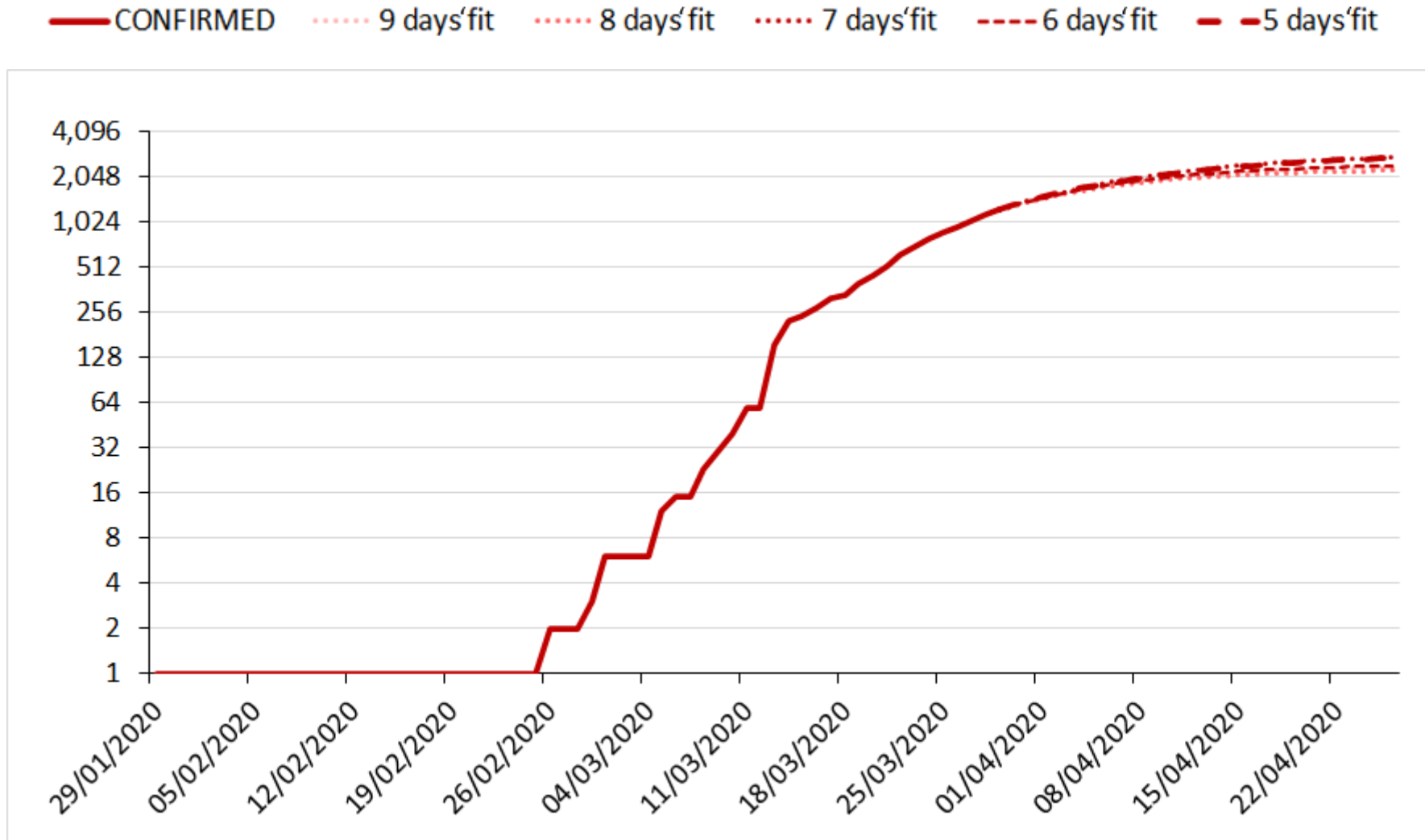
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Estonia



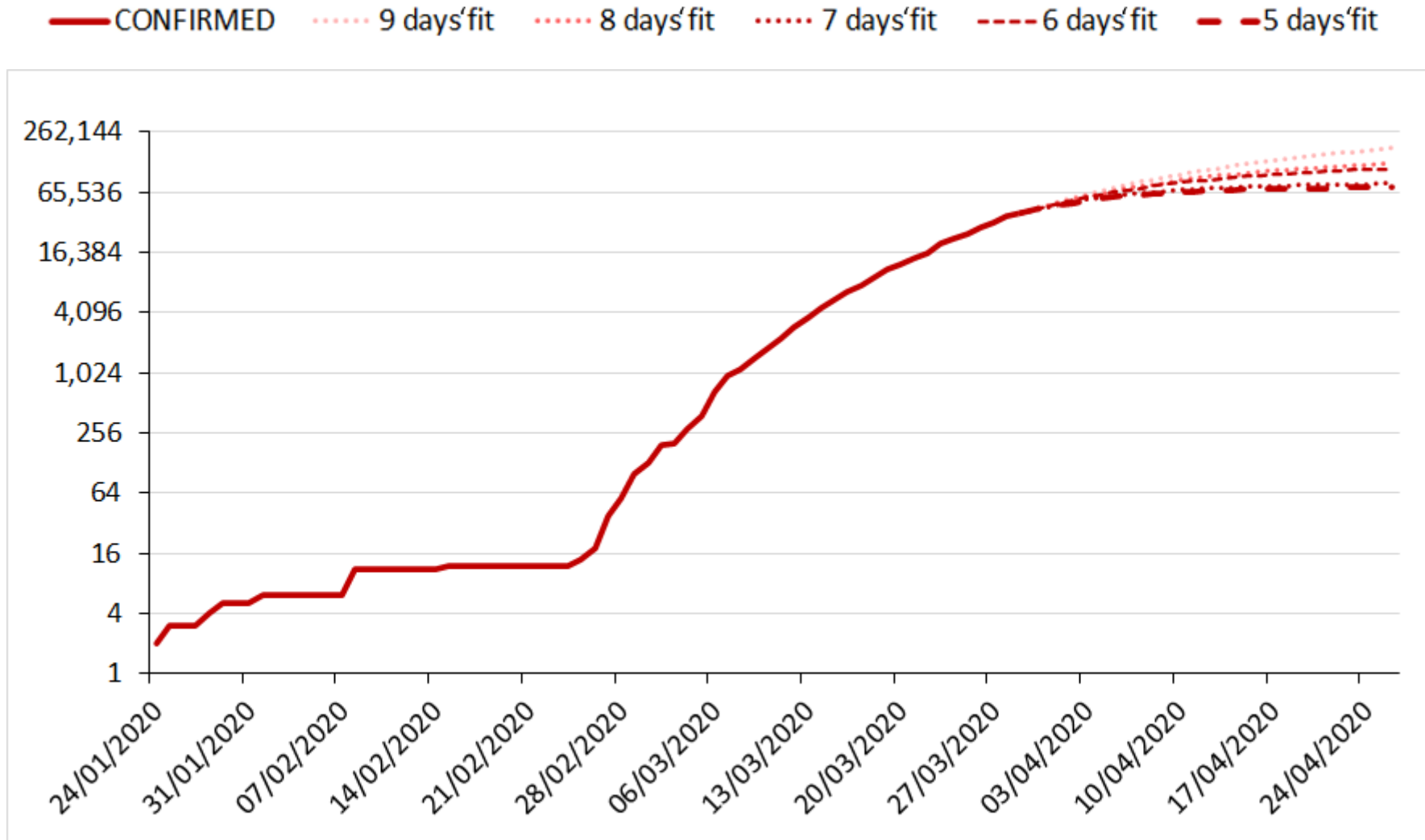
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Finland



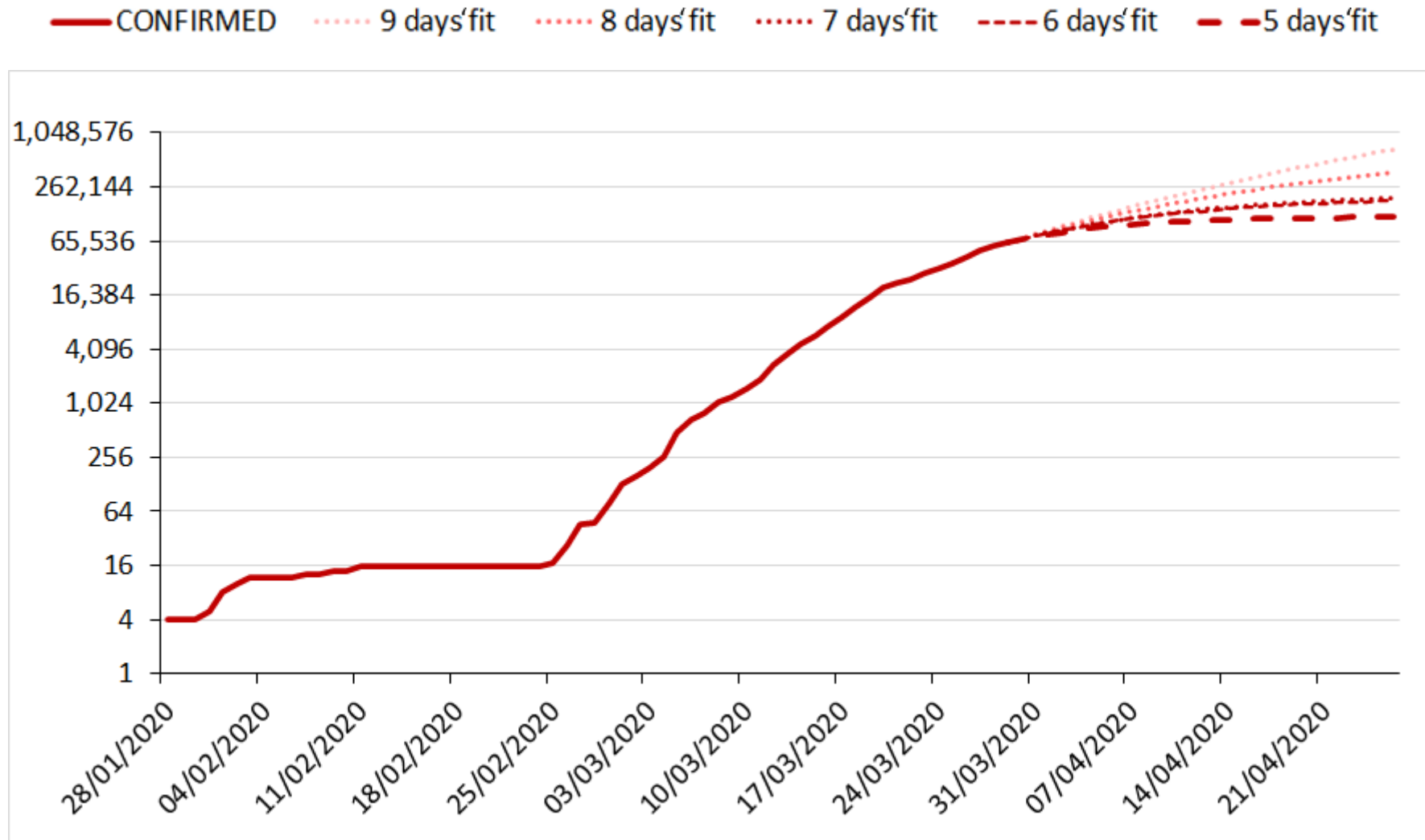
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France



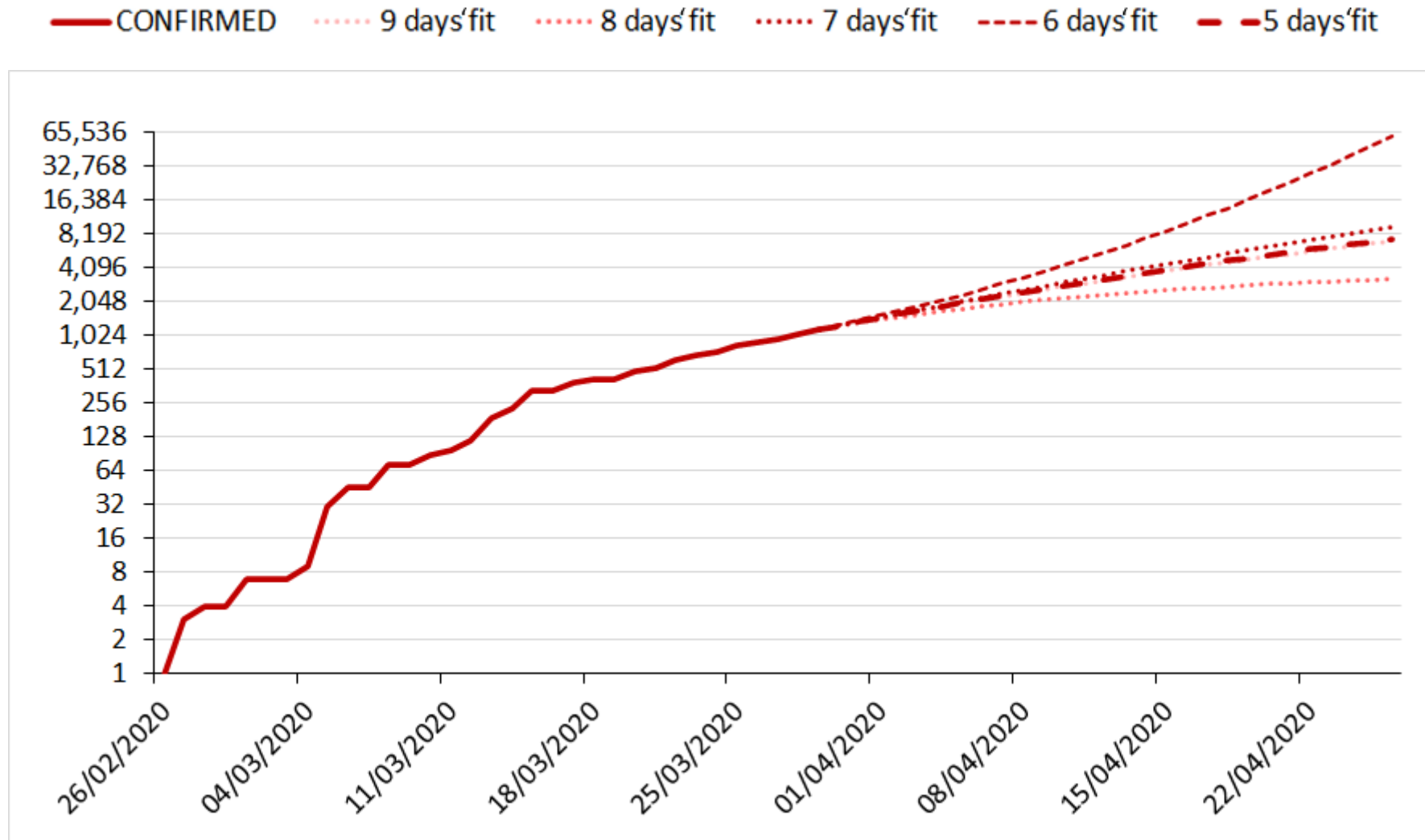
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Germany



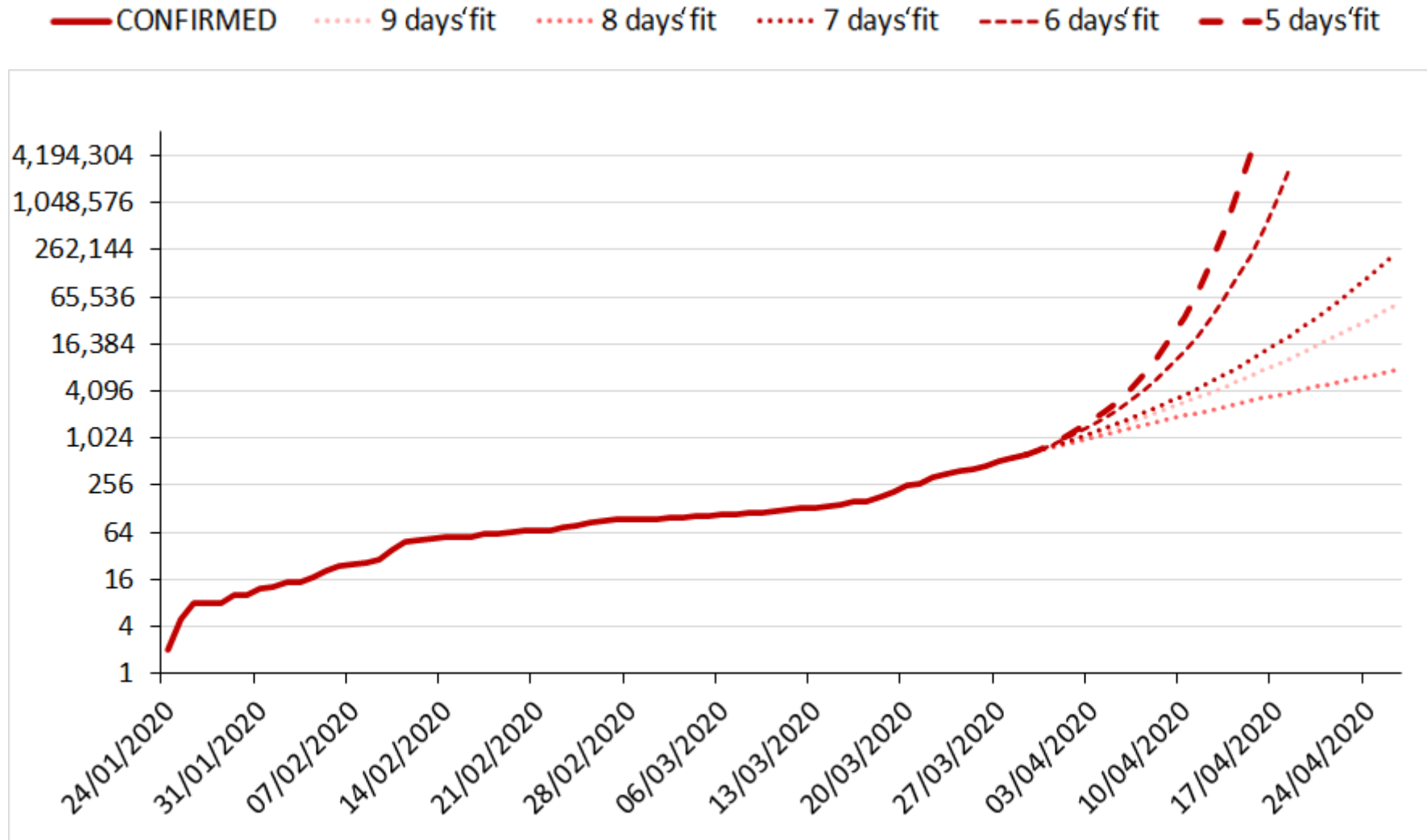
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Greece



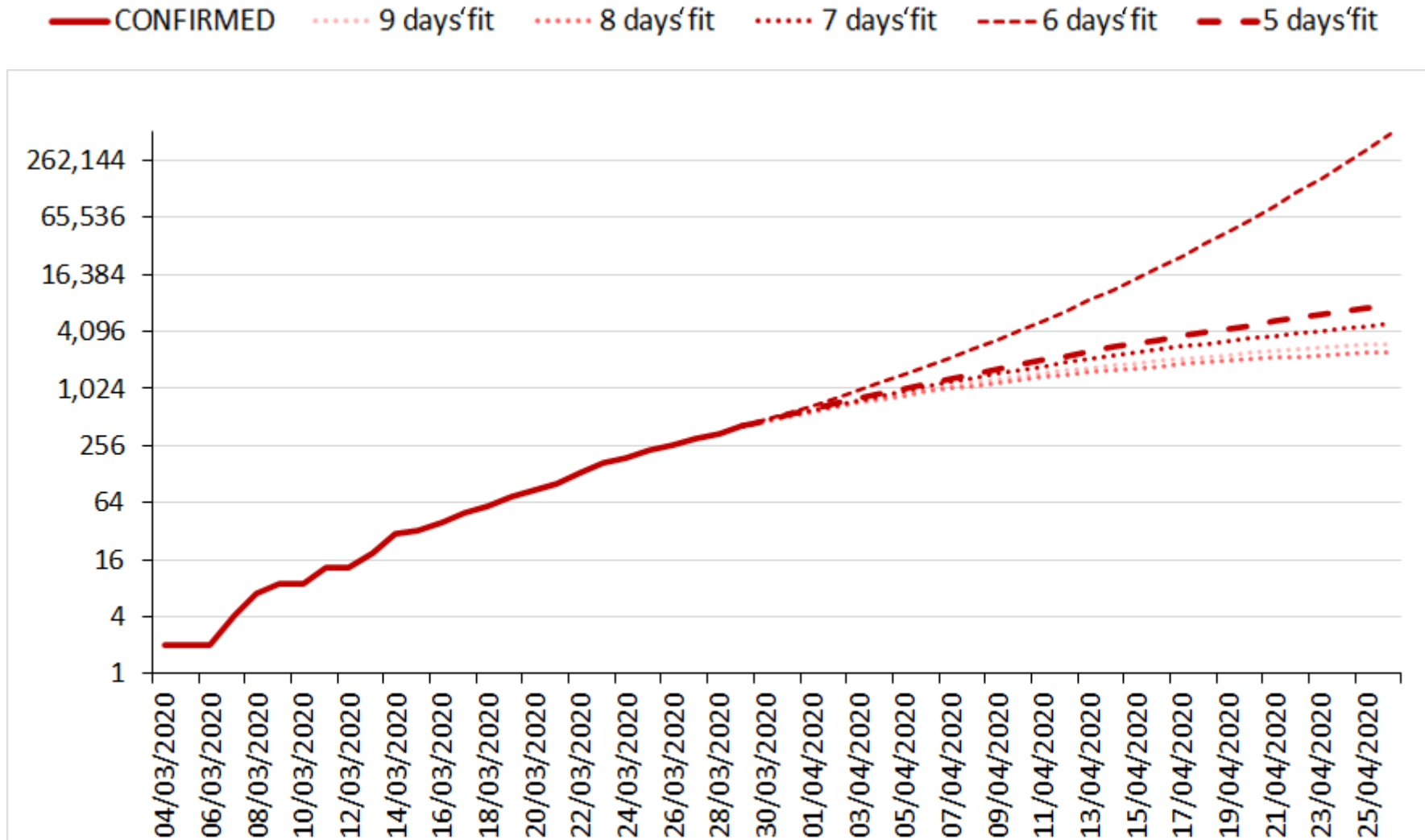
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Hong Kong



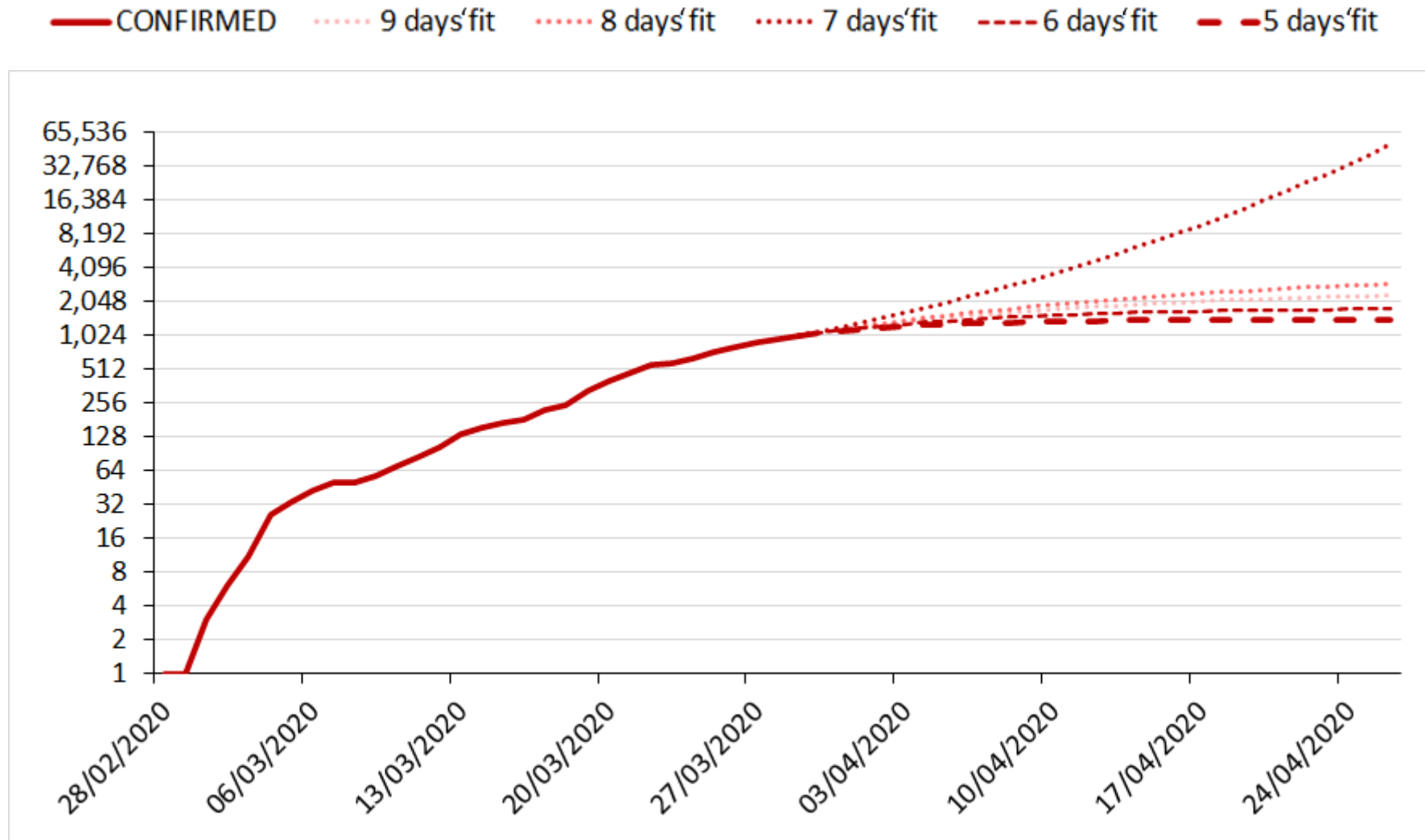
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Hungary



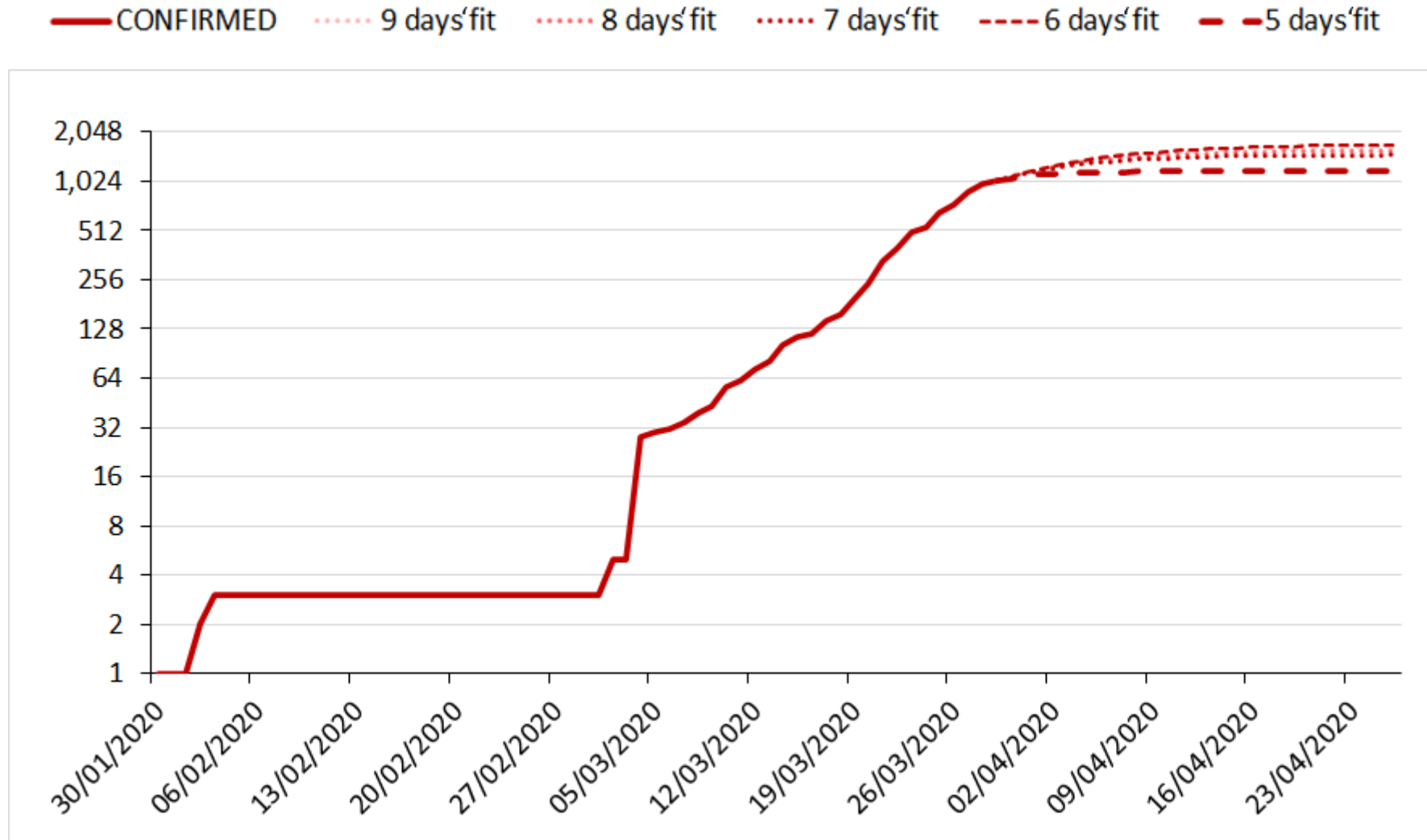
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Iceland



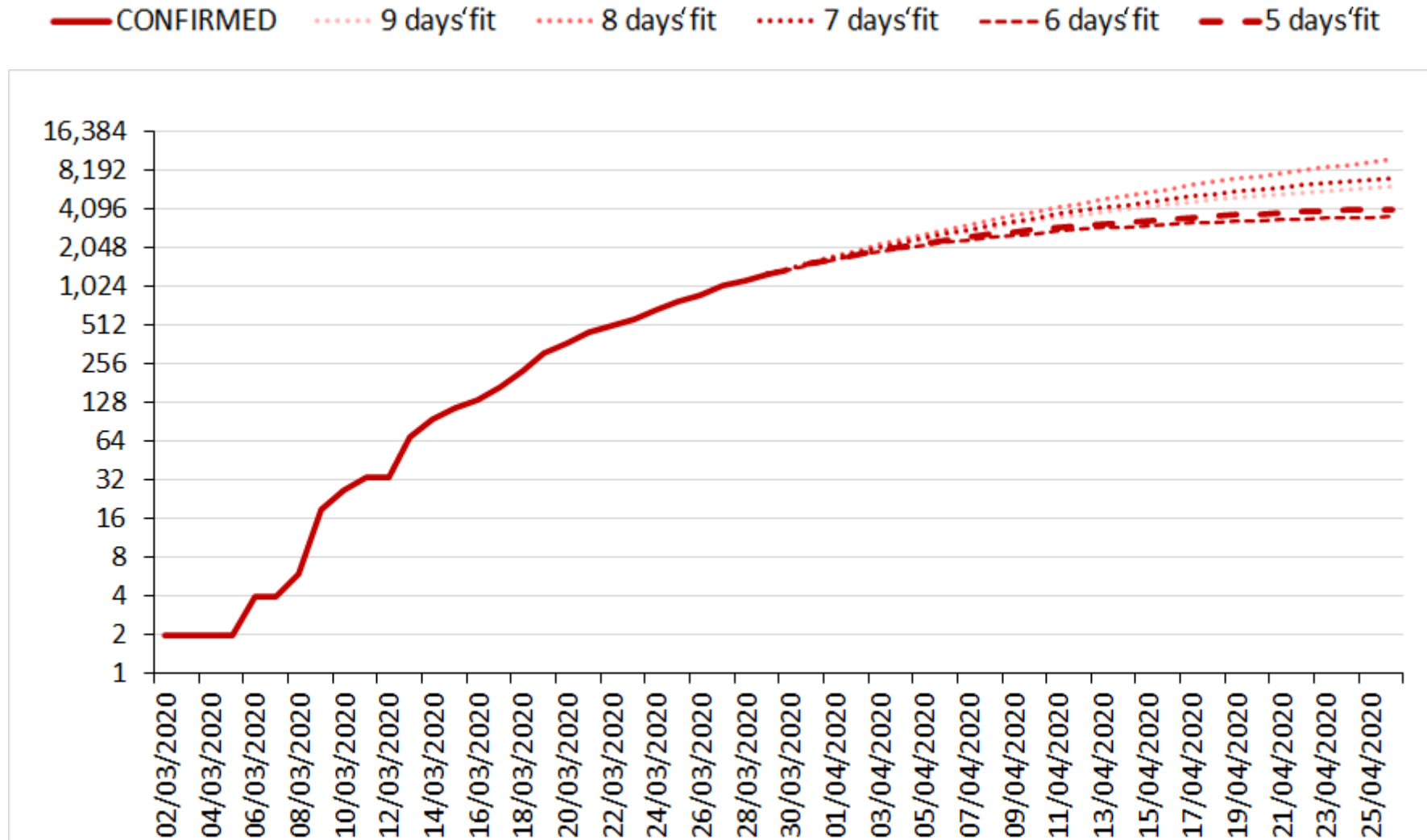
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India



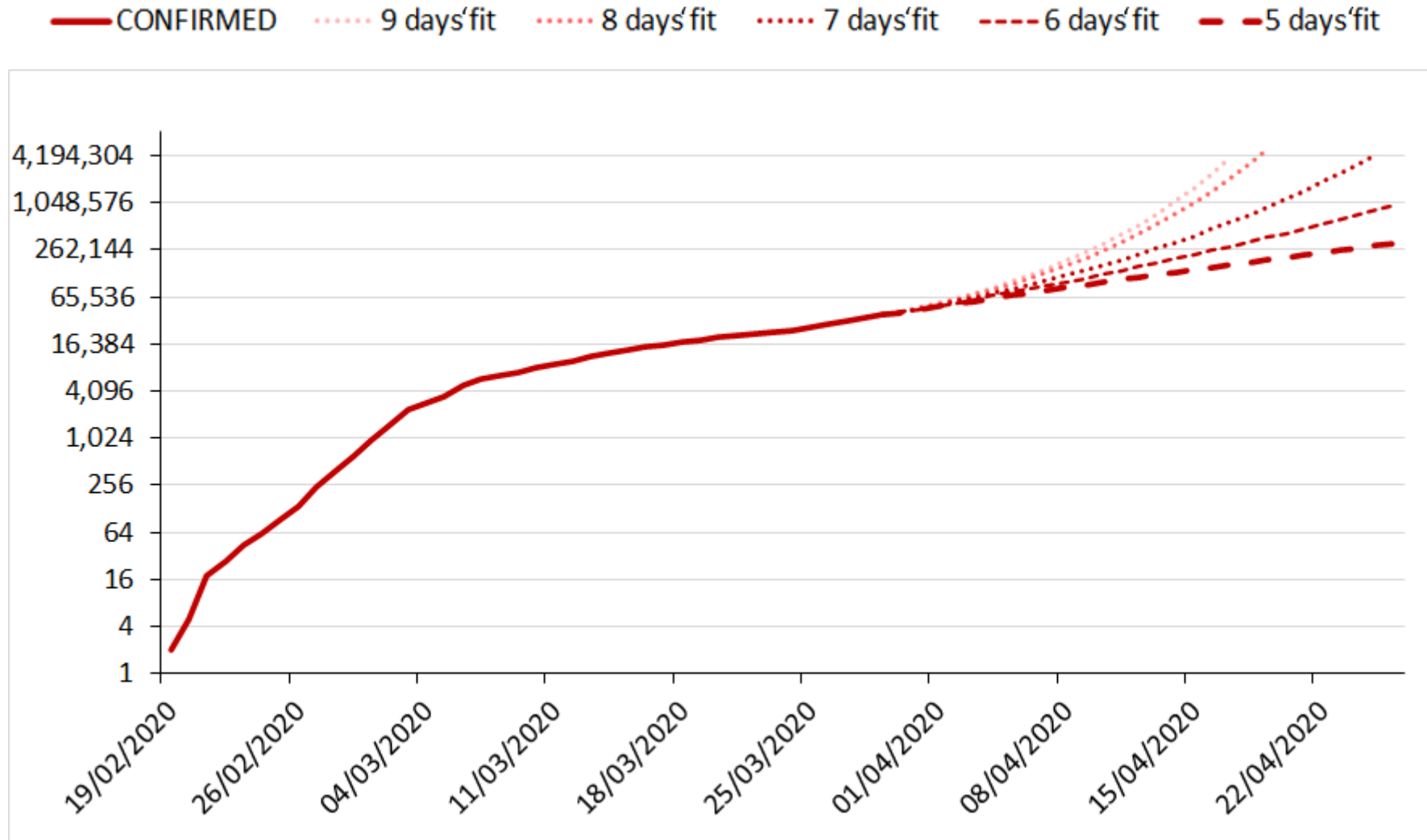
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Indonesia



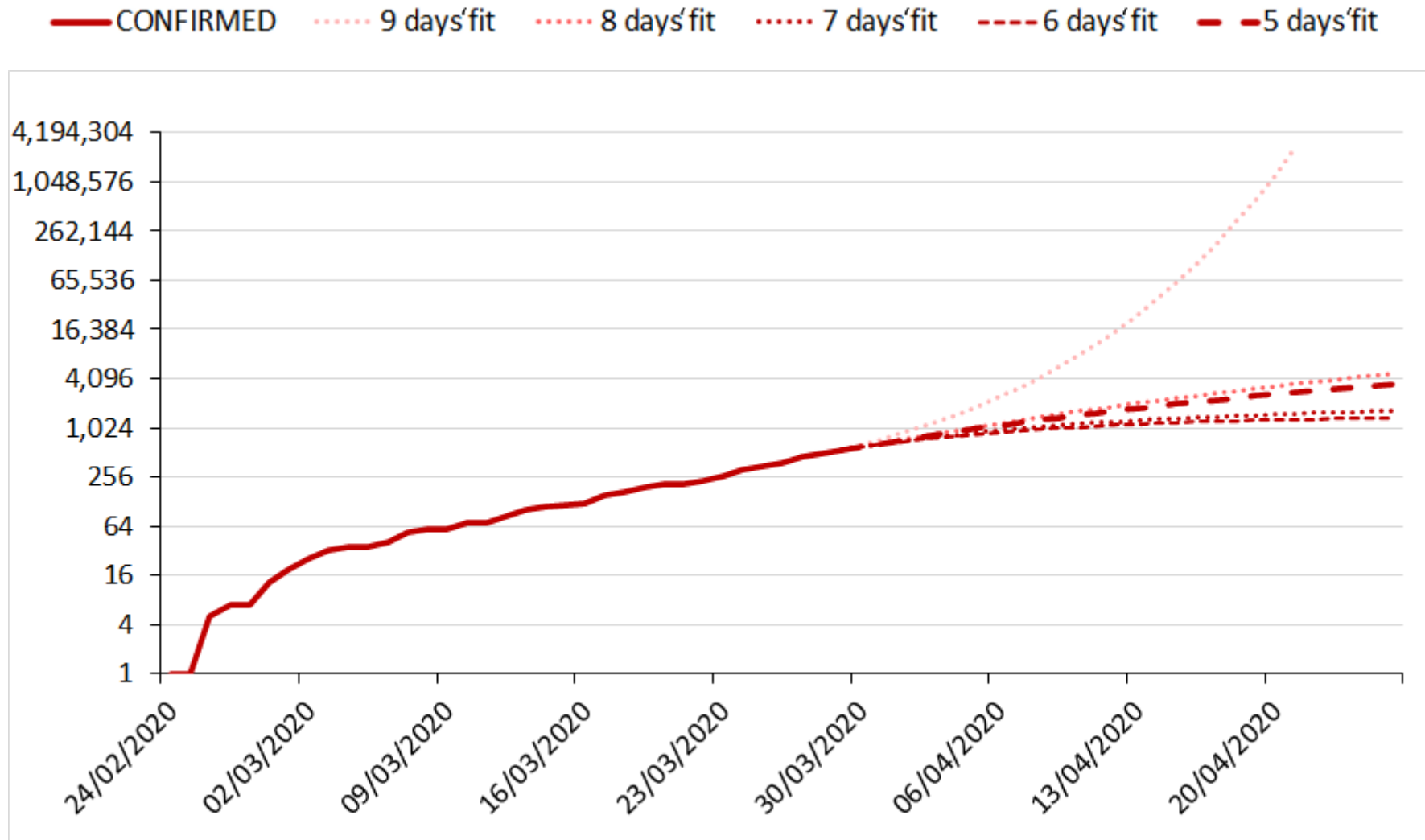
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Iran



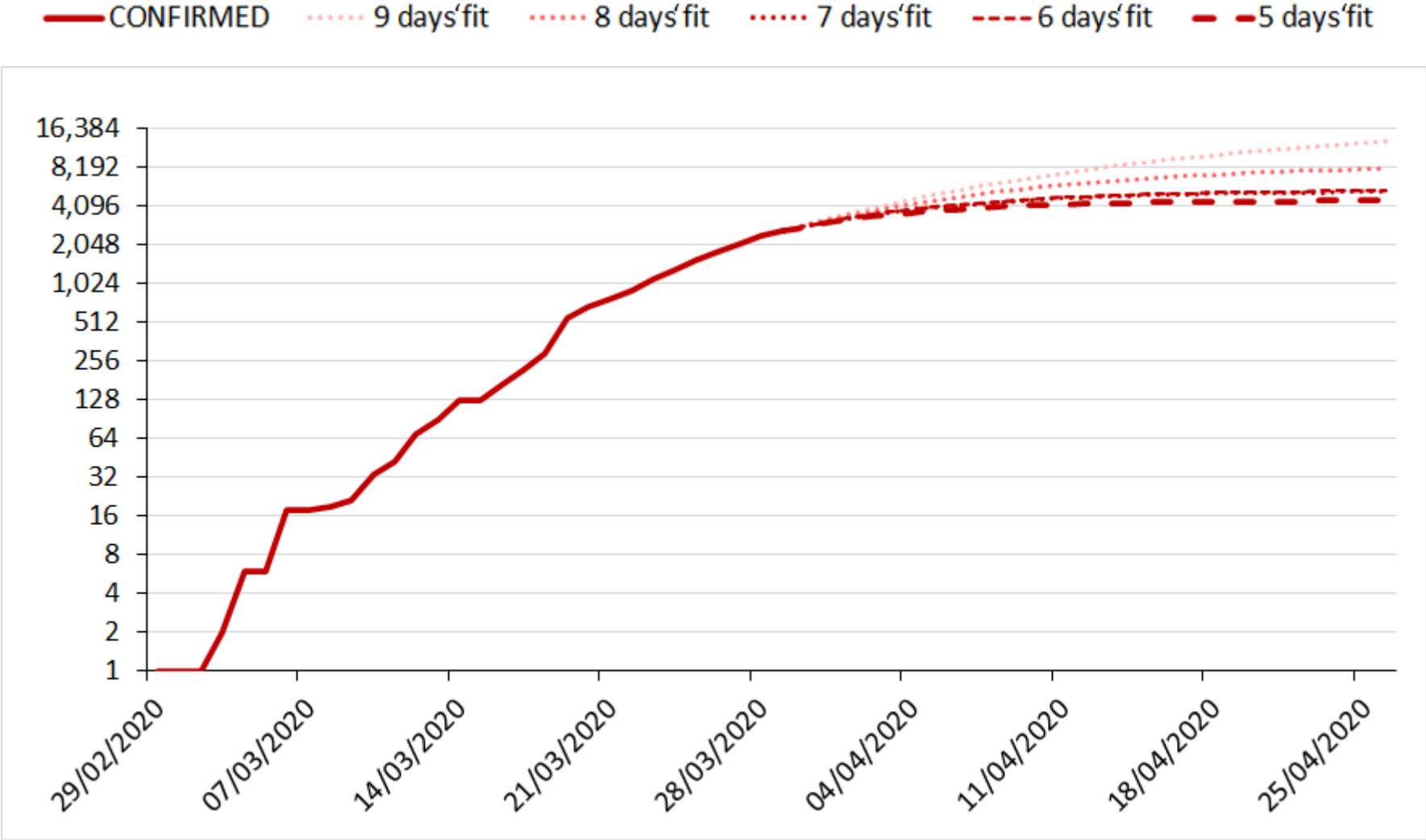
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Iraq



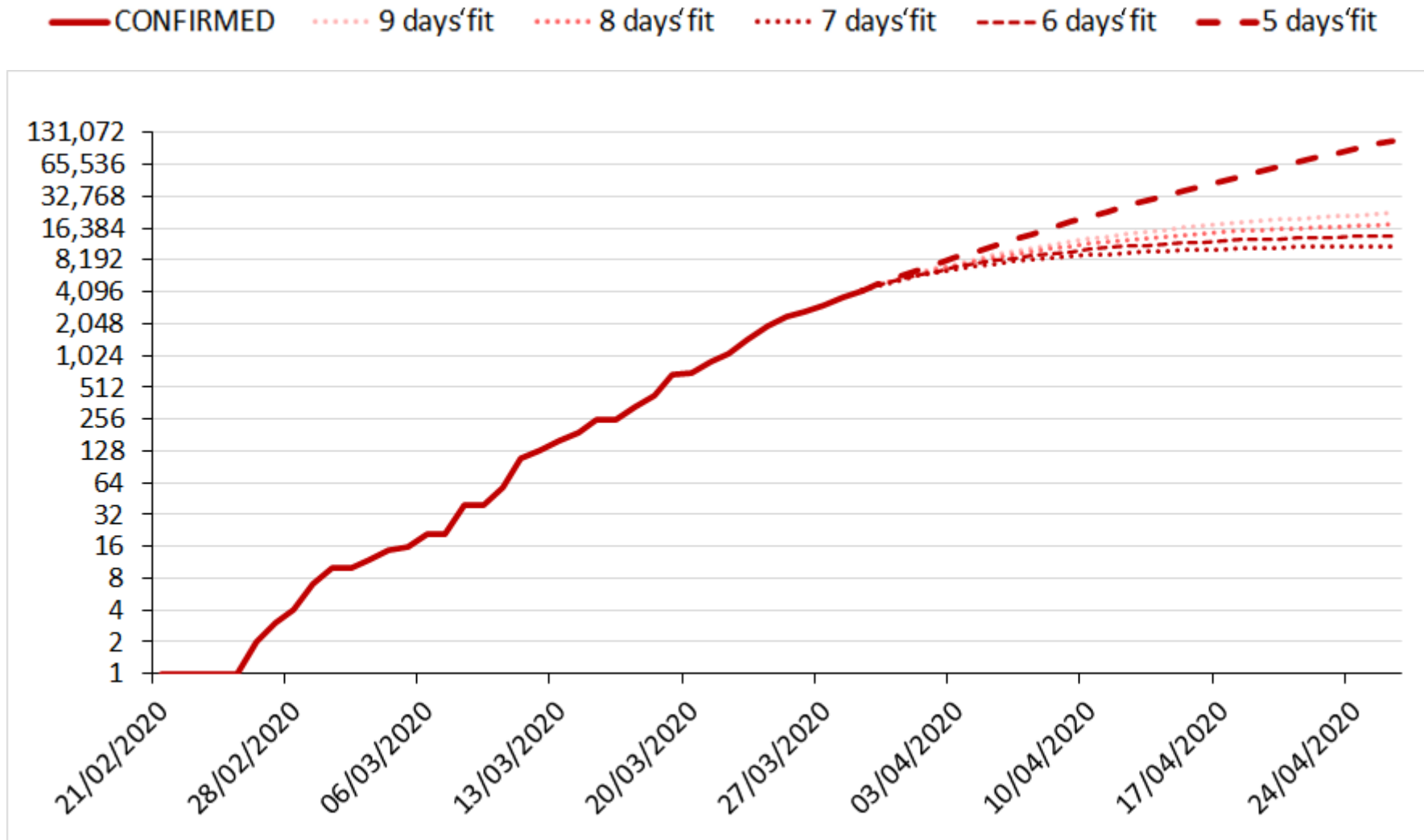
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Ireland



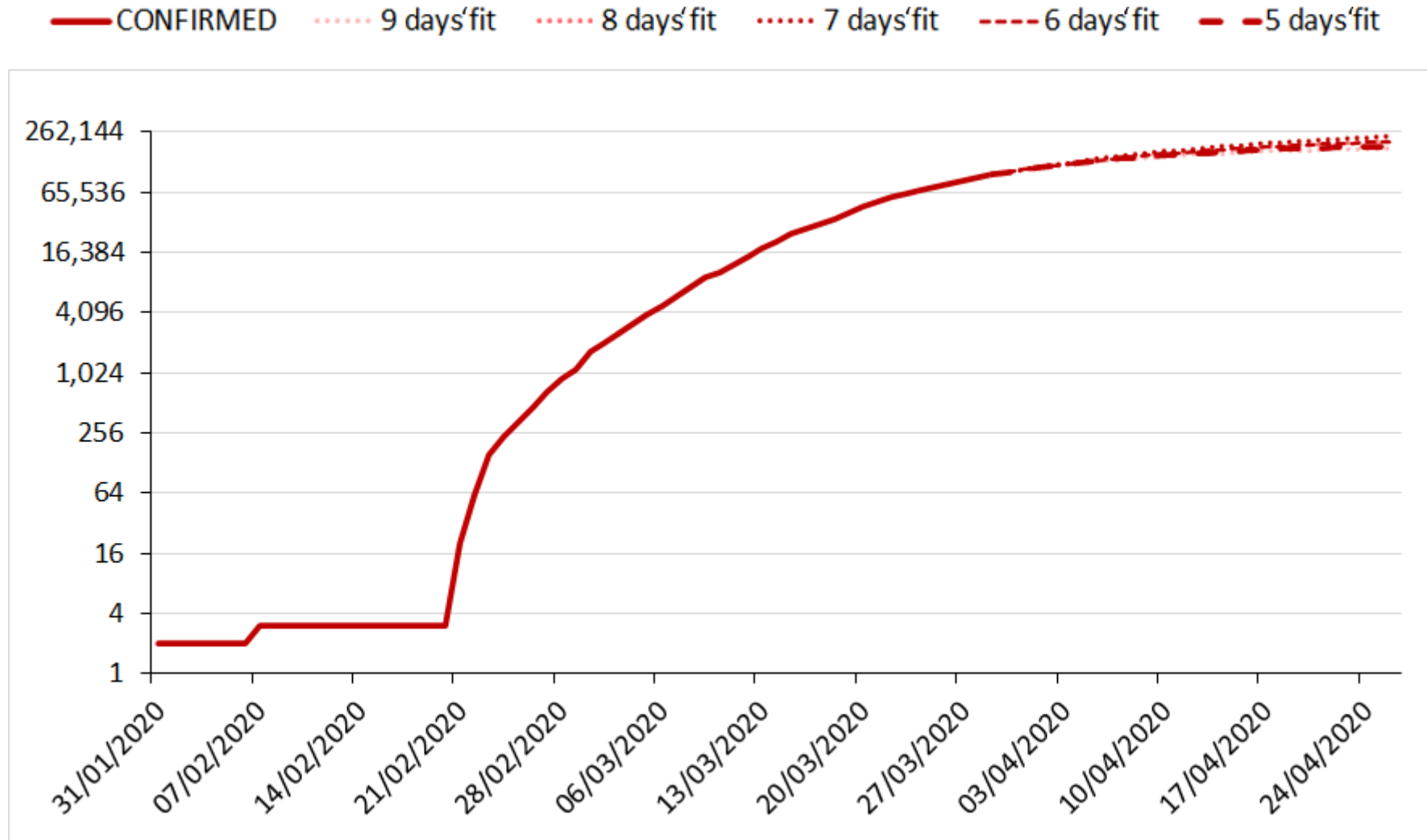
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Israel



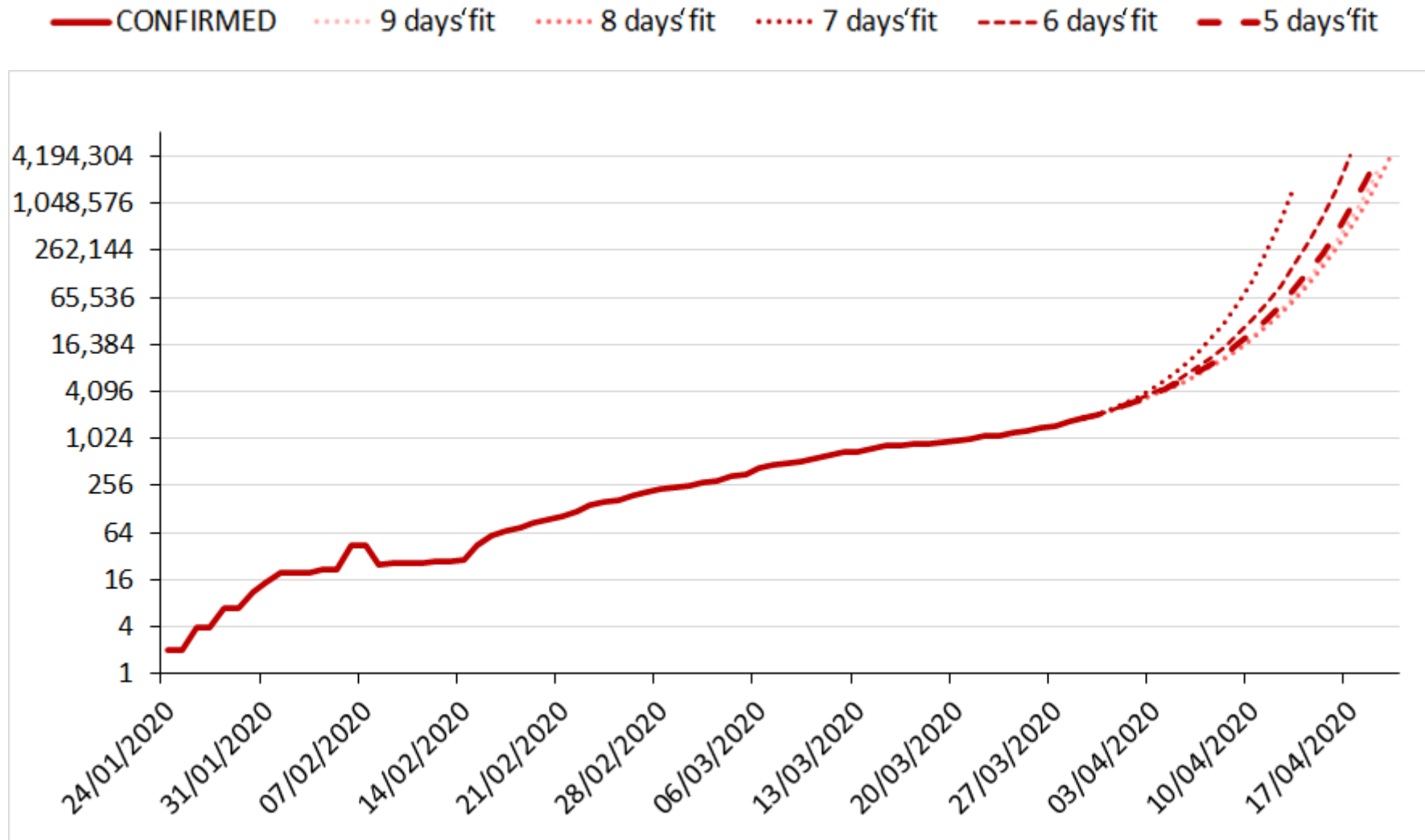
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Italy



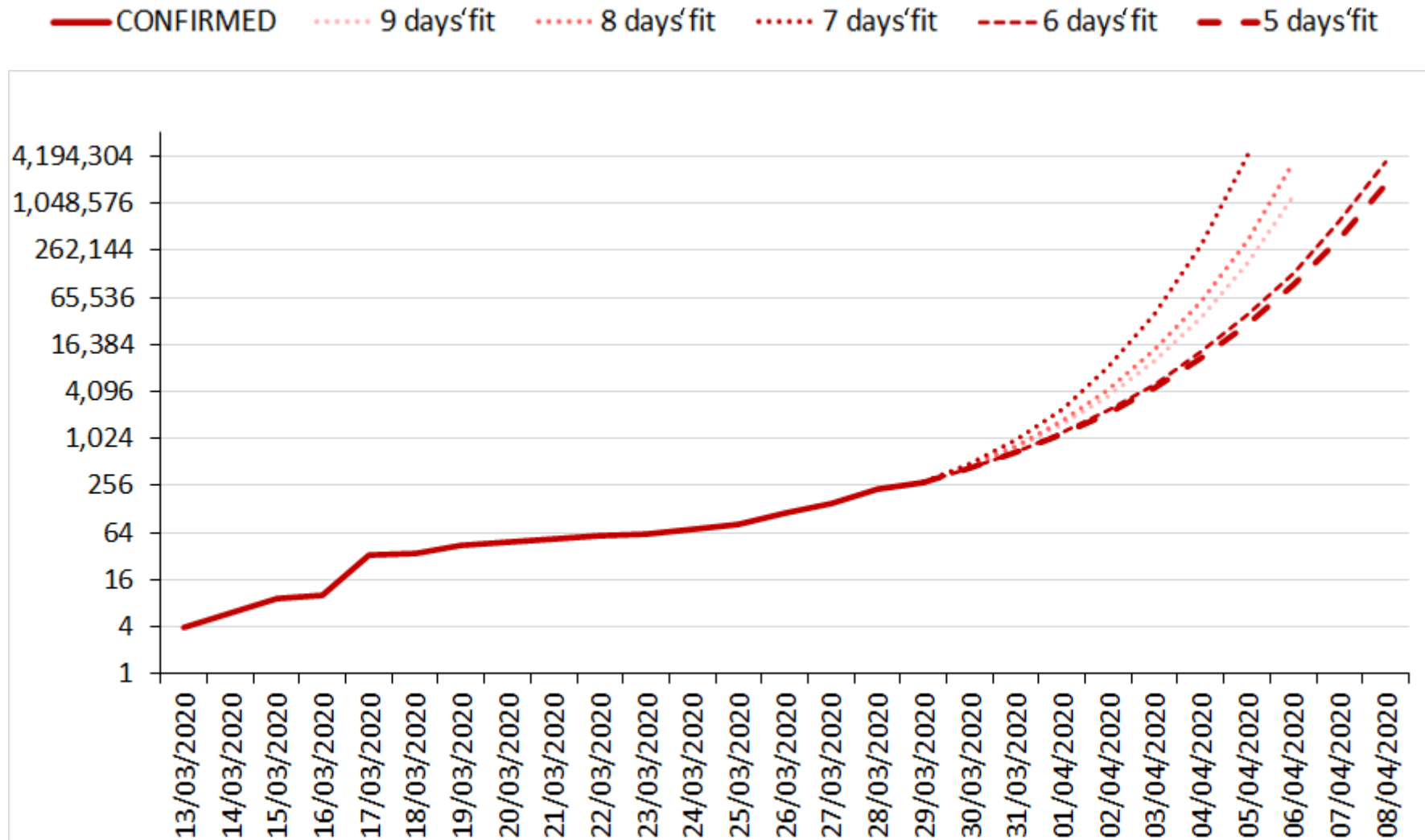
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Japan



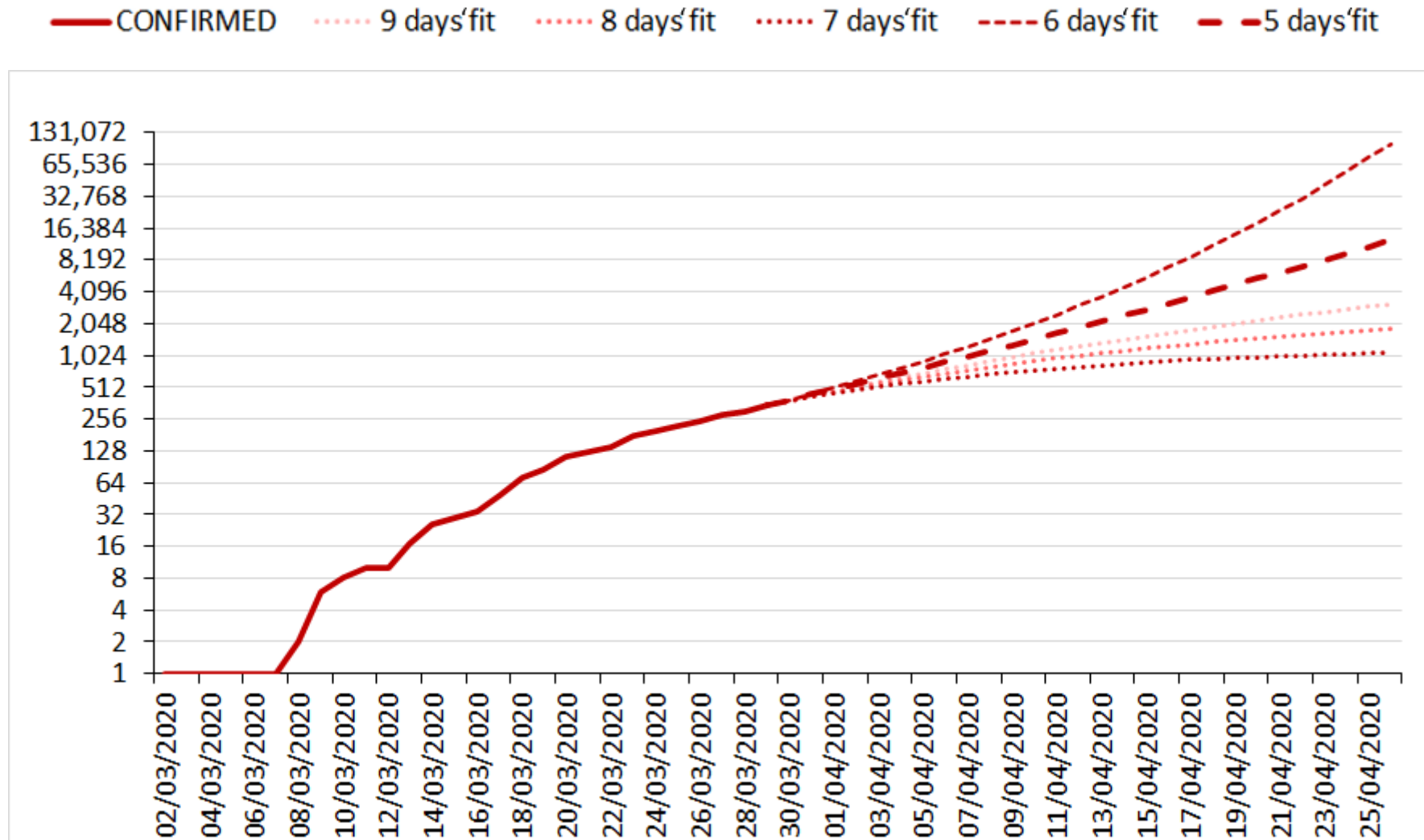
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Kazakhstan



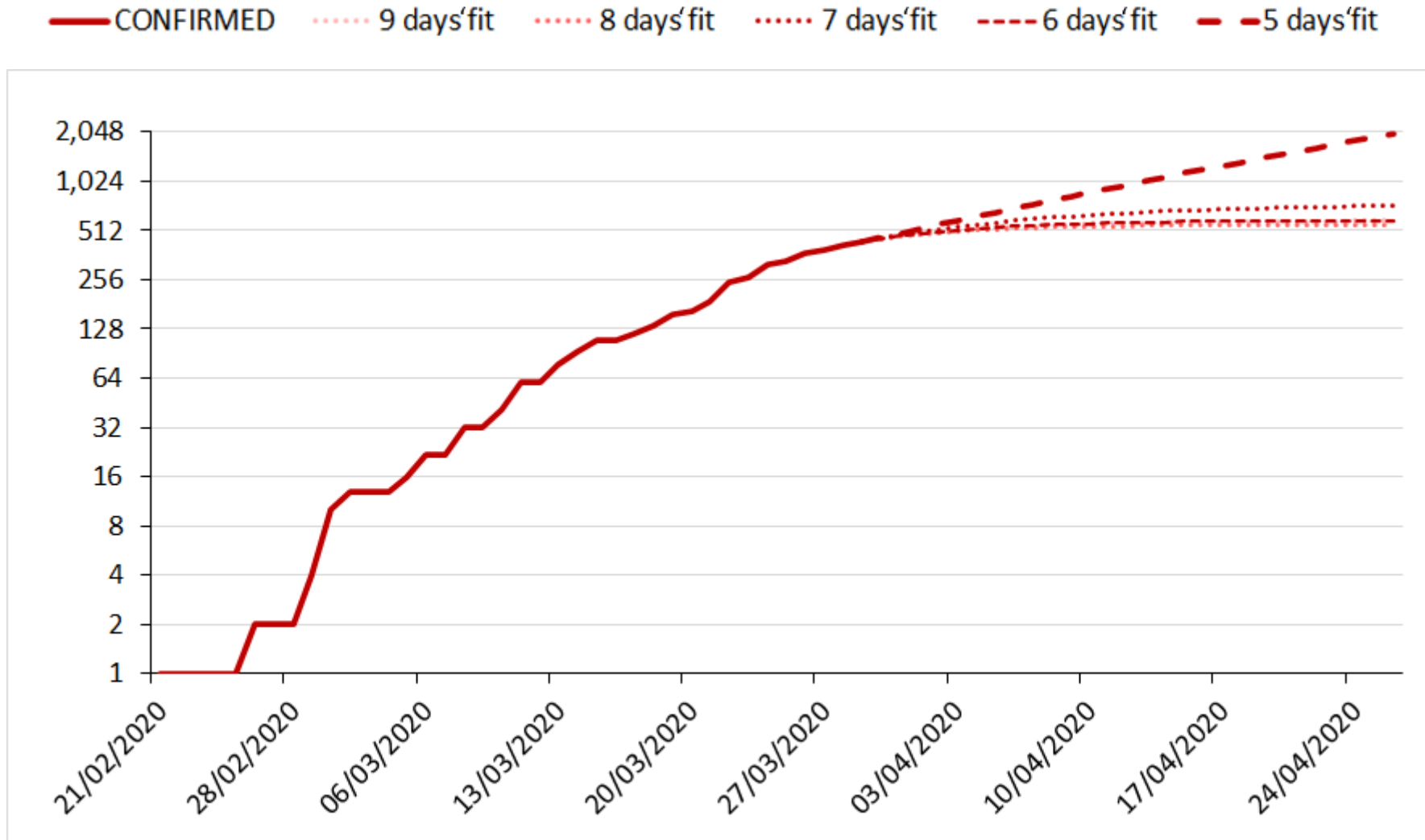
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Latvia



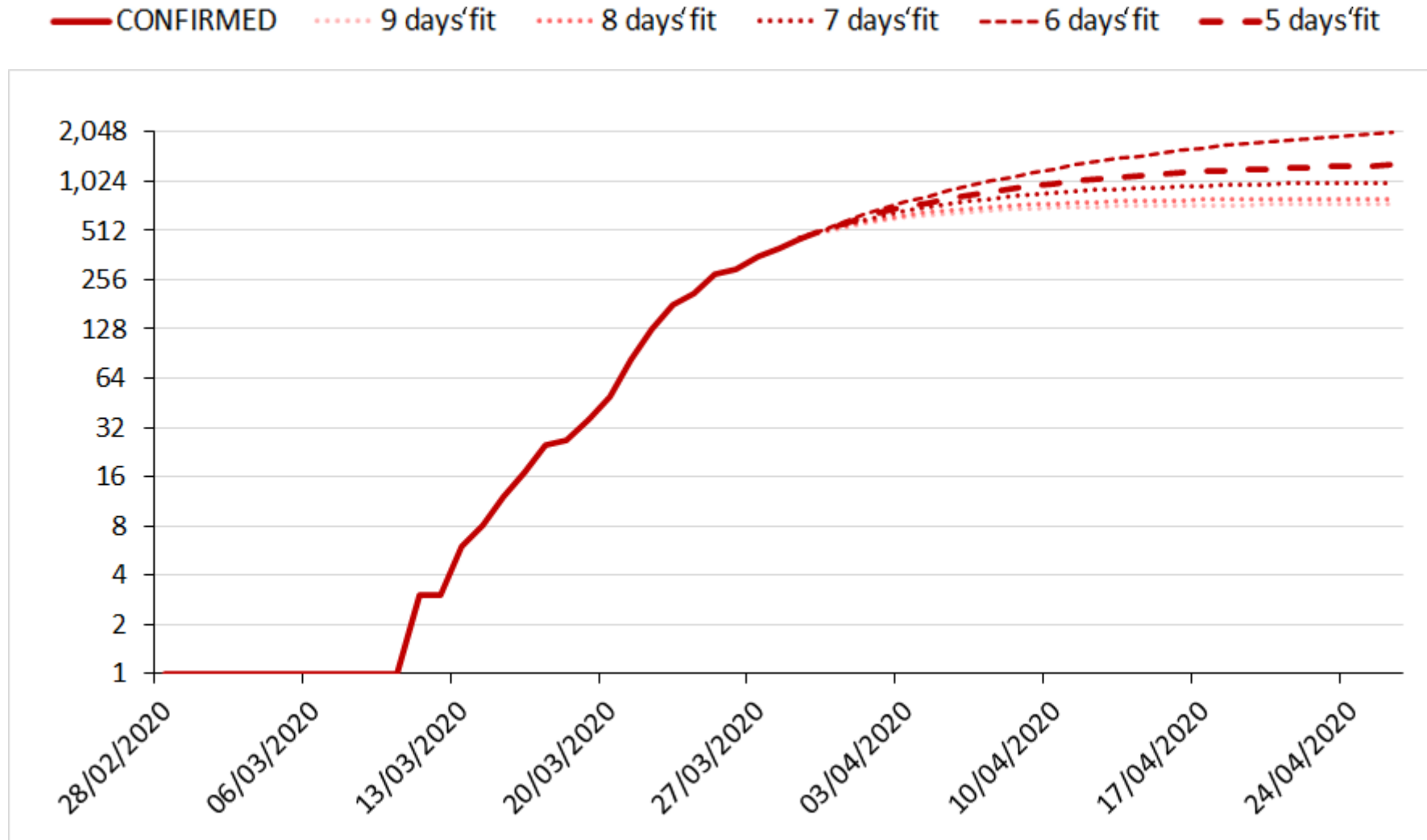
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Lebanon



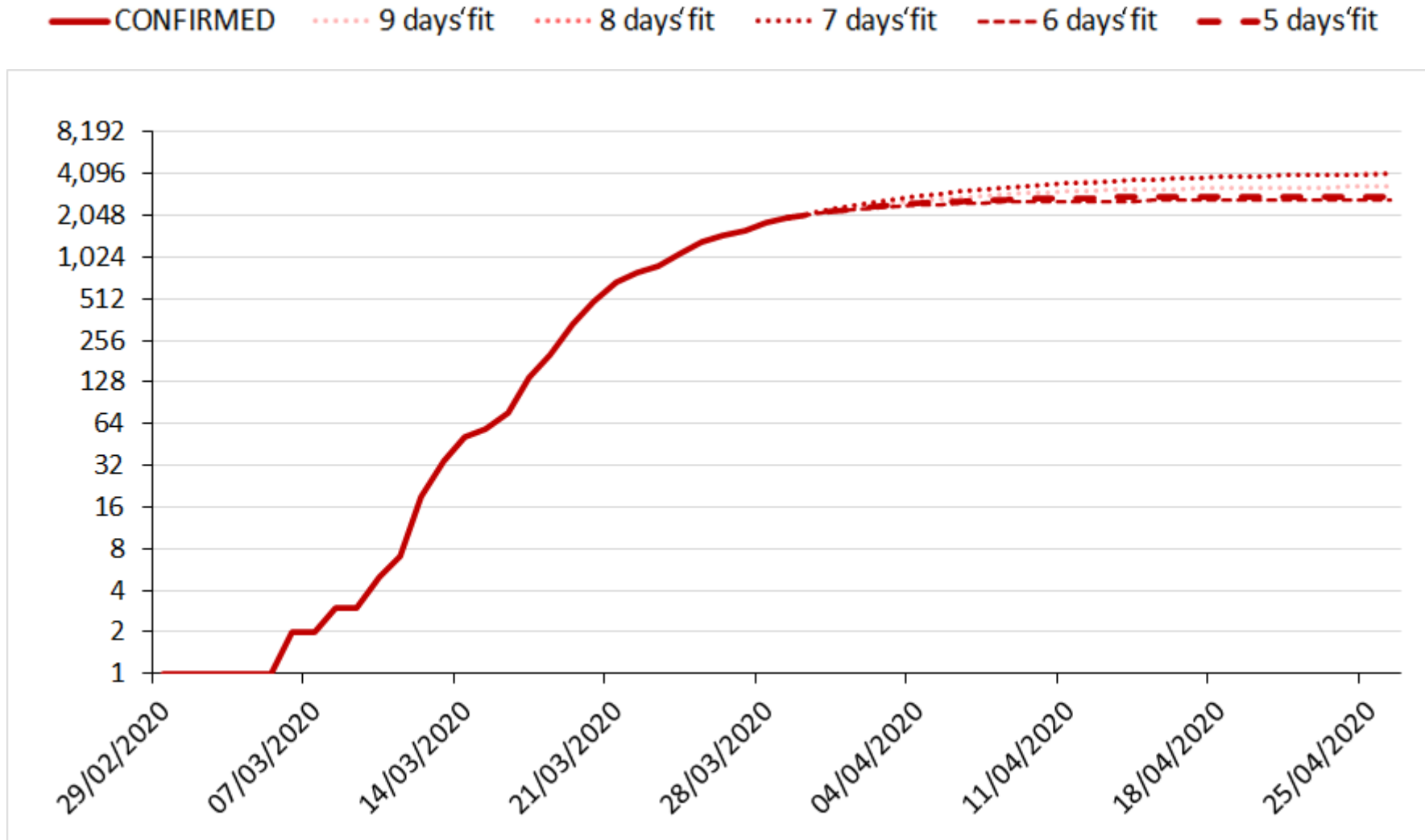
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Lithuania



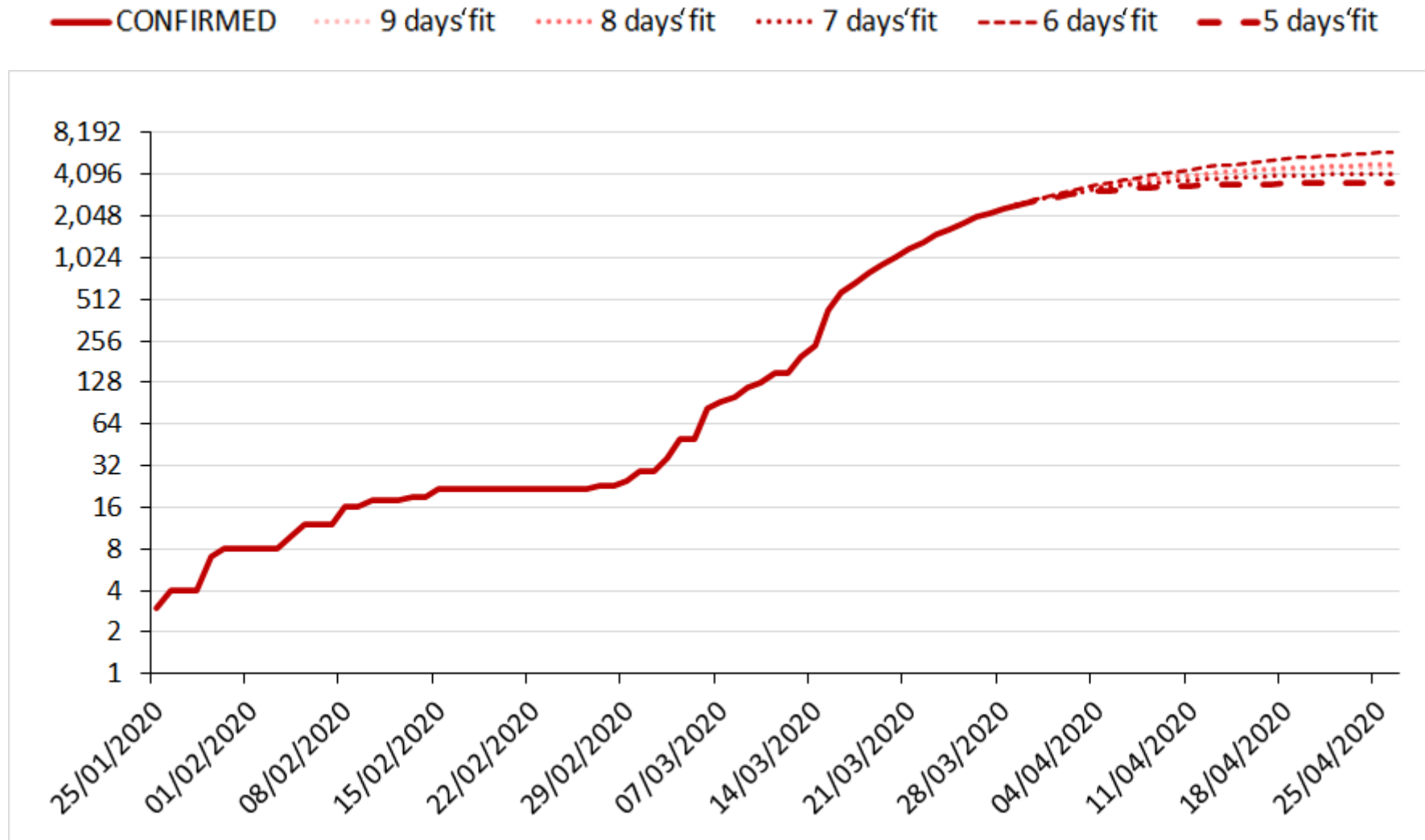
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Luxembourg



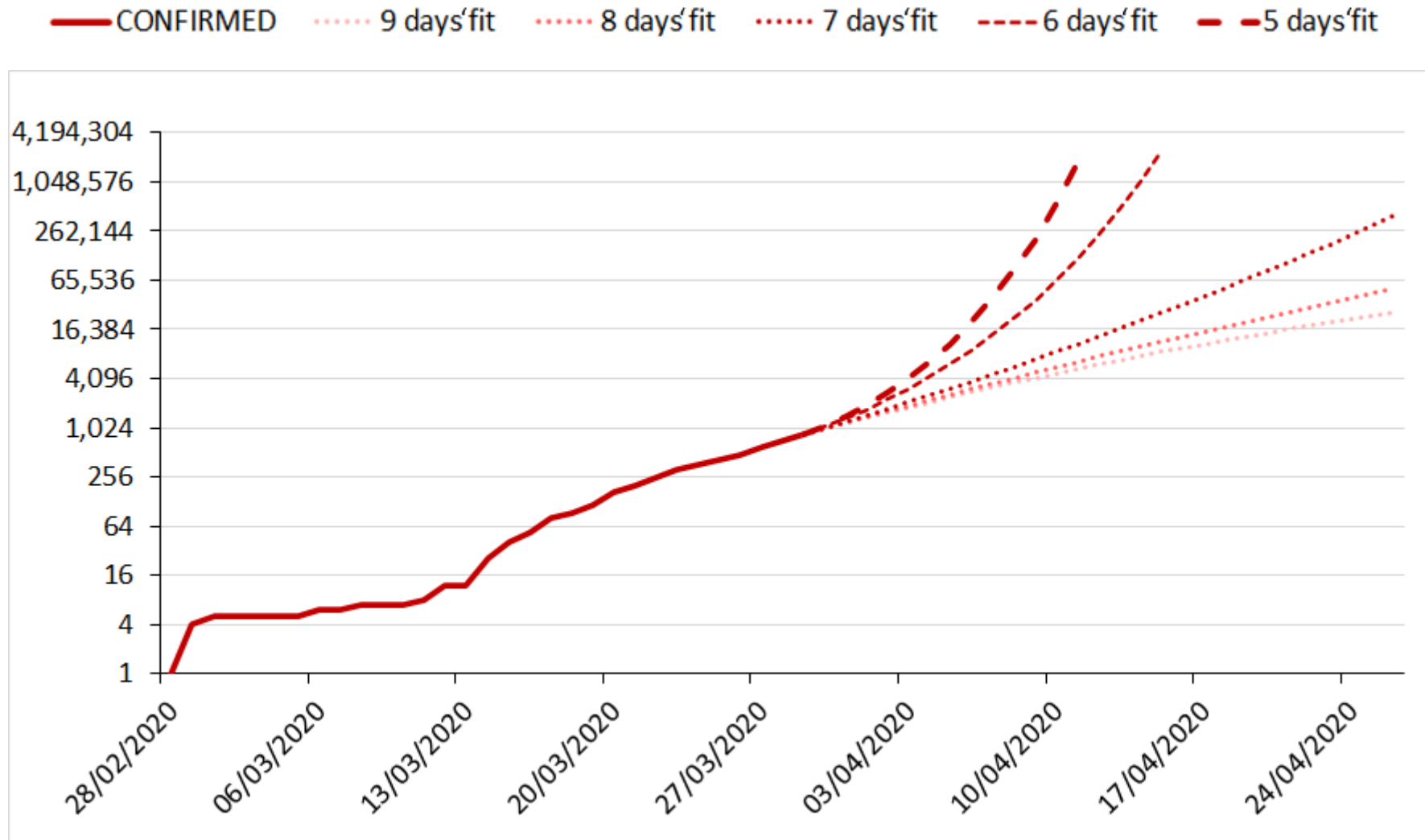
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Malaysia



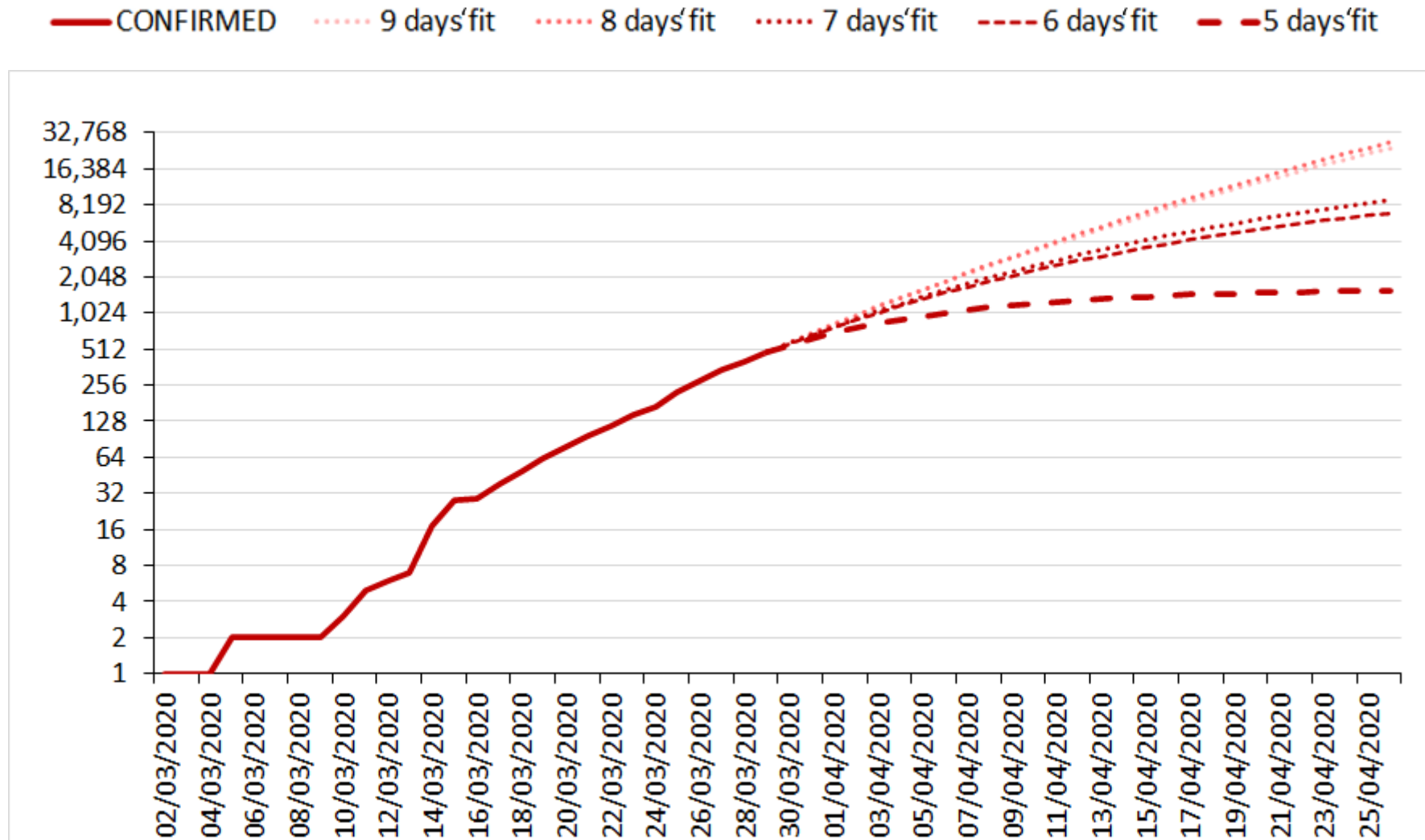
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Mexico



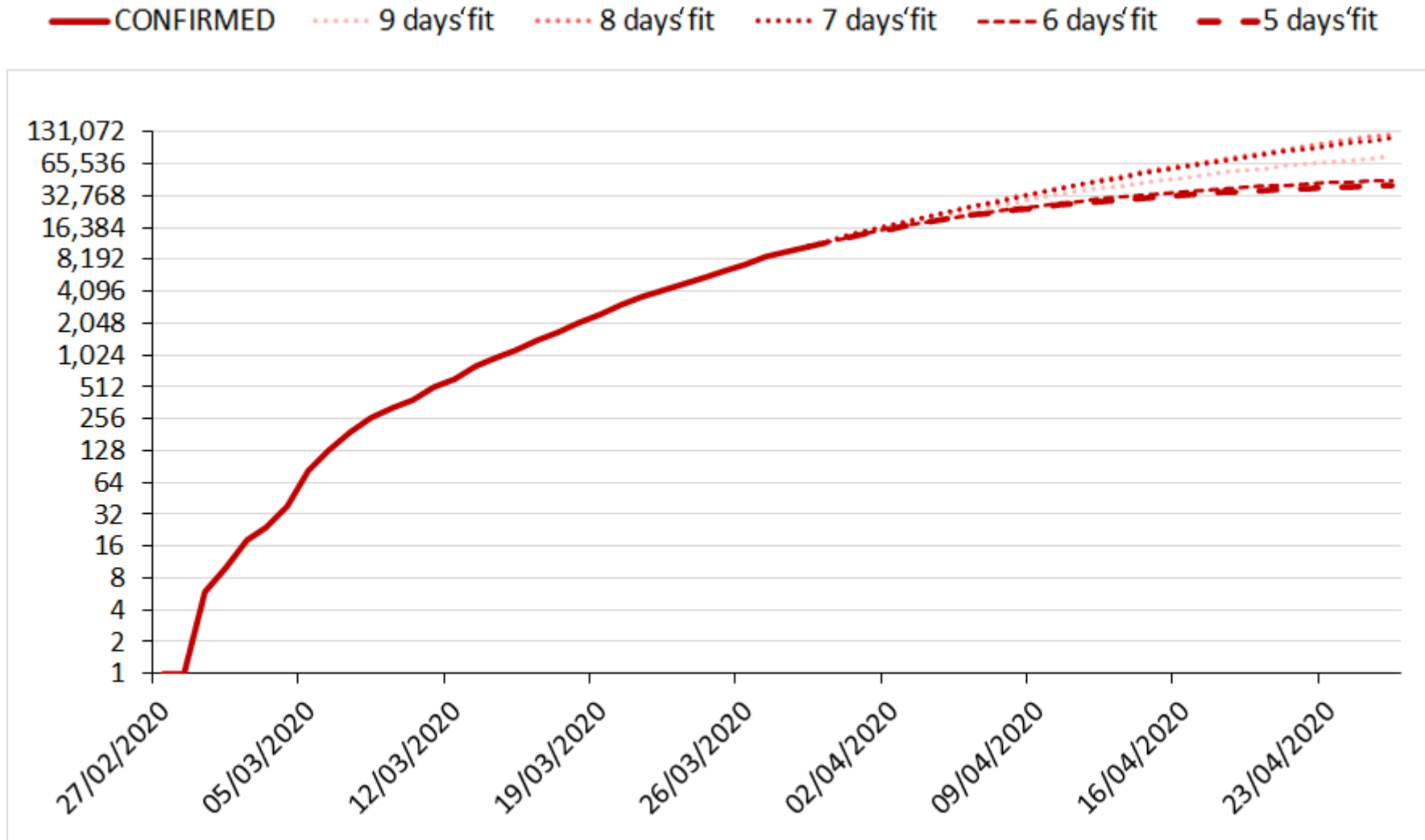
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Morocco



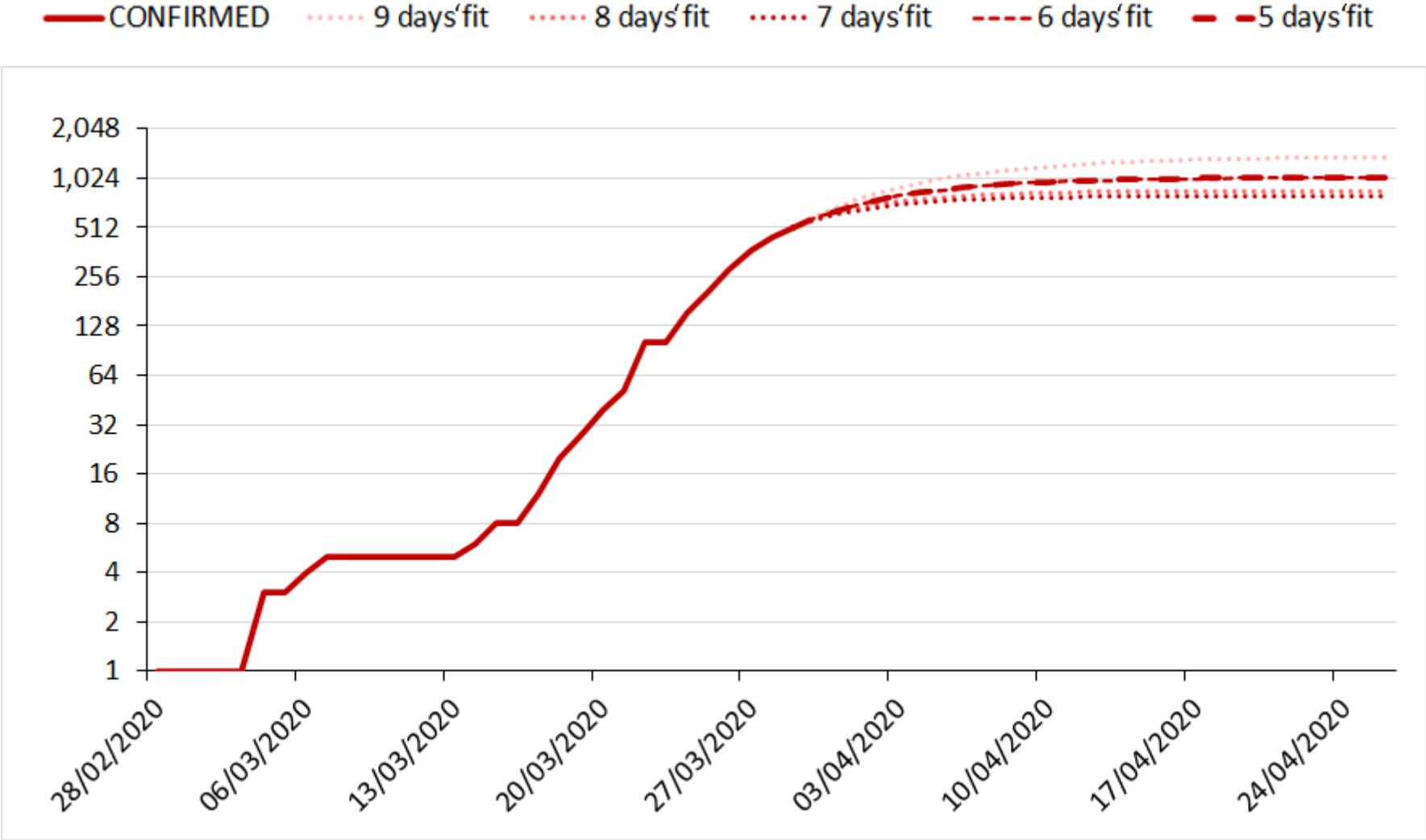
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Netherlands



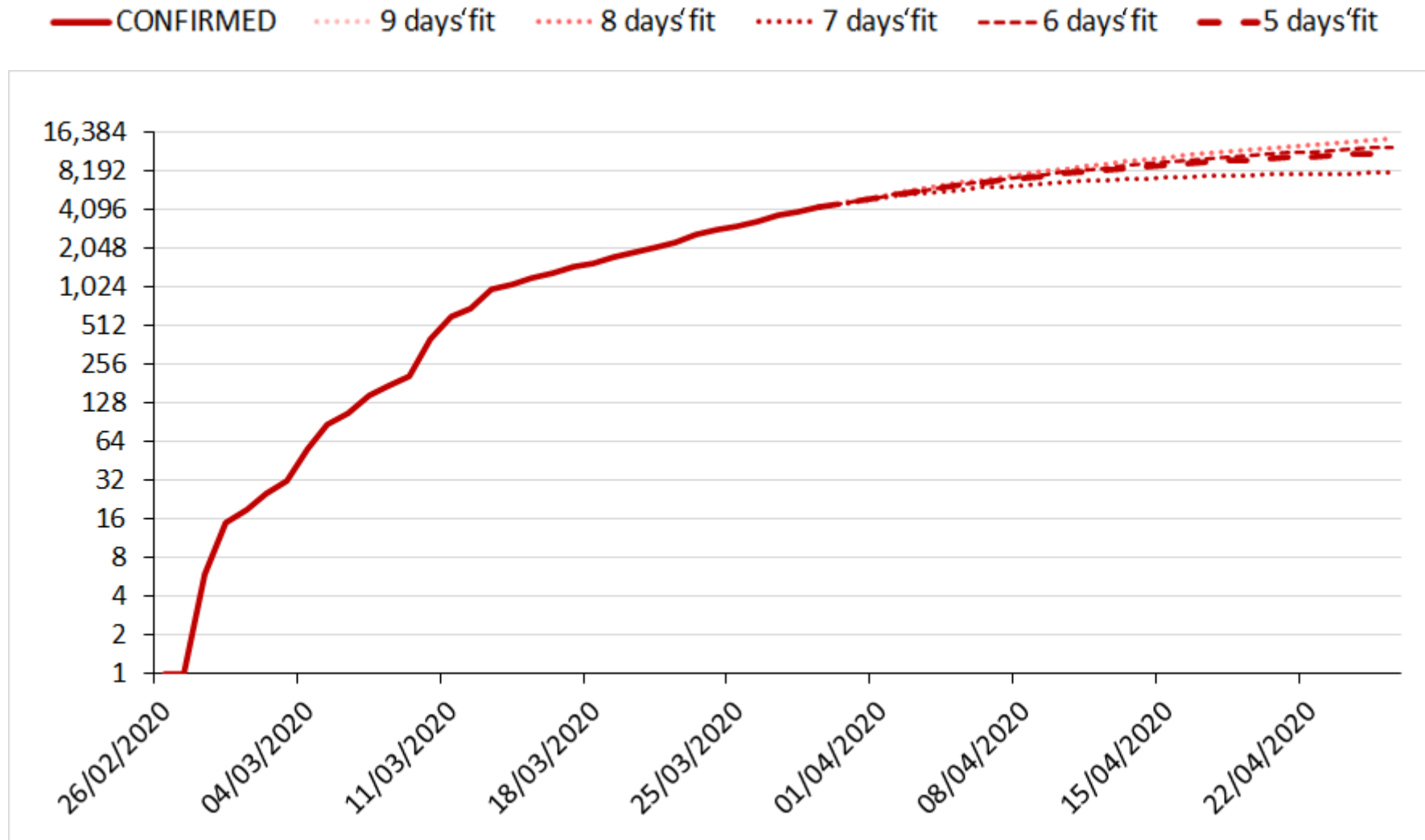
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New Zealand



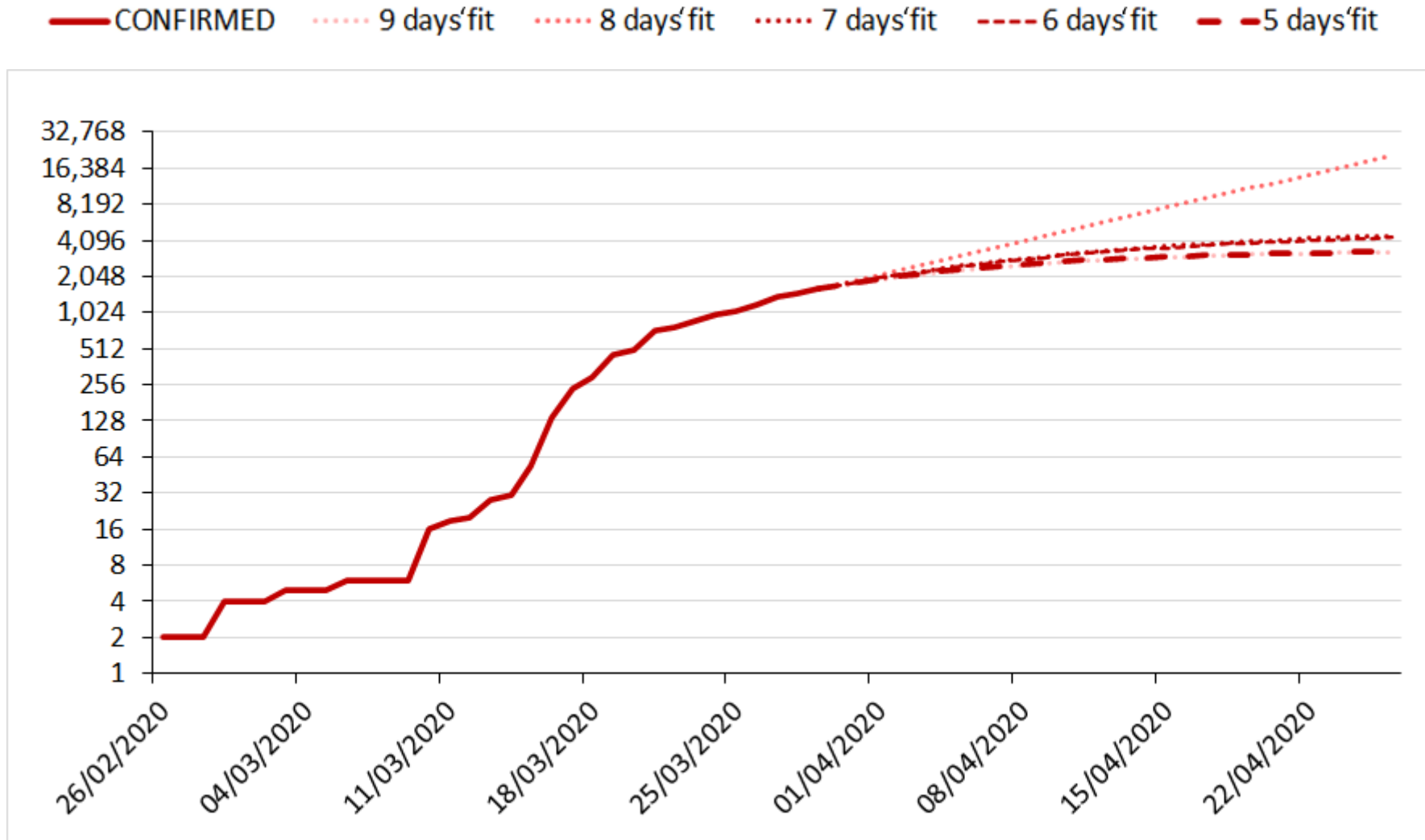
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Norway



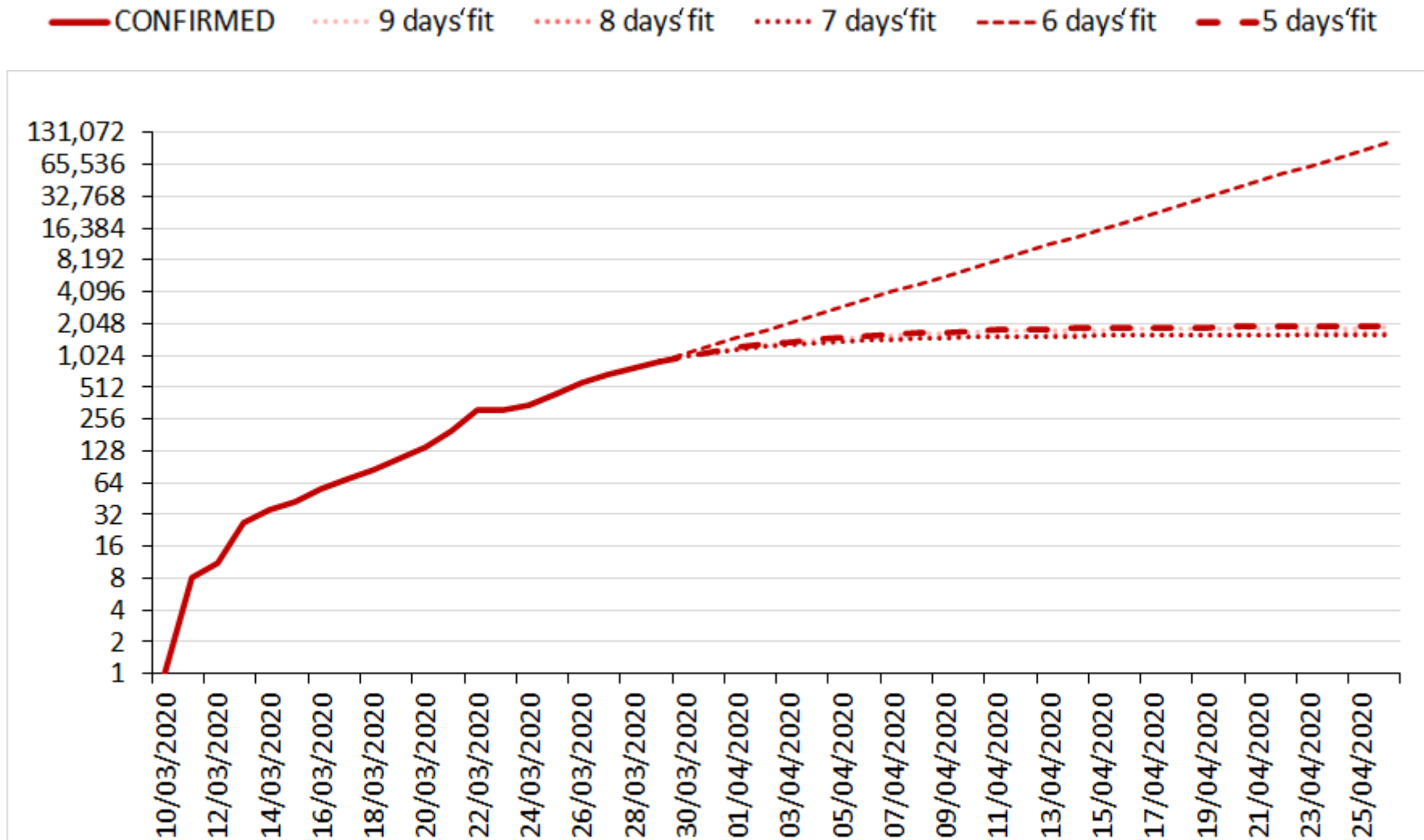
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Pakistan



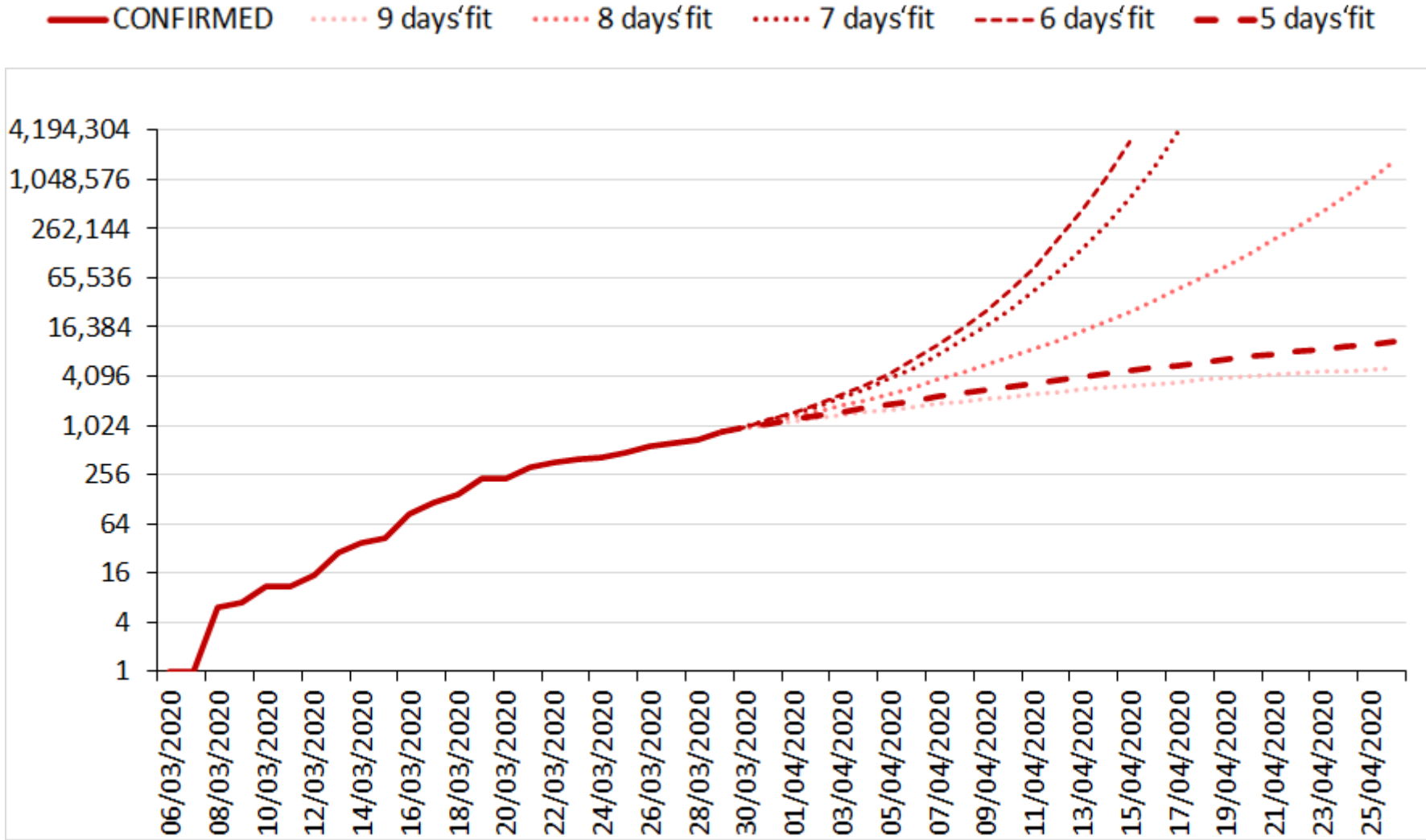
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Panama



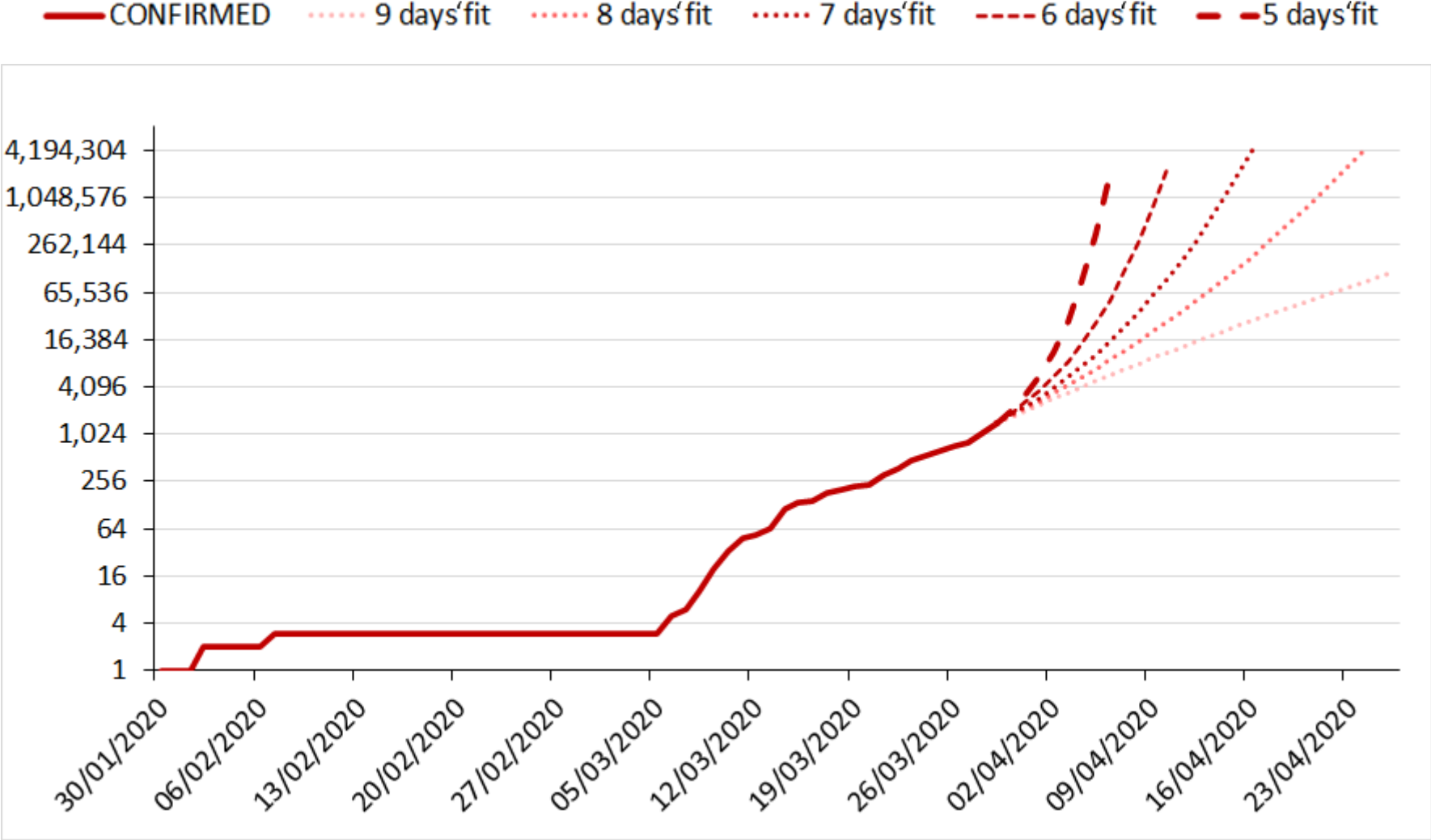
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Peru



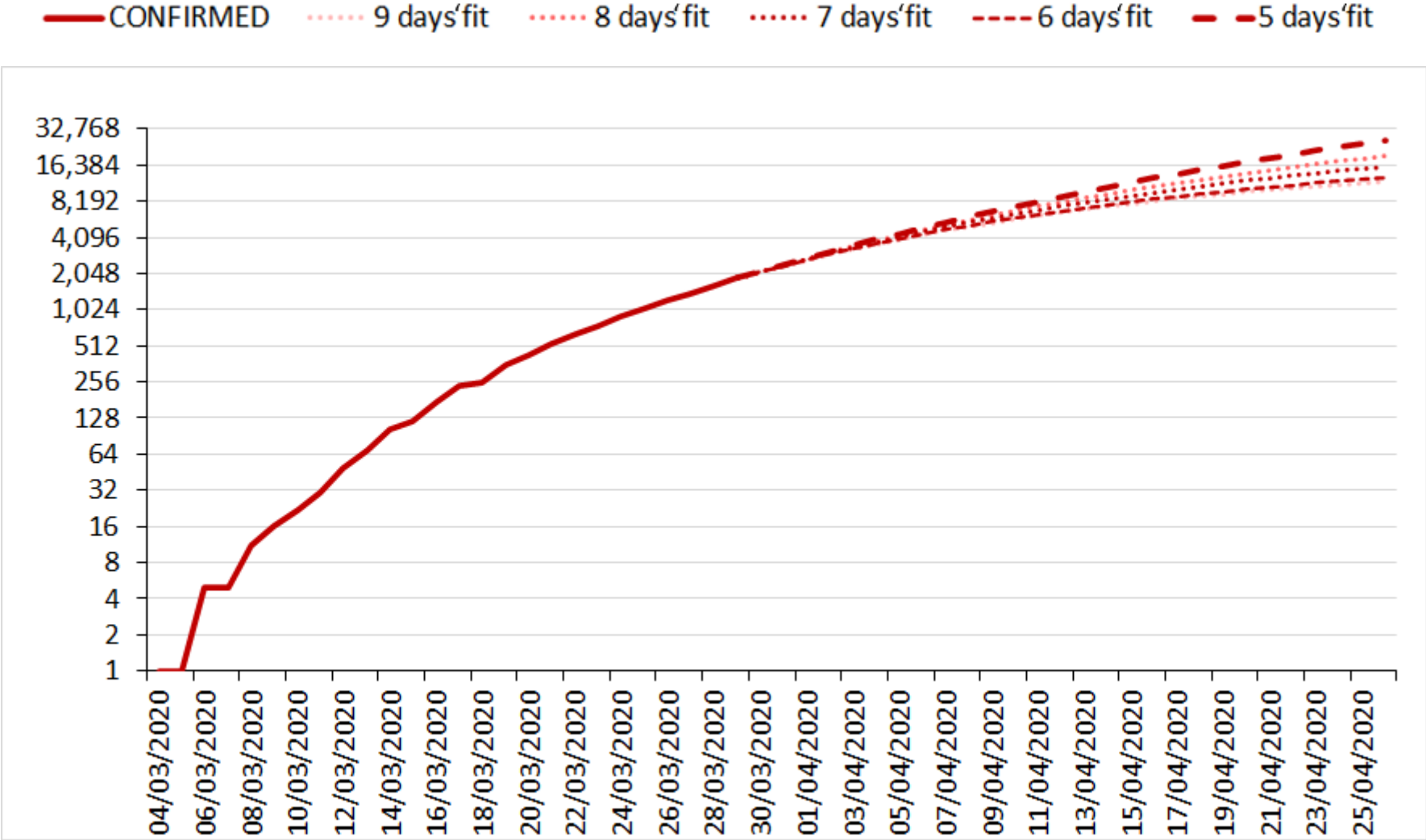
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Philippines



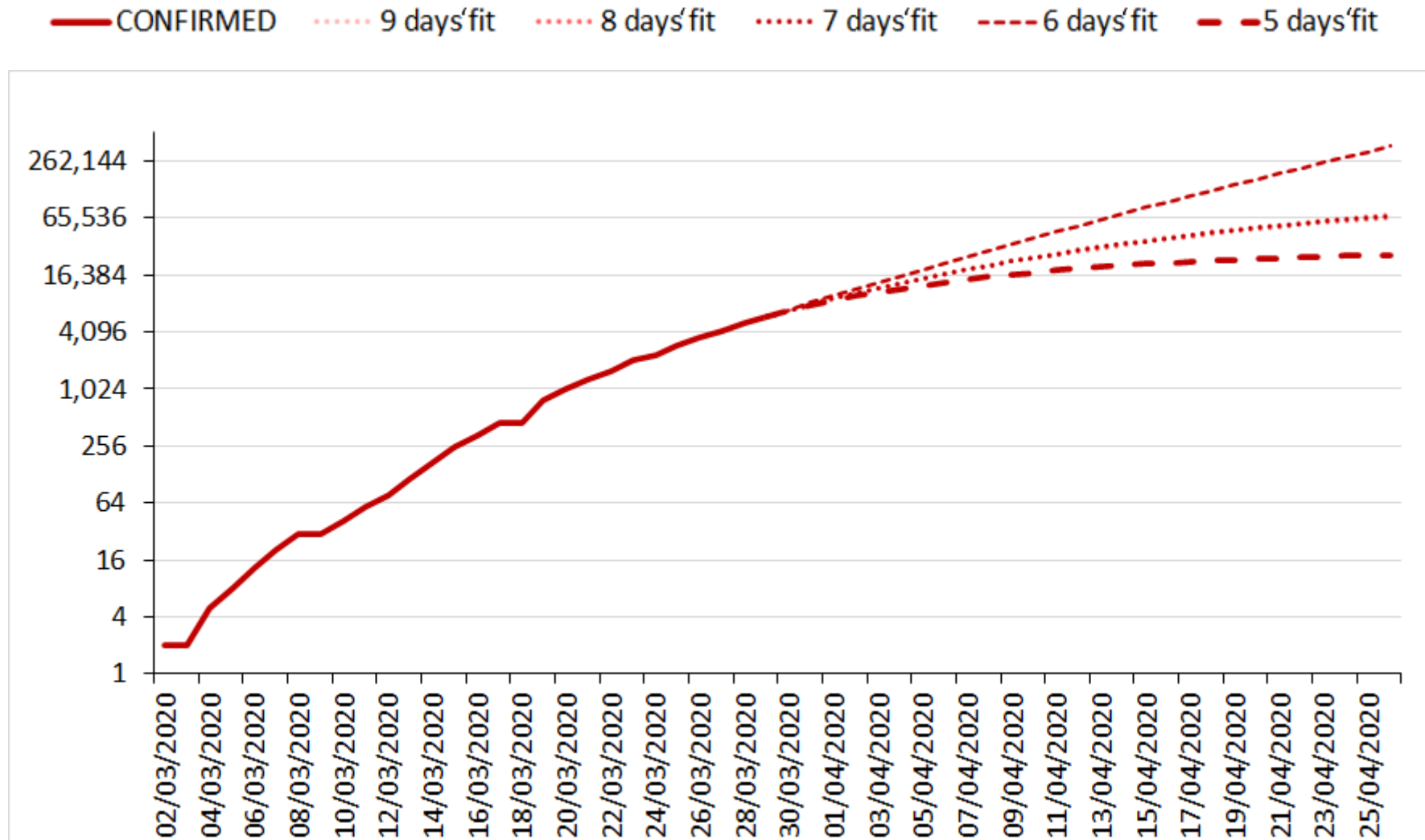
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Poland



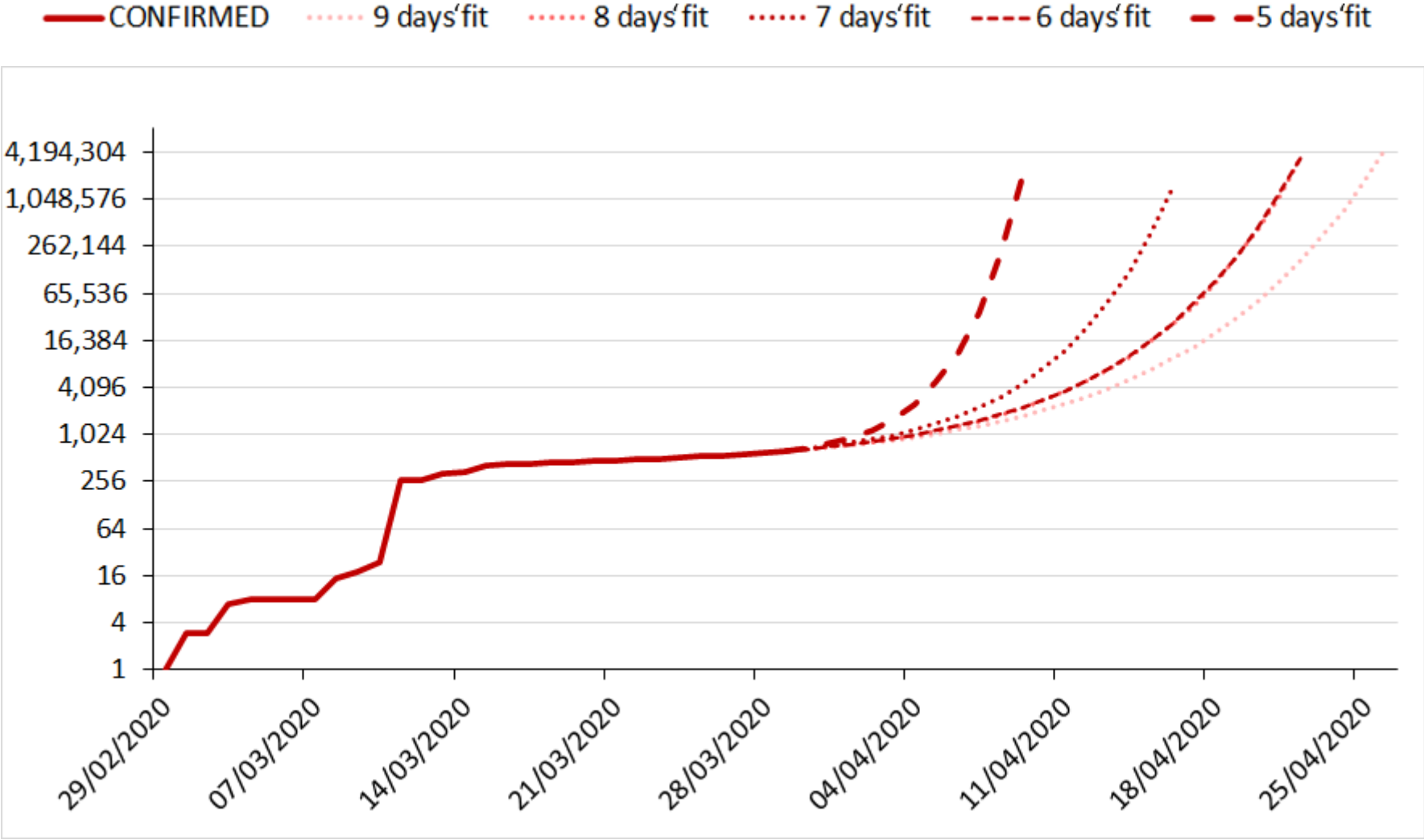
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Portugal



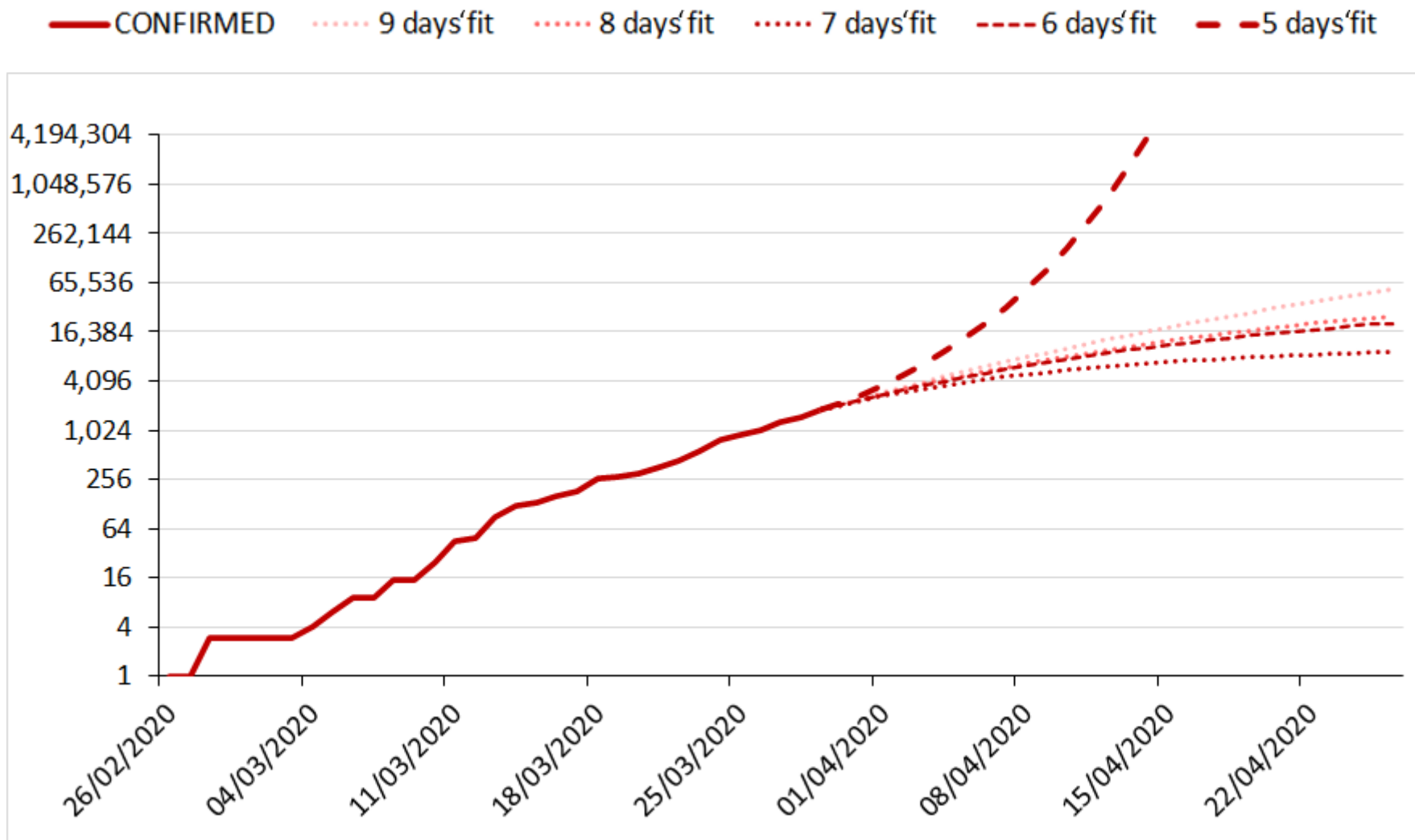
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Qatar



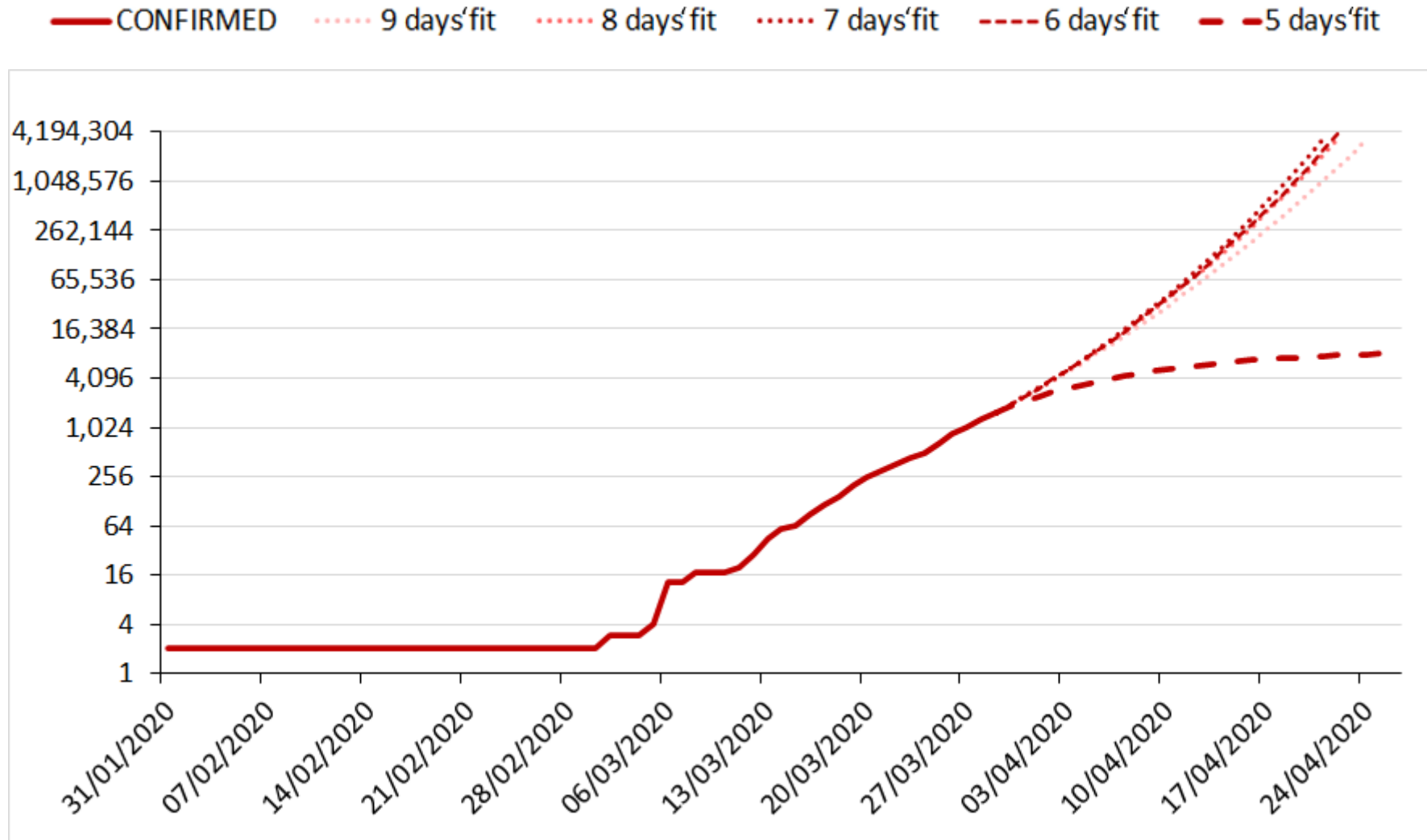
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Romania



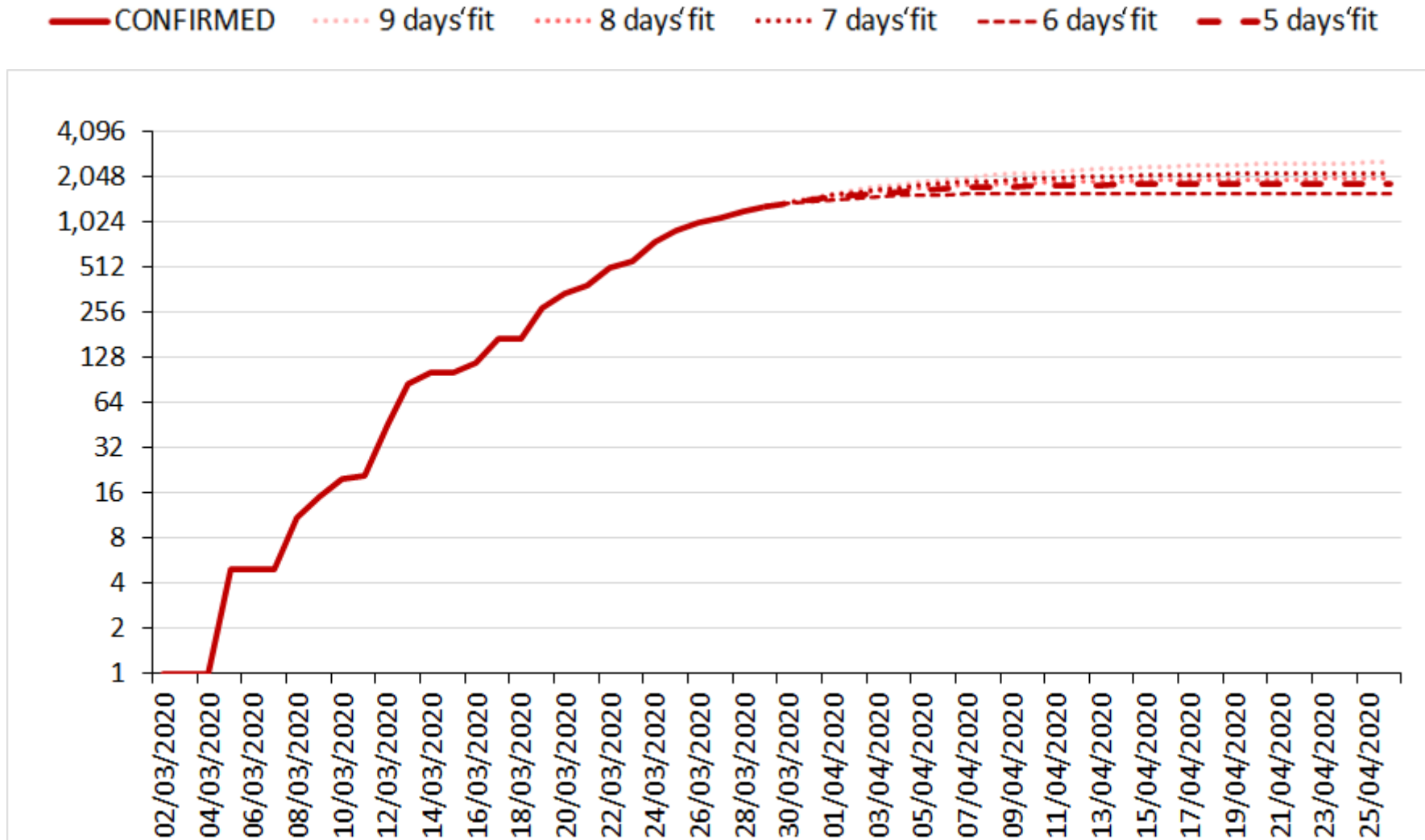
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Russia



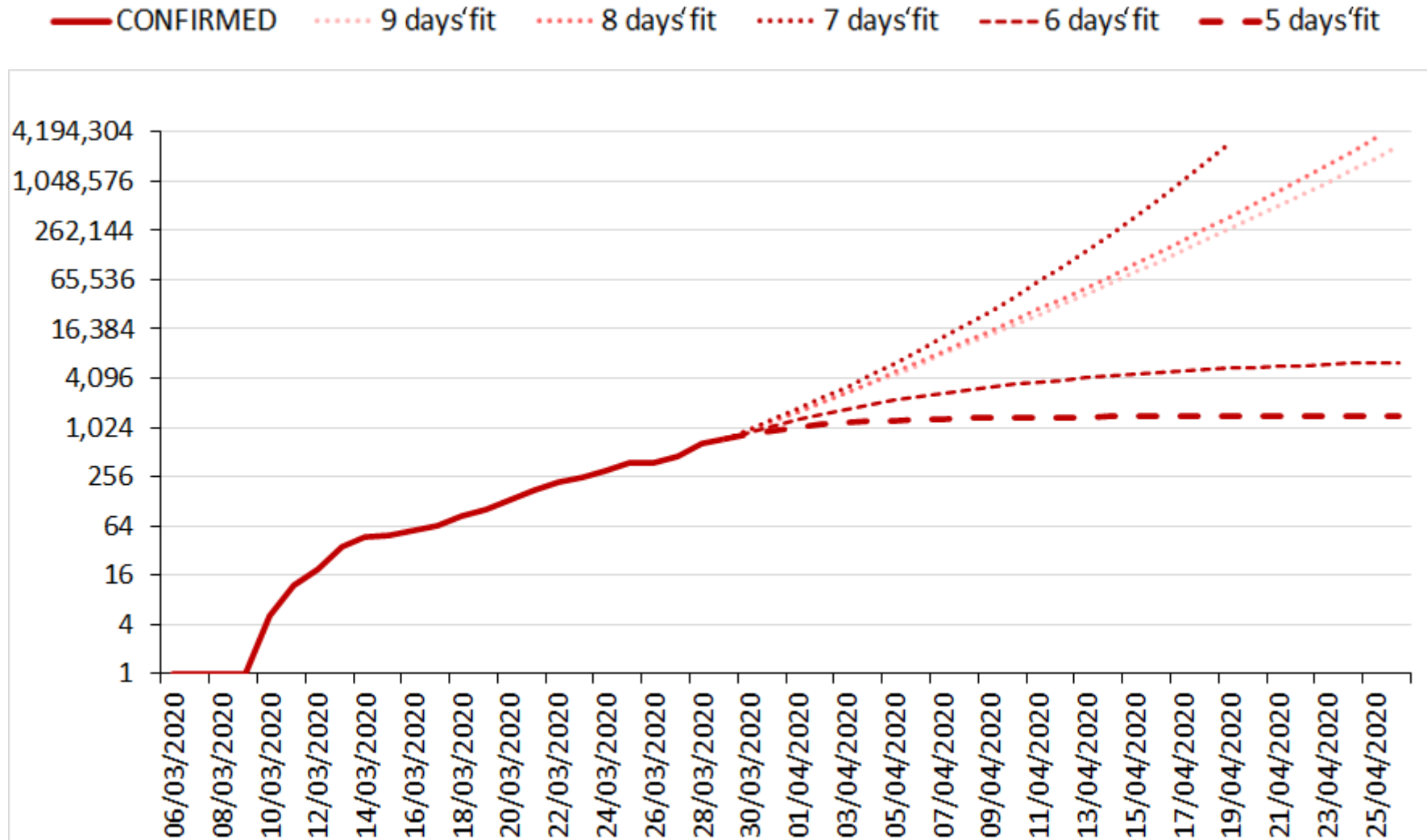
Data: The Johns Hopkins University, Politolog.com

Saudi Arabia



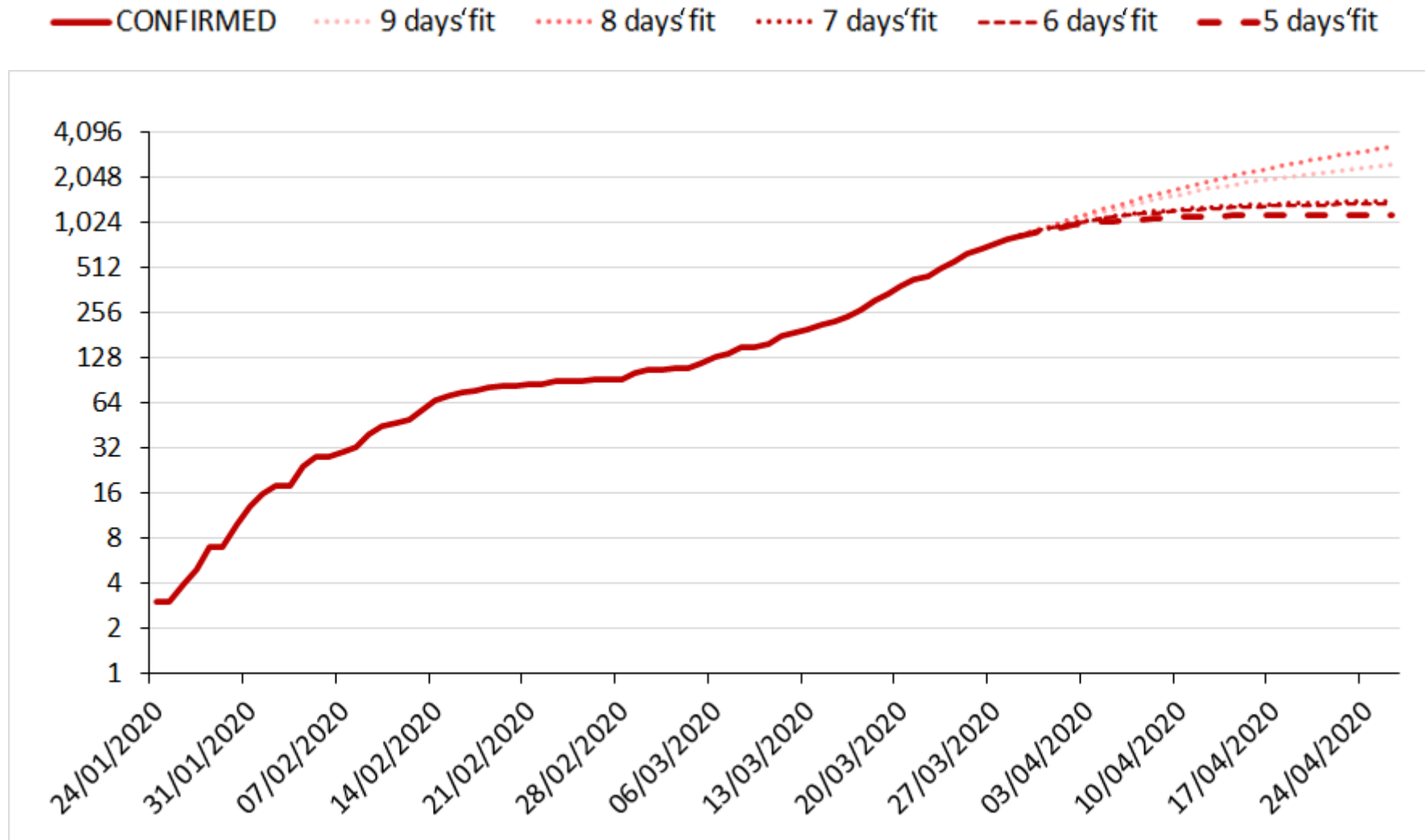
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Serbia



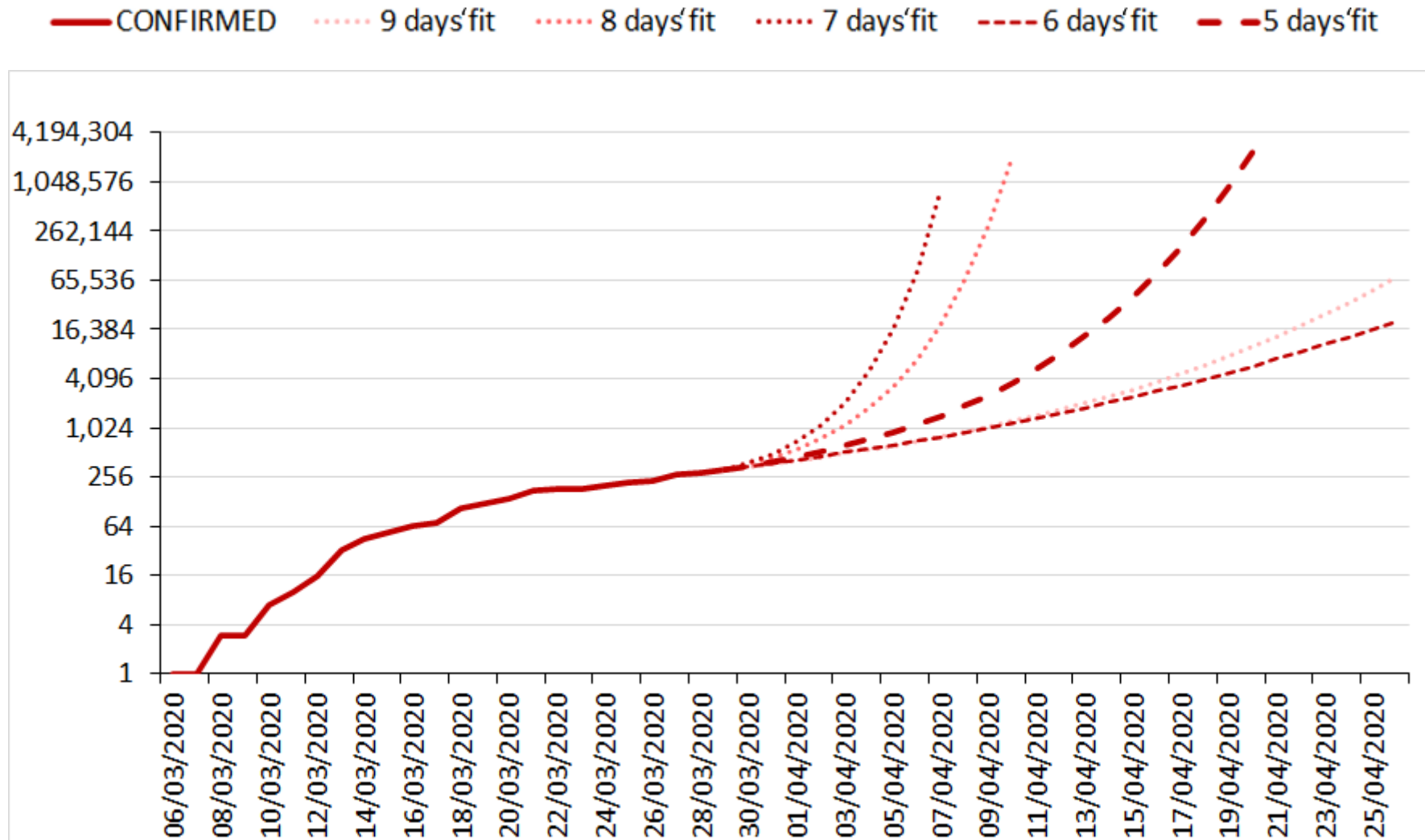
Data: The Johns Hopkins University, Politolog.com

Singapore



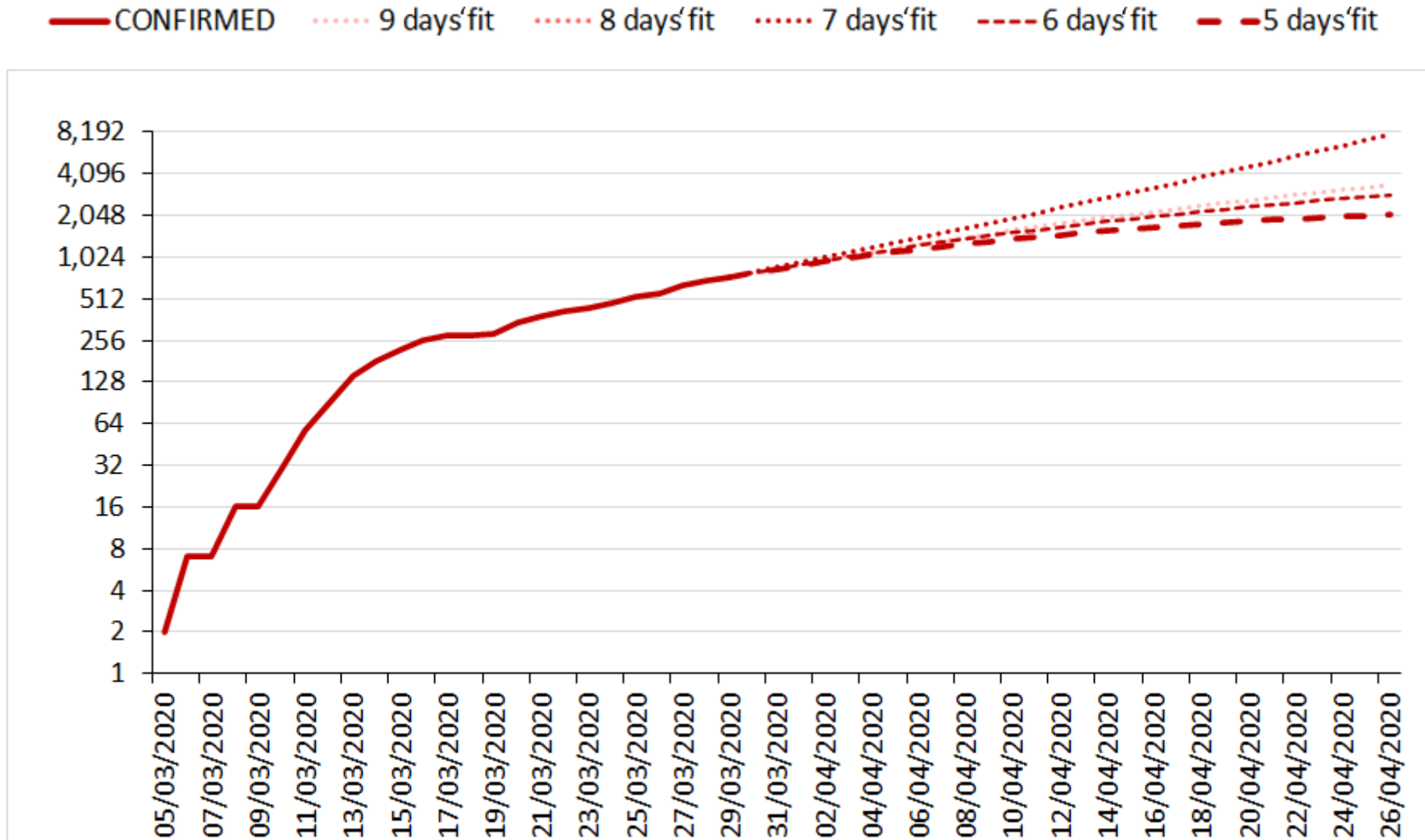
Data: The Johns Hopkins University, Politolog.com

Slovakia



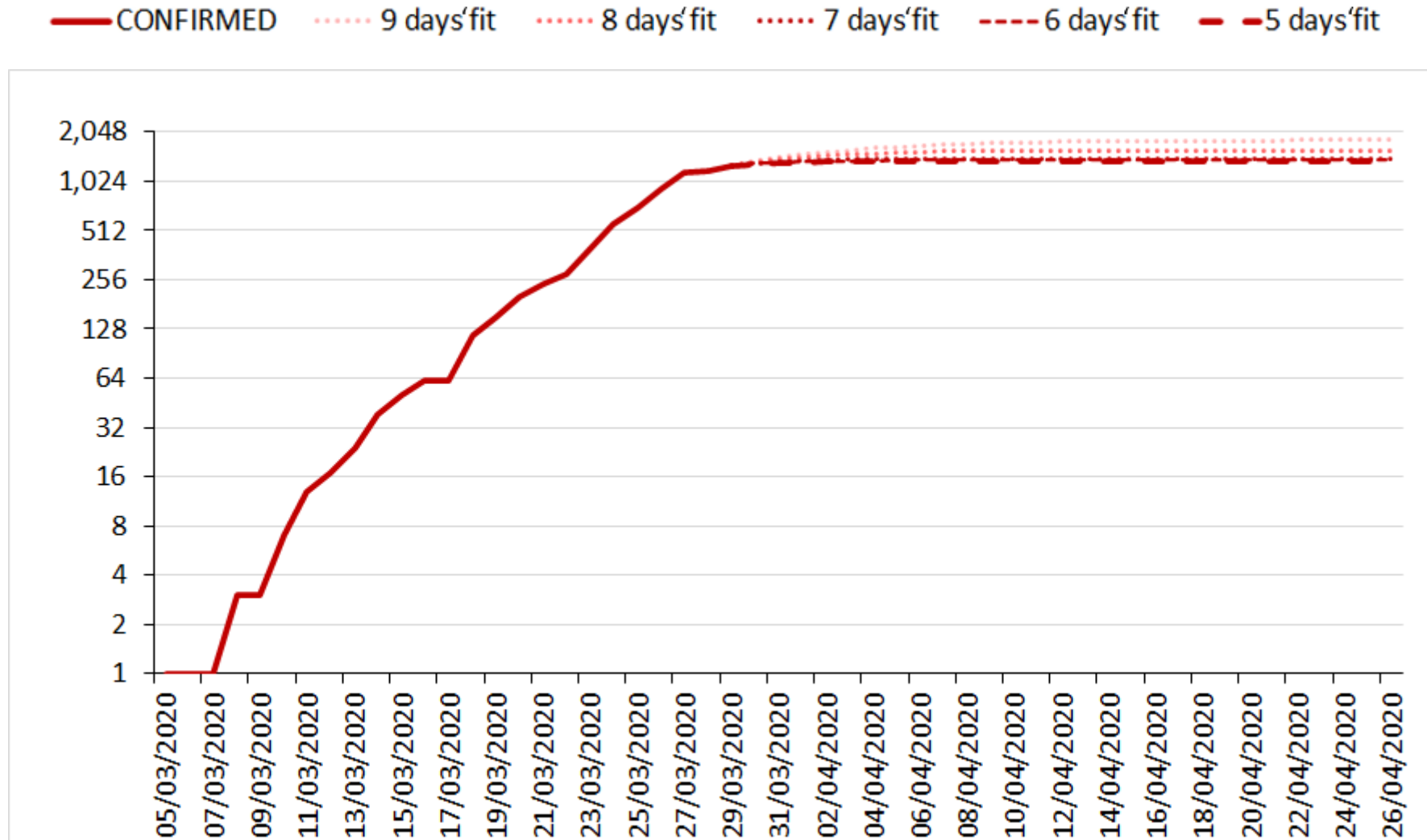
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Slovenia



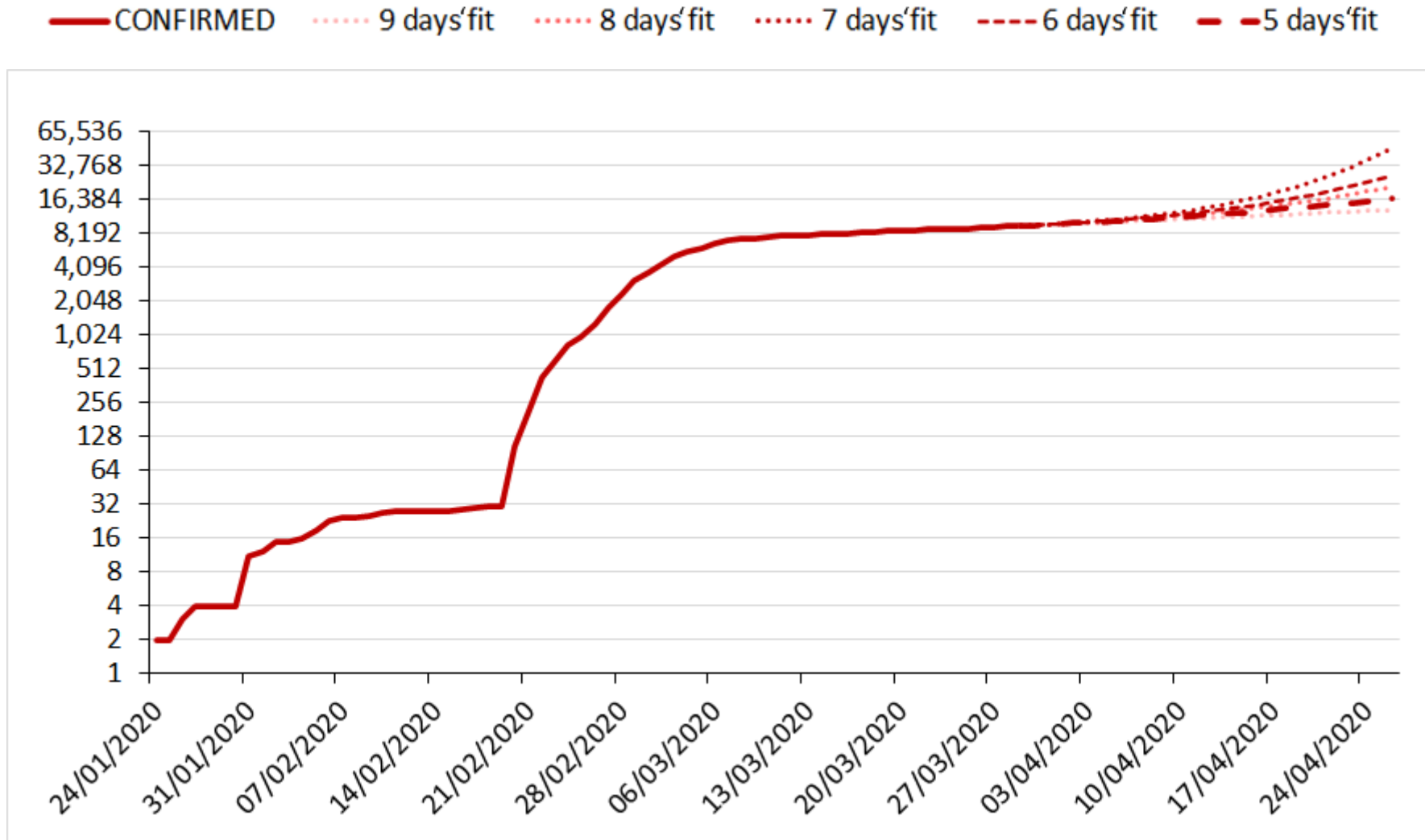
Data: The Johns Hopkins University, Politolog.com

South Africa



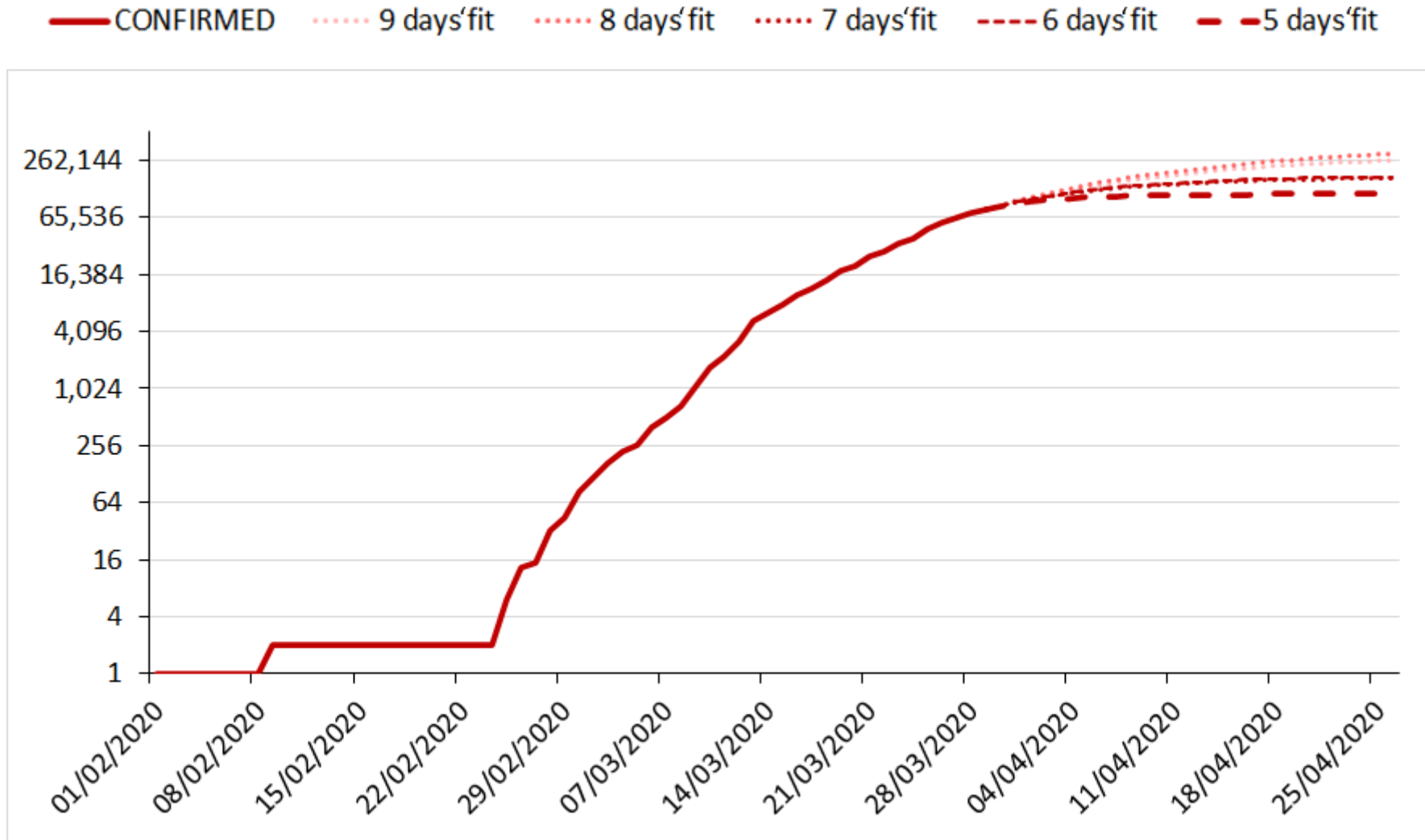
Data: The Johns Hopkins University, Politolog.com

South Korea



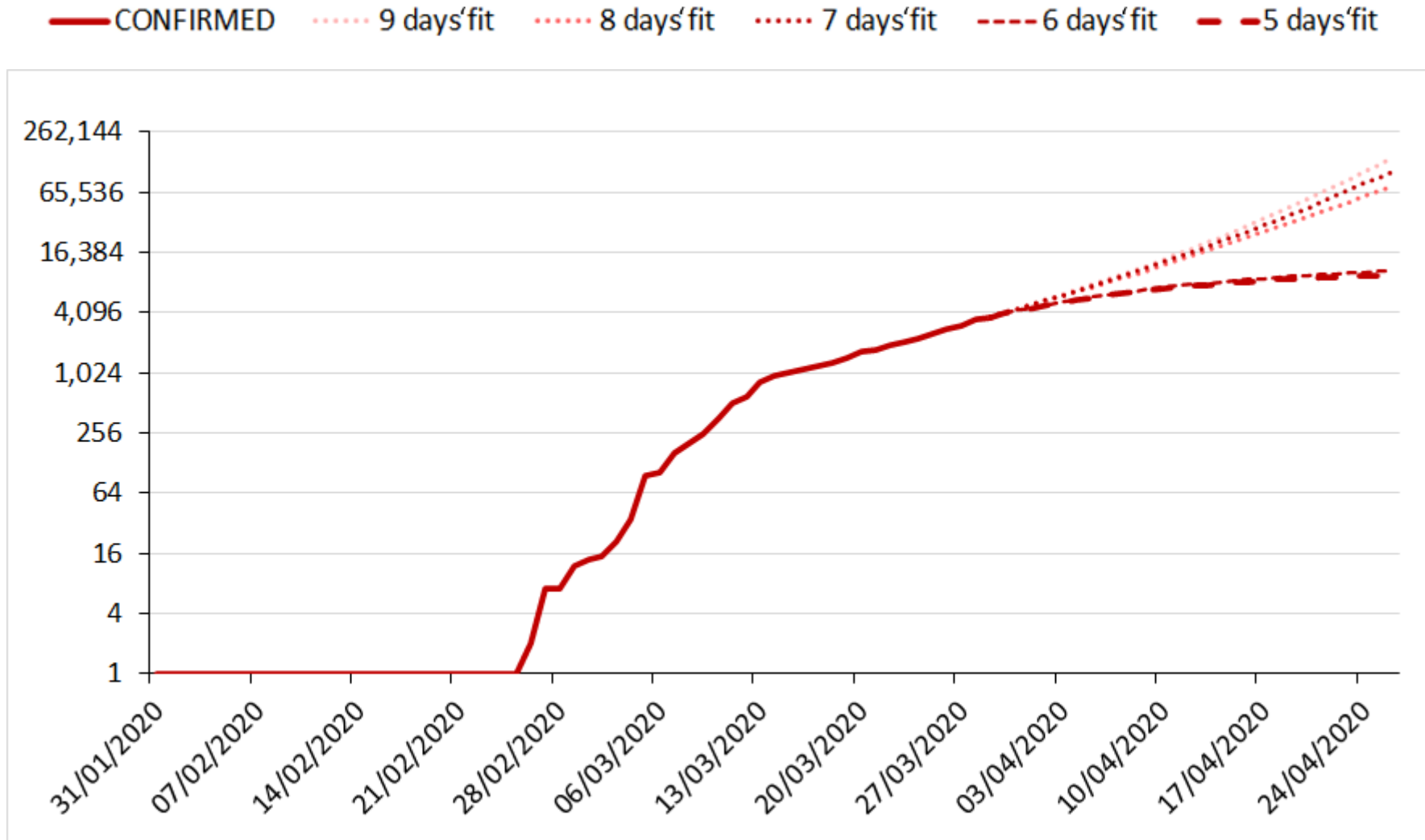
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Spain



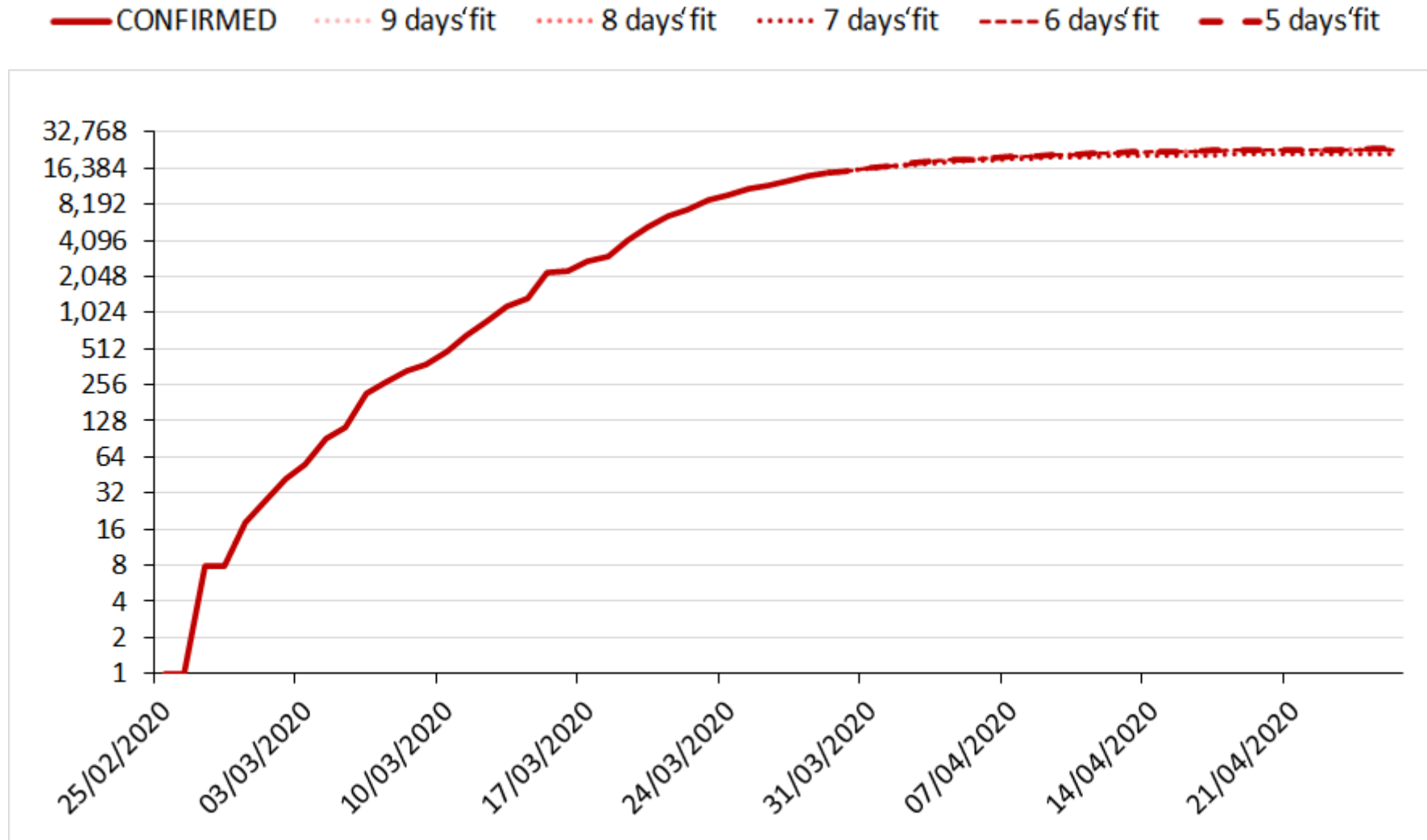
Data: The Johns Hopkins University, Politolog.com

Sweden



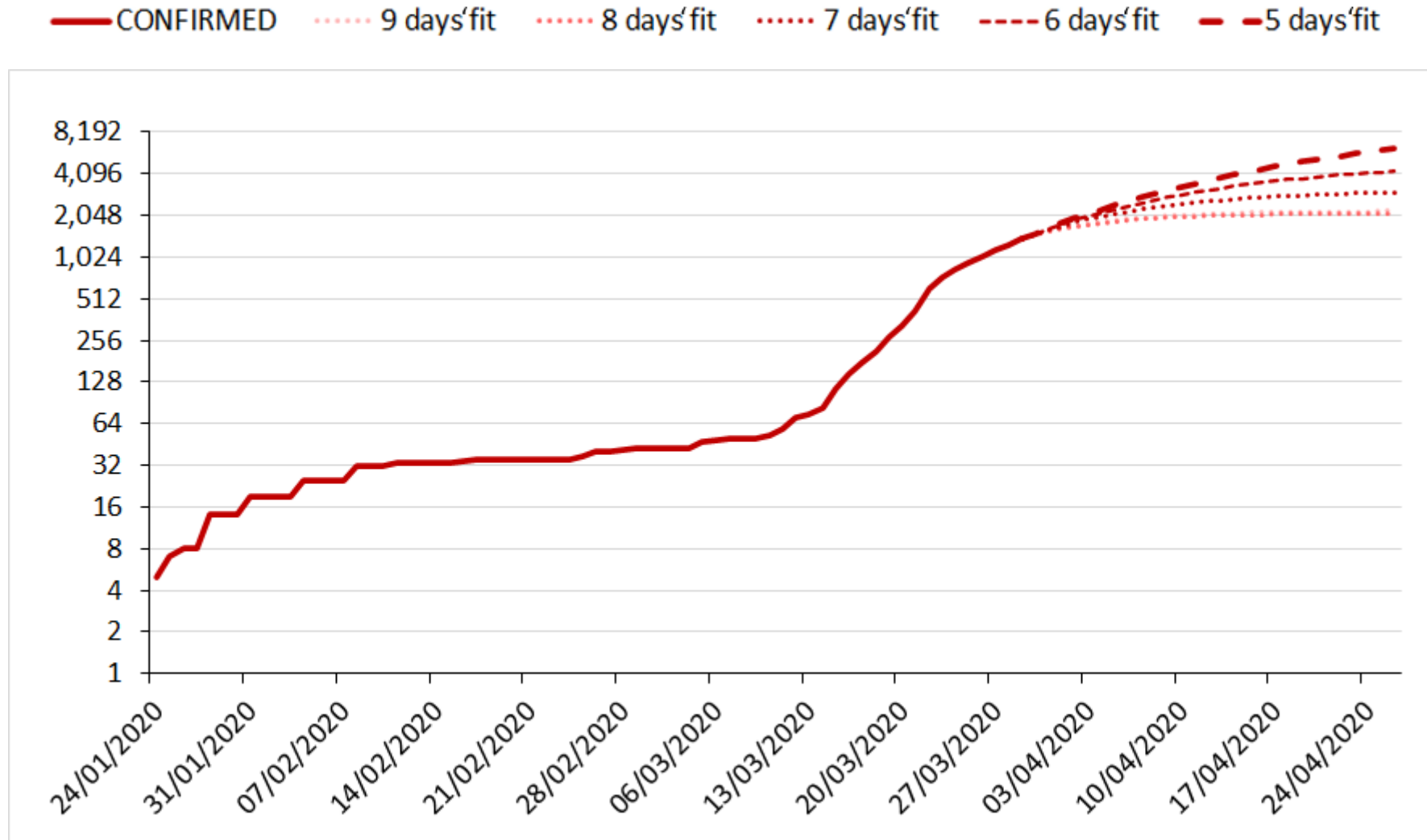
Data: The Johns Hopkins University, Politolog.com

Switzerland



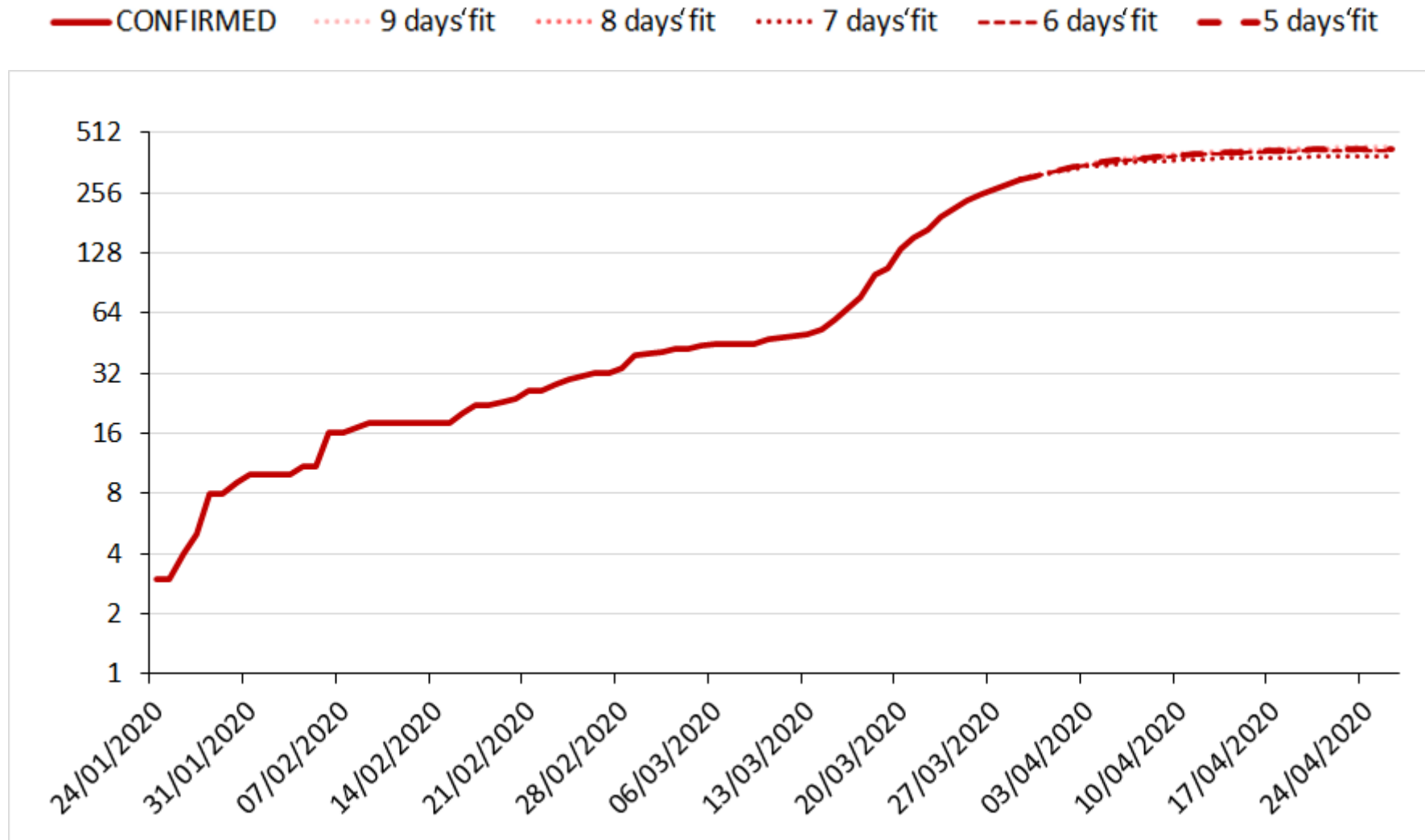
Data: The Johns Hopkins University, Politolog.com

Thailand



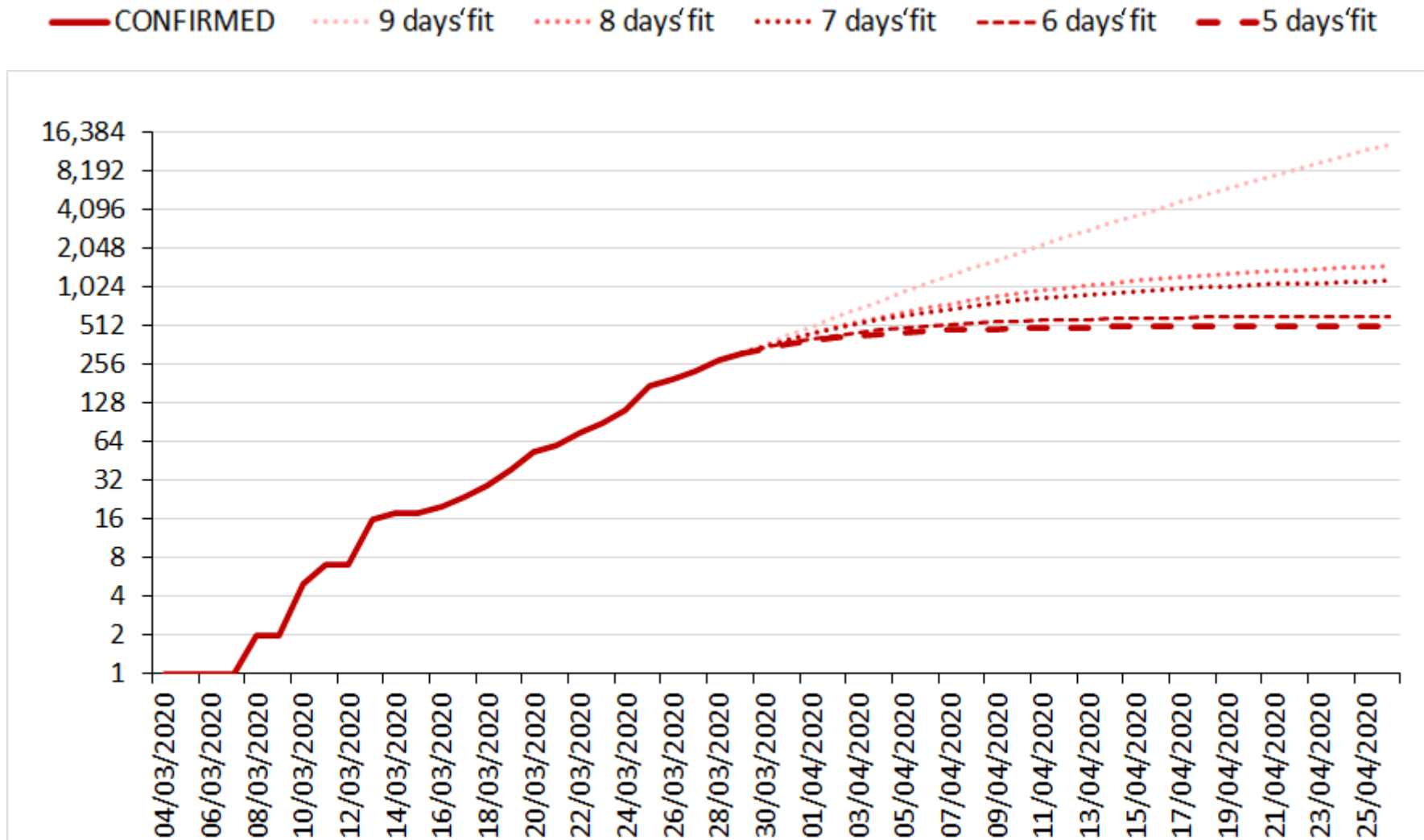
Data: The Johns Hopkins University, Politolog.com

Taiwan



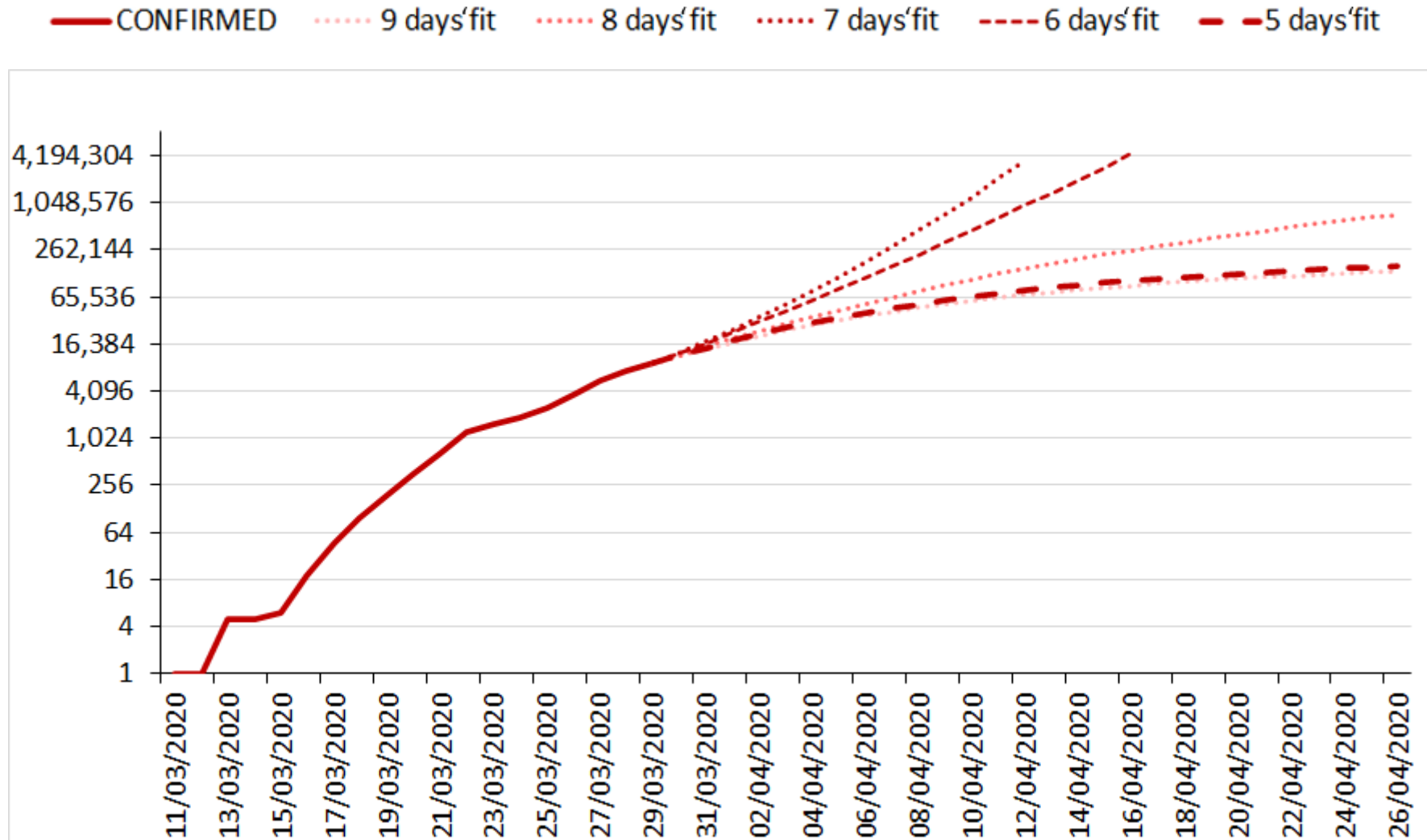
Data: The Johns Hopkins University, Politolog.com

Tunisia



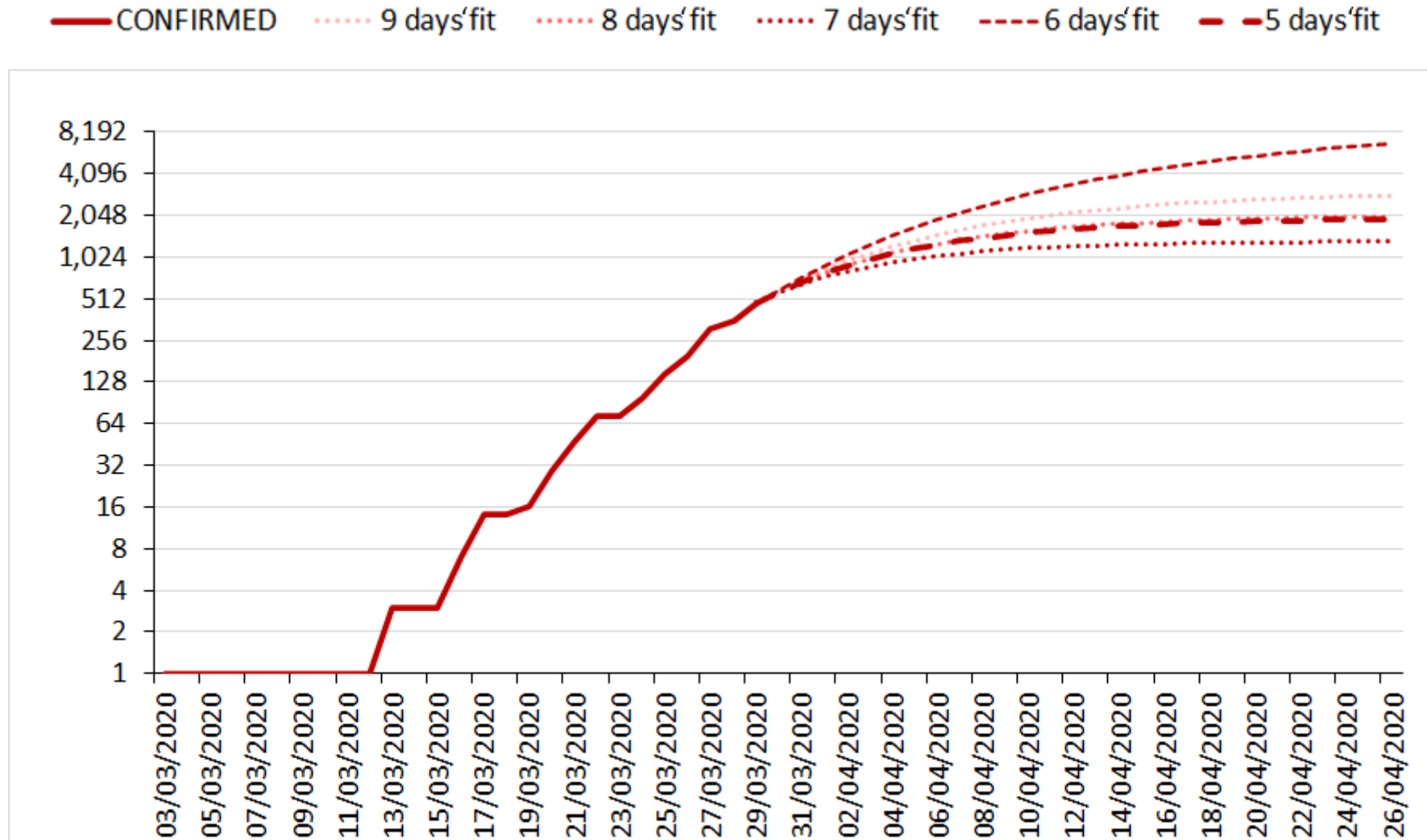
Data: The Johns Hopkins University, Politolog.com

Turkey



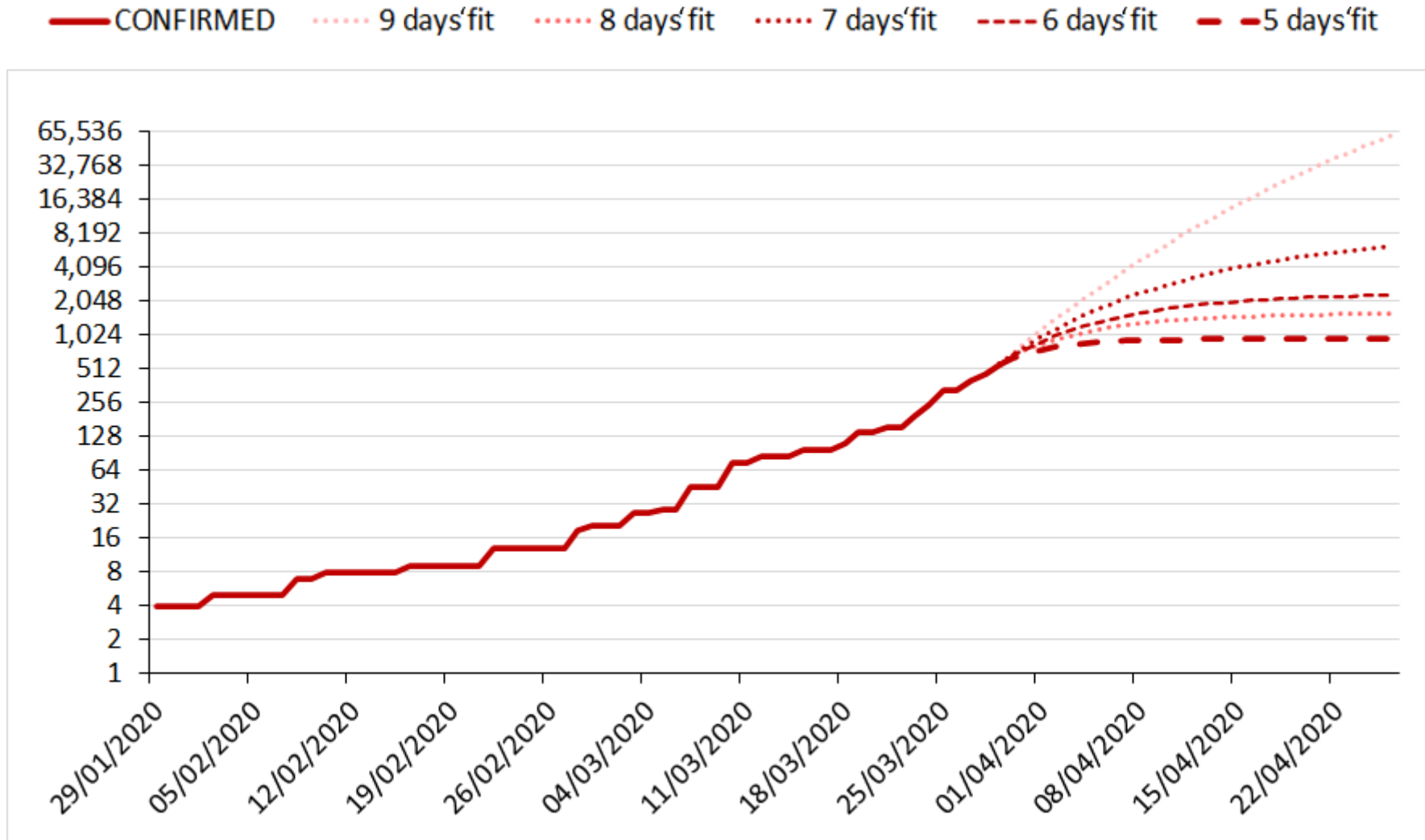
Data: The Johns Hopkins University, Politolog.com

Ukraine



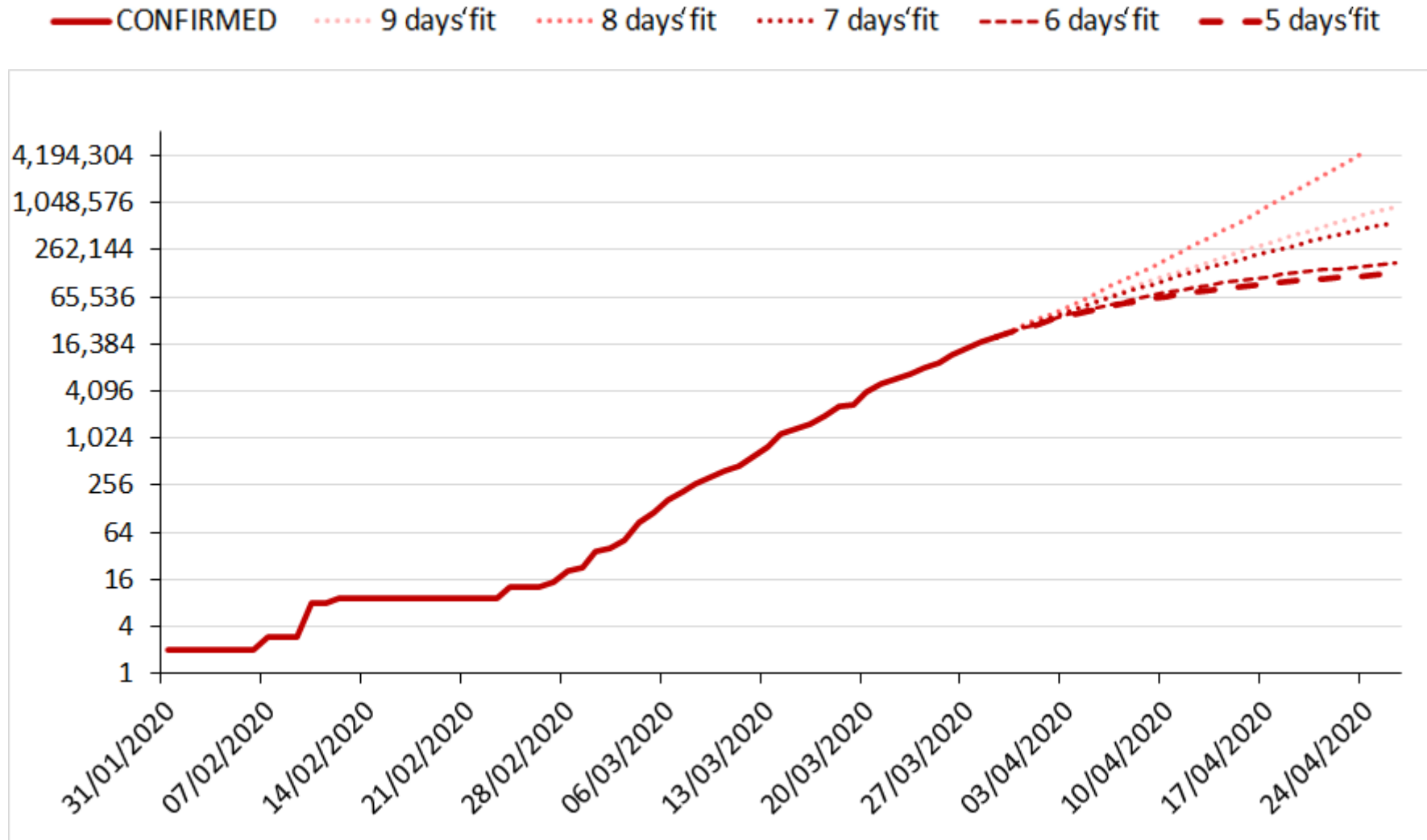
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United Arab Emirates



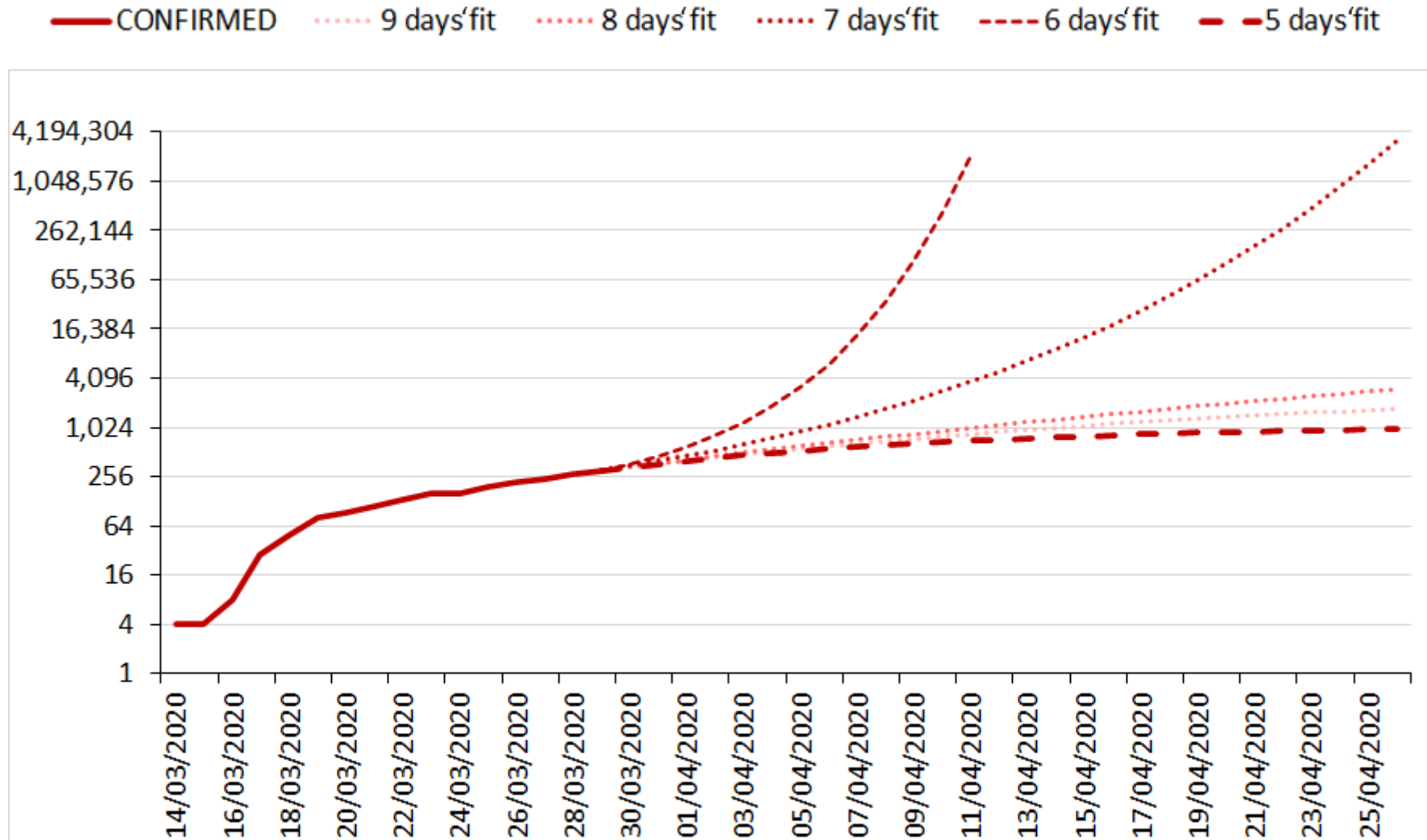
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United Kingdom



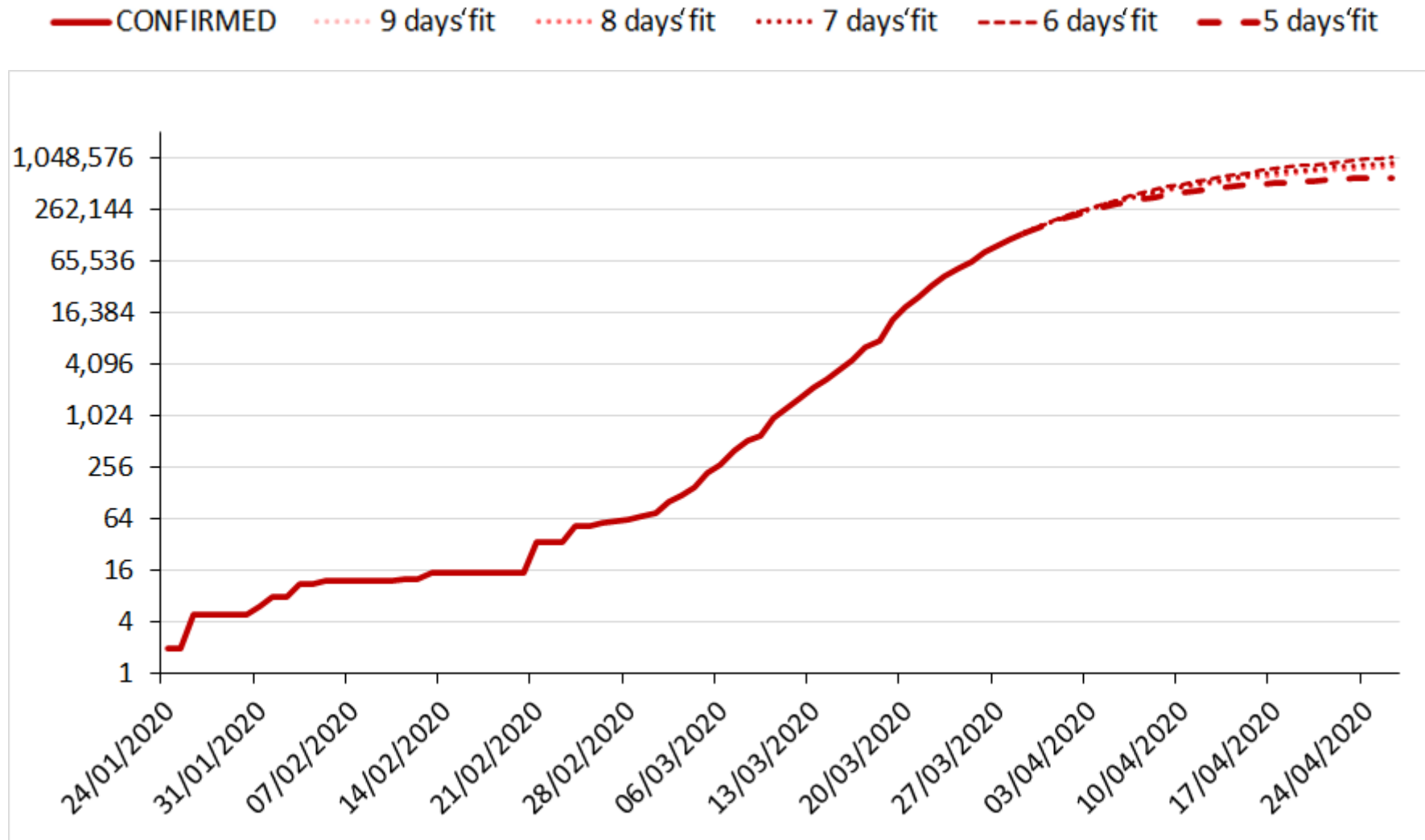
Data: The Johns Hopkins University, Politolog.com

Uruguay



Data: The Johns Hopkins University, Politolog.com

USA



Data: The Johns Hopkins University, Politolog.com



Gavekal Intelligence Software

Contact

Tel: +33 7 85 82 18 03

Email: ddarcet@gavekal.com

Paris Office

27bis rue Copernic
75116 Paris
France

Nice Office

Le Consul - 37 Boulevard Dubouchage
06000 Nice
France

www.gavekal-intelligence-software.com