

FGV IIU Flash Notes

Monitoring the Return to Normality in Six European Countries II: The Standstill Persists

(week ending on May 24, 2020)



FGV IIU International Intelligence Unit

Rio, May 27 2020.

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1. The long and winding road to recovery.

In the six European countries at stake -Belgium, France, Germany, Italy, Portugal and Spain- though no negative outcomes up to the last week considered in this Note took place, *none or rather very slow progress* has been seen as regards the decline of the structural dynamics of the epidemic. Repeating what has been said in the previous Monitoring: the epidemic will linger on for a few months, and vigilance must be on.

We continue to characterise this moment as a standstill; now even as regards the number of new daily deaths in some countries, with figures oscillating around a flat trend. Also as said one week ago, the path to herd immunity seems long and winding: care must not be relaxed, economic activities must of course resume -with due precautions, and the aggressive testing policy conducted by most of the countries must proceed, to give ever better measures of the amount of infected people in each country.

Data problems were a little less intense than before -now more concentrated on the deaths' statistic, and "corrections or return" to the previous trends, as regards the ratios indicator, have been as expected, strengthening that the standstill does not mean a worsening of the situation.

The results for the two monitoring proposals [put forward in Flôres (2020)¹ and already exploited in FGV IIU (2020a, b)²] are discussed in sections 2 (the ratios of new daily cases) and 3 (simple regressions using the most recent daily deaths figures). All data come from the *worldometers.info* public site. Section 4 concludes.

2. Evidences from ratios of new daily cases.

¹ *Corona Data Analyses: Looking for Signs of Recovery in Italy and Spain*, FGV IIU Discussion Papers DP 02/20, R. G. Flôres Jr., with the assistance of L. Garnitskiy, 2020; Rio de Janeiro: FGV International Intelligence Unit. Two statistical procedures to be used in the monitoring of the decline side of the contagion curve are described.

² *The 19th Week Effect: Prospects for Flexibilization in Six European Countries*. FGV IIU Flash Notes; May 7, 2020. Rio de Janeiro: FGV International Intelligence Unit; *Monitoring the Return to Normality in Six European Countries I: A Stand still with Positive Signs*. FGV IIU Flash Notes; May 20, 2020. Rio de Janeiro: FGV International Intelligence Unit.

As mentioned and explained in previous Notes³, the ratio of new daily cases, at a *basic evolution period of the epidemic*, may be assumed to be a function of two parameters deeply related to the dynamics of the epidemic process within a given community: the average number of people infected by a person with the virus at the start of the period, and a synthetic measure of the proportion of infected people who, for a variety of reasons, may be considered outside the contagion group, at the end of the period.

The “basic evolution period of the epidemic” has been chosen as 14 days.

The ratios should (and must) change along the evolution of the epidemic, notably its decline, signalling how positive the policy package that has been implemented and the return to normality are being. They must reach values below 1 and then continue to (ideally and steadily) fall.

However, various sources of noise disturb the series⁴ and, during the period under analysis, a major one has been the more aggressive and encompassing testing policy, correctly applied in many countries, in order to better check the feasibility of the return policies and prevent surprises. This reduces underreporting on contagion -a positive outcome- but by inserting the ‘newcomers’ uncovered by the new dynamics, different from the one prevailing beforehand, it pushes up the daily new cases data and may produce peaks in our ratios *-solely due to this improved measurement of contagion, and not to a surge in the epidemic.*

Other issues affecting data reliability and quality may also take place, like governmental revisions of the series, particularly contagion and deaths data. Our public data source, the *worldometers.info* site, is then forced to adjust its corresponding series, sometimes even displaying negative values.

Exhibit 1 shows the ratios for the six countries -Belgium, France, Germany, Italy, Portugal and Spain- for the period from April 30 to May 10. The *series of daily (two-weeks) ratios*, with a last observation on May 10 (two weeks more, one arrives at May 24, the last observation), is shown in each graph, together with that of a five-days moving median, a convenient way to filter the noise in the original series.

³ See footnote 2.

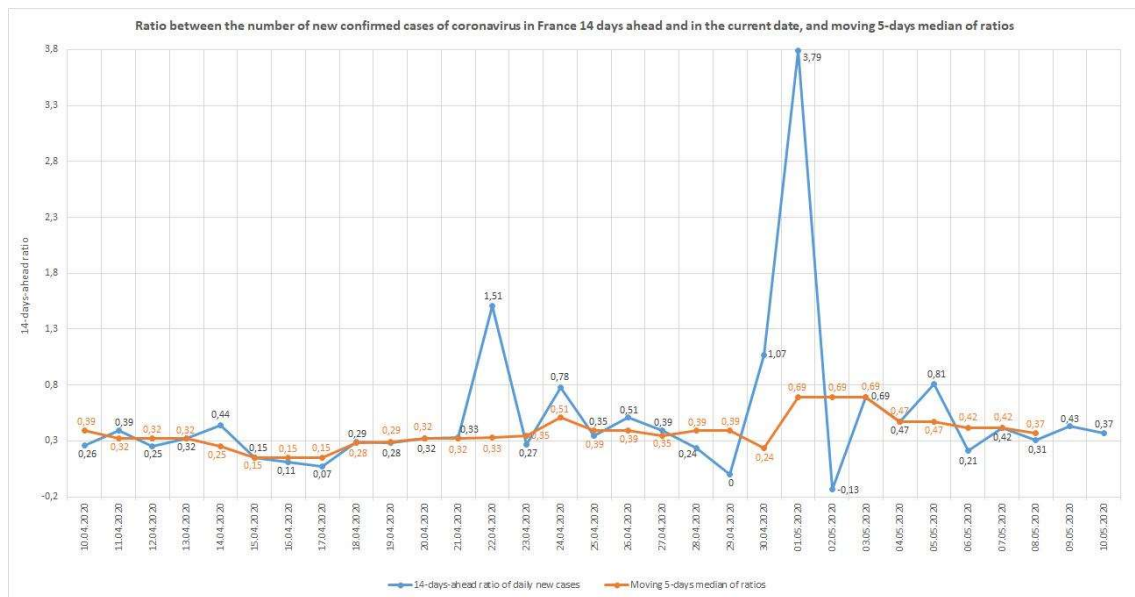
⁴ It is neither the case nor the object of this Note to dwell on these sources here; some has been said on them in the works previously cited.

We present a short analysis of this updating⁵:

France – after coping with the high outlier on May 1, the series -as predicted in the previous Monitoring- is returning to its normal level, but no decrease has taken place yet;

Exhibit 1: Ratio between the number of new confirmed cases of coronavirus 14 days ahead and in the shown date, starting on April 10, 2020 (actual values and five-days moving medians).

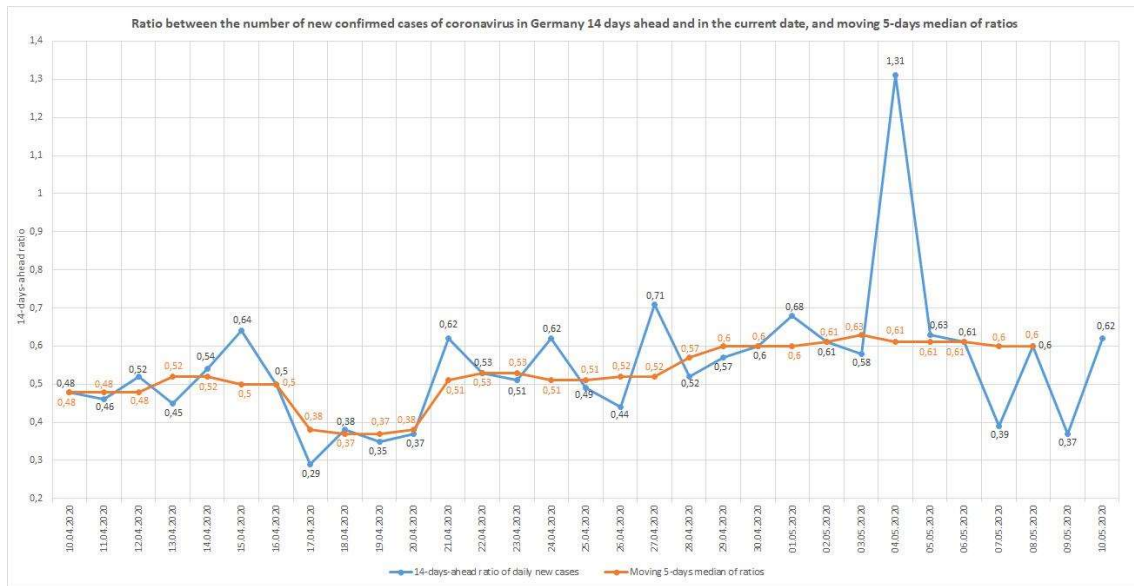
1.a) France



Germany – same as France, with a significant outlier on May 4, and a steady return though at still high levels (0.60);

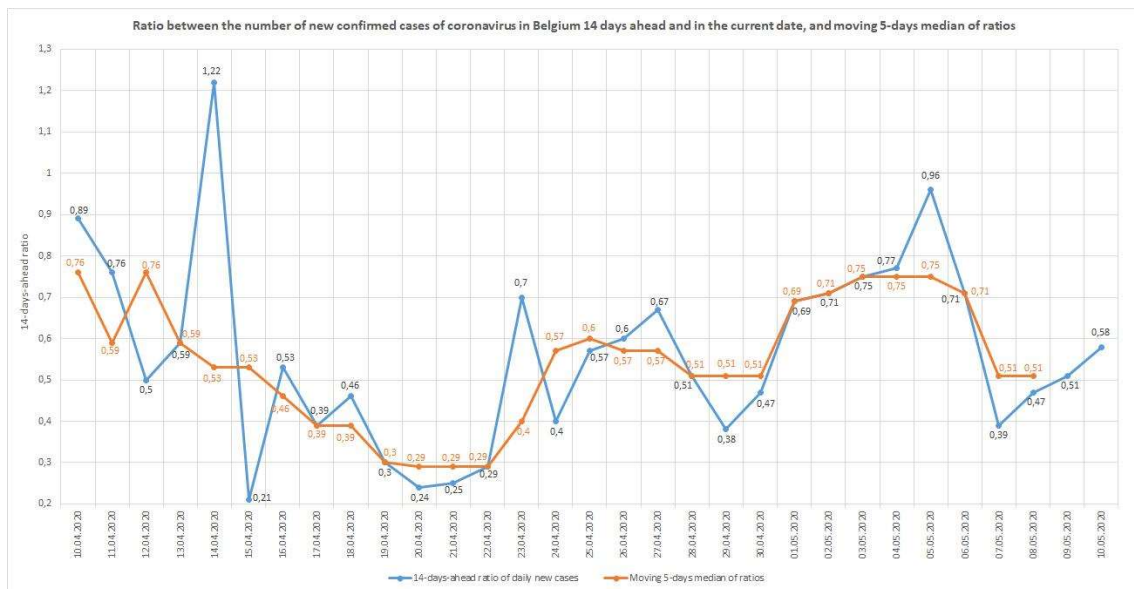
1.b) Germany

⁵ See footnotes 3 and 4. Analyses usually refer to the smoothed, moving medians series; when a needed reference to the original ratios may cause confusion, the qualification ‘crude ratios’ is used.



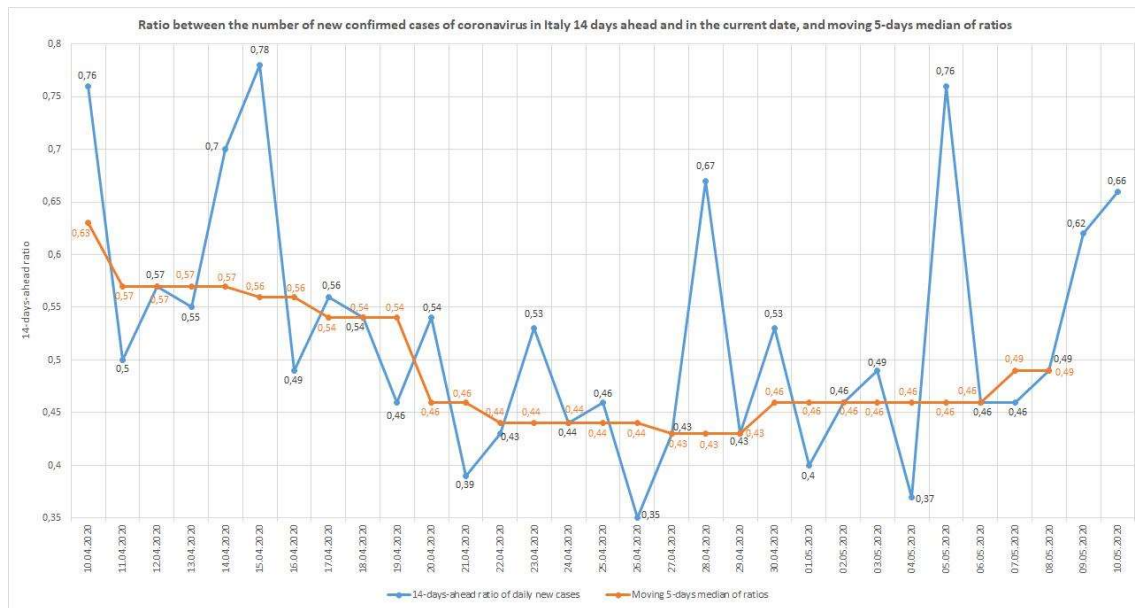
Belgium – same pattern as the previous two: after a sequence of higher ratios -also probably due to testing- levels came back to “normality”, though again still high (0.51);

1.c) Belgium



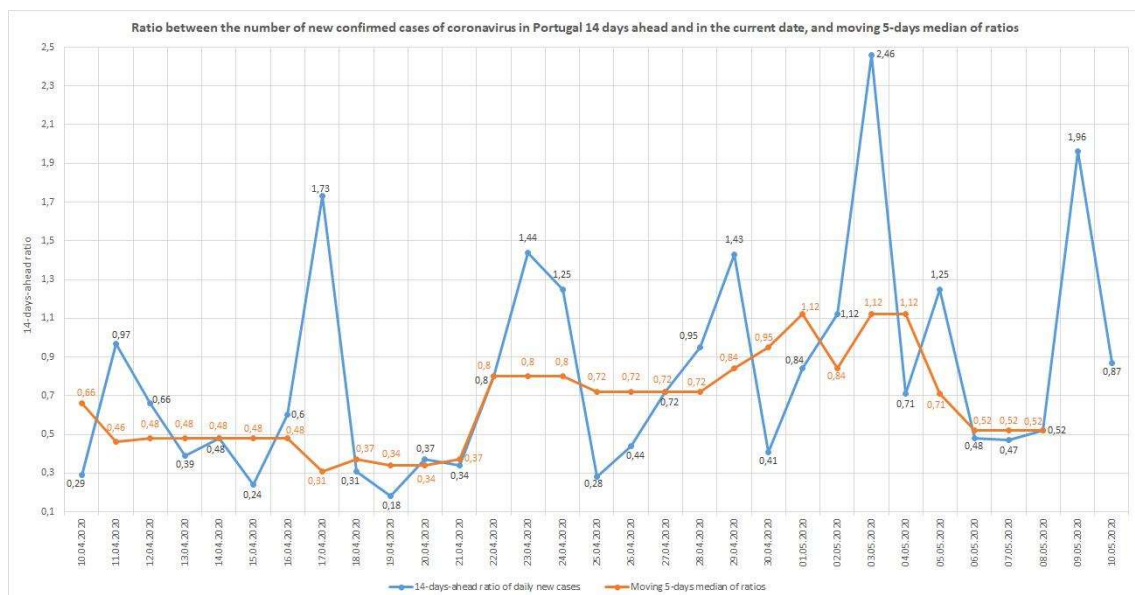
Italy – continuation of the stable behaviour, easily dealing with the May 5 outlier. Ratios still somewhat high (0.49);

1.d) Italy



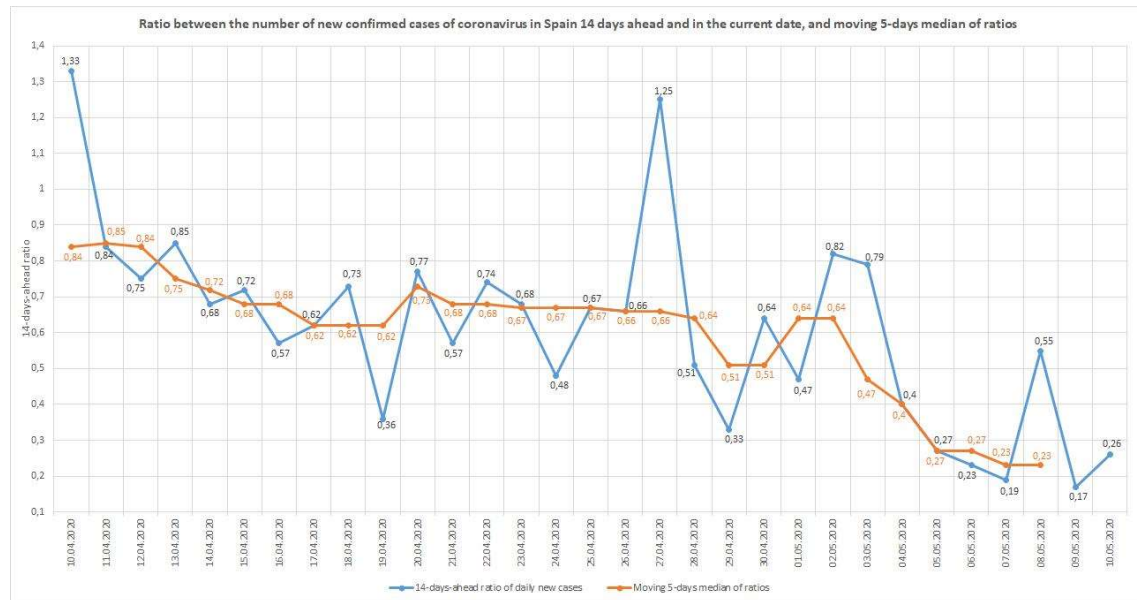
Portugal – following the pattern of the first three countries, passed a period of higher values (here, surely due to the targeted testing policy (nursing homes)), before returning closer -from above- to previous levels (0.52);

1.e) Portugal



Spain – continues to display a model behaviour, being the only of the six that exhibits a steady decline of the ratios, already at values around 0.25.

1.f) Spain



3. Data on daily deaths.

The second approach tries to perceive a decreasing trend in the daily deaths, using the 21 more recent observations, and fitting a straight line to them. The regressions must fulfil minimal goodness-of-fit criteria: a R^2 of at least 0.45, and coefficients significant at least at 5 per cent.

Exhibit 2 shows the straight-line graphs for all the six countries⁶, in the same order of the previous Exhibit. In overall terms, improvement continues to take place, despite *hard to explain outliers* and, for some -notably Portugal, the permanence of plateaus for the daily deaths.

For each country, the so-called pessimistic line is also shown; obtained by subtracting two standard-errors to the intercept and adding two to the angular coefficient. The point this line cuts the horizontal axis gives an idea of a notional day when zero

⁶ Basic statistics on the regression results may be demanded at npii@fgv.br.

deaths will be observed⁷, but given the number of outliers still prevailing we still haven't performed this exercise here. For many they were rather flat and for two, Portugal and Spain, there was a reversal in the signal of the angular coefficient.

A brief summary for each country follows:

France – still plagued by outliers, though decline *may* be happening again;

Germany – deaths still oscillating a bit too much -suggesting recording problems-, but the decreasing trend persist. The pessimistic line is nearly horizontal, though;

Belgium – slowly decreasing trend continues;

Italy – showed a volatile pattern in the last week, but evidence of decline continues, with a last value of 50 deaths;

Portugal – continuation of the stable, oscillating pattern, with daily deaths between 12 to 16 people;

Spain – a surprising outlier on May 22 (688 deaths) -needing explanation- disturbed an otherwise encouraging declining pattern. As a result, the basic fit is nearly horizontal.

4. Summing up.

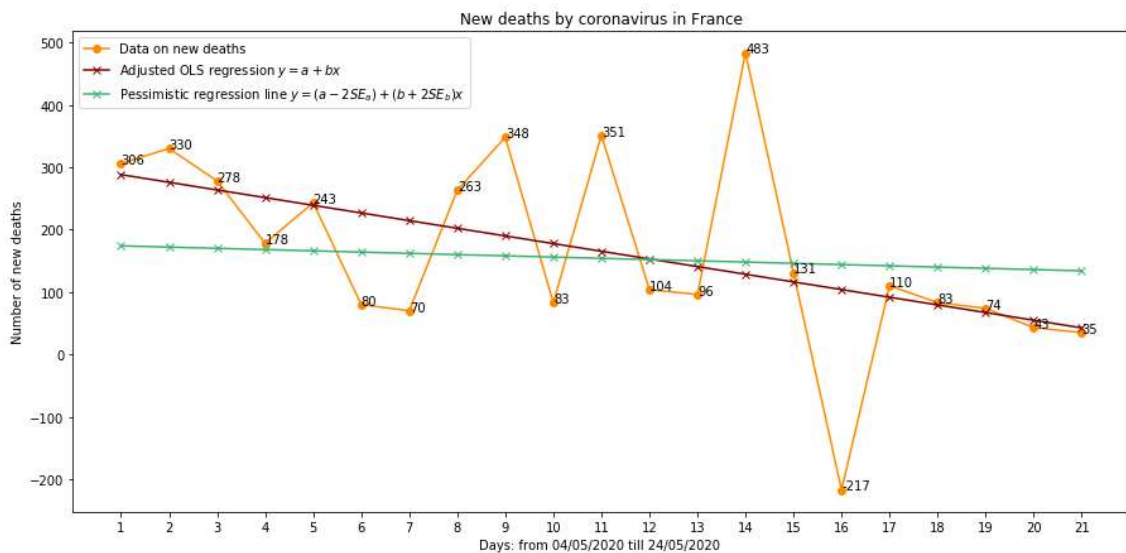
The performance of the two ancillary indicators has basically shown that, despite multiple outliers in the original data, all countries but Spain -which presents a textbook decline pattern- are roughly in a stable situation, confirming the very slow pace of the epidemic. If the controlled return to normality has not worsened the situation at all, the epidemic however follows a slow, though consistent dynamics.

As, the average contagion rate is already surely below 1 in all countries, new daily deaths continue to decrease, but again with little weekly progress; the country where this is more evident being Portugal, where daily deaths remain at the same level.

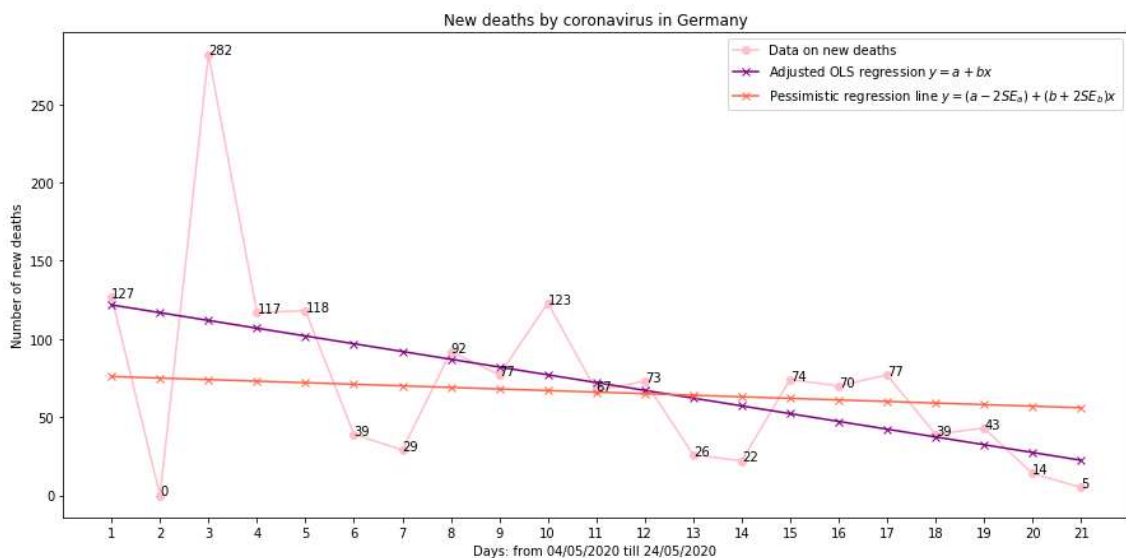
⁷ For more on this idea see the reference in footnote 1. The adjective 'notional' is very important, because this is a mere extrapolation from the curve, a "zero-deaths day" seeming not feasible yet. Nevertheless, as "the period till normality" in section 2, it provides an idea of a date when things will be better.

Exhibit 2: The regression lines for the six countries, using daily deaths data from April 27 to May 17. The pessimistic line is also shown in each graph

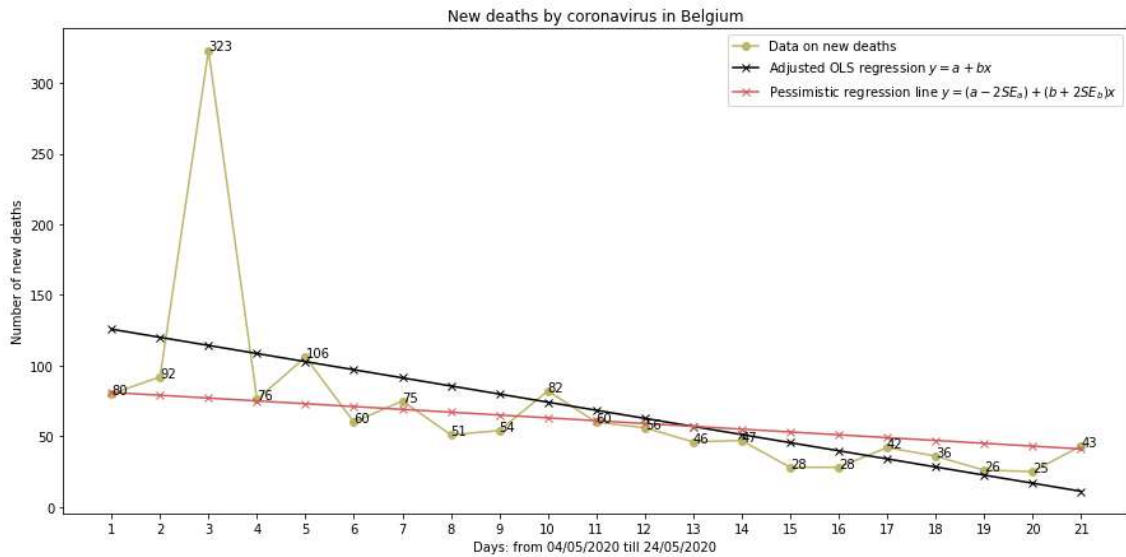
2.a) France – notice the odd value for May 17 (483 deaths), already present last week, and the negative outlier (-217) on May 19. The pessimistic line is nearly flat (i.e., horizontal);



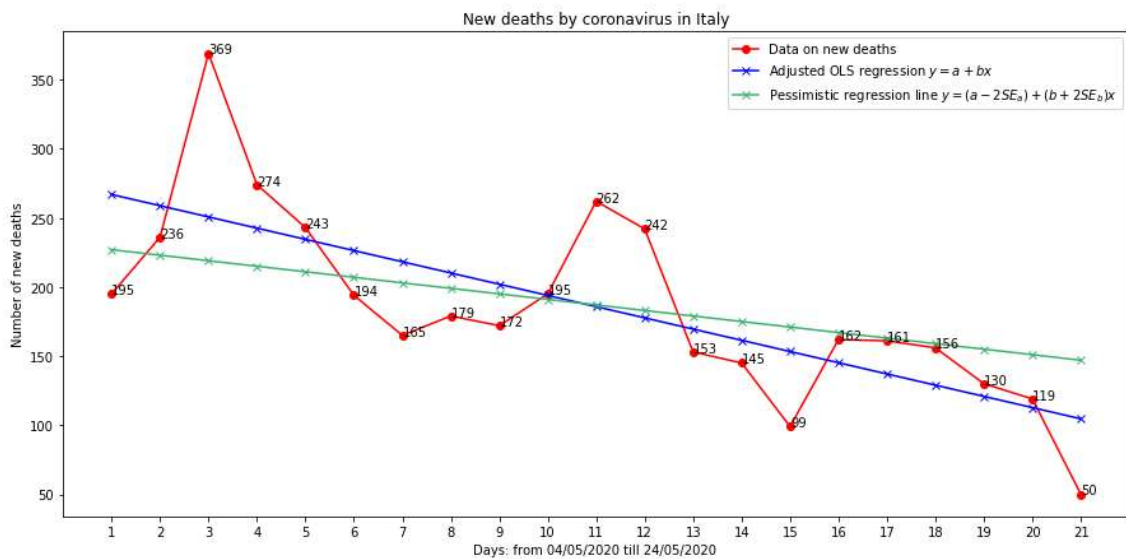
2.b) Germany – the “pessimistic line” is nearly horizontal; deaths continue to oscillate, though less than in the previous week.



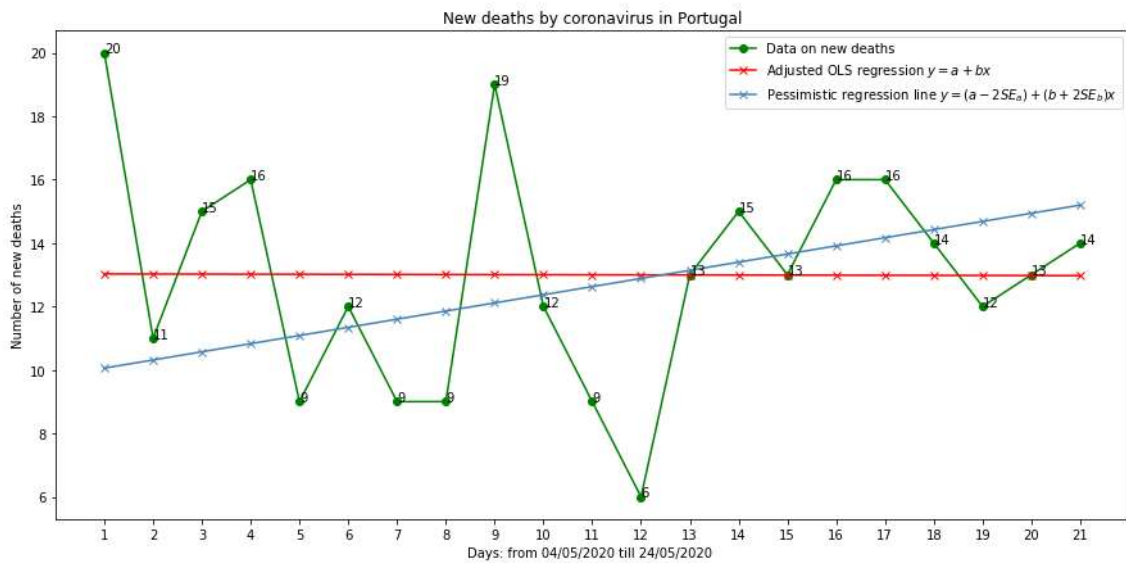
2.c) Belgium – luckily, no new outliers after the striking 323 value on May 6, though deaths also oscillate as in Germany.



2.d) Italy – slow decrease;



2.e) Portugal – daily deaths are already low, but a flat “trend” persists (senseless pessimistic line).



2.f) Spain -results disturbed by odd outlier on May 22 (688 deaths); apart from it the decline continues, though slowly.

