The complexity of the dating exercise in a pandemic based recession

Keywords: business cycle, growth cycle, turning points dating, non-parametric methods, diffusion, synchronisation.

1. INTRODUCTION

The Eurostat's business cycle clock includes an historical dating, displayed in the upper part of the screen, in the form of a GDP graph highlighting the sequence of past turning points. This part presents the outcome of a complex dating exercise carried out on a quarterly base simultaneously on the acceleration, growth and business cycle for the euro area and its member countries. With the present COVID-19 driven global economic crisis we are facing new difficulties to date the euro area's and member countries cycles since this shock is totally economically exogenous and modifies the cyclical patterns with respect to the previously observed cyclical development. Such a situation put further in evidence the need for avoiding a purely mechanical/statistical dating, whatever the adopted dating methodology is, either parametric or non-parametric. It certainly emphasizes the 3 D's criteria to assess a cyclical movement: duration, deepness and diffusion. For the first time, duration is the main question while deepness, diffusion and synchronisation are less of an issue. For high frequency series, in the first semester of 2020 the shock has been very brief and deep for monthly series in the euro area; we often see a deep but short dip over two months, more similar to an outlier than to a recessionary movement. For statistical reasons, the negative impact lays over two quarters because the lockdown measures were taken over two quarters (partially March, April and partially May). Had the lockdown generally started in April, the quarterly impact would have been huge and over only one quarter, like in China. This paper aims at providing some methodological and empirical reflections on the difficulties of an economically and statistically sound dating exercise in a very specific crisis like the one we are actually experiencing. We start from our dating approach to show how the pandemic is making the whole exercise more complex, requiring expert assessment in statistical dating.

2. METHODS

Our approach for dating the cyclical turning points is essentially non-parametric and based on a combination of statistical evidence and expert judgement. On the opposite, parametric approaches rely more on mechanical dating of past, present or even future cyclical turning points. More details on our approach are provided in Anas et al {1}. For this reason, dating needs more past time points and implies then some delay, which may be criticised as a drawback. With the present pandemic, the consequent economic recession is quite easy to date. The question is the possibility of a double-dip recession, in particular in countries more impacted by the pandemic. The dating of the growth cycle is more complex because of the uncertainty about the change of long-term trend growth rate and the short-term sensitivity of filters to huge serial movements. On a provisional basis, it is more relevant to consider the last data as outliers.

2.1. Methods for dating the business cycle

How can we distinguish or combine the pre-pandemic cyclical development and the pandemic impact? For example, data gave an indication of a pre-crisis industrial recession in the euro area (mainly German-driven) although industrial recessions not always turn in economic recessions. Would the dating exercise confirm this indication without the Covid-19 pandemic? How would this reflect in the business cycle dating? Without a pandemic crisis, we do not know how the economic situation would have evolved in 2020. The main question here is: are we observing a purely pandemic driven crisis or a combination of a pandemic and an economic recession? The evidence is that we are observing a profound recession generally attributed to the Covid-19 pandemic. The dilemma of analysts at this stage is how far to go with such economic thinking to integrate or even modify a purely statistical dating statement.

2.2. Methods for dating the growth cycle

How to compute the growth cycle? Determining the cycle is linked to determining the trend component and, in the present situation, there is a strong uncertainty about the trend pattern. The main problem consists in deciding if the shock has to be considered "permanent" and consequently attributed to the trend of "transitory" an attributed to the cyclical or even the irregular component. The problem is not trivial since it substantially changes the pattern of both trend and cyclical components with consequences in terms of analysis and policymaking. Another relevant aspect is that, due to the moving average structure of most detrending filters, the hypothesis on the allocation of the shock can also affect the past behaviour of the components (before 2020) by producing unrealistic movement which need to be carefully monitored and possibly corrected.

3. RESULTS

At this stage is very difficult and risky providing results even if preliminary ones because the situation is rapidly and sometimes unexpectedly evolving. Here we are concentrating on one of the most clear and interesting aspects of this recession meaning the perfect degree of cyclical synchronization.

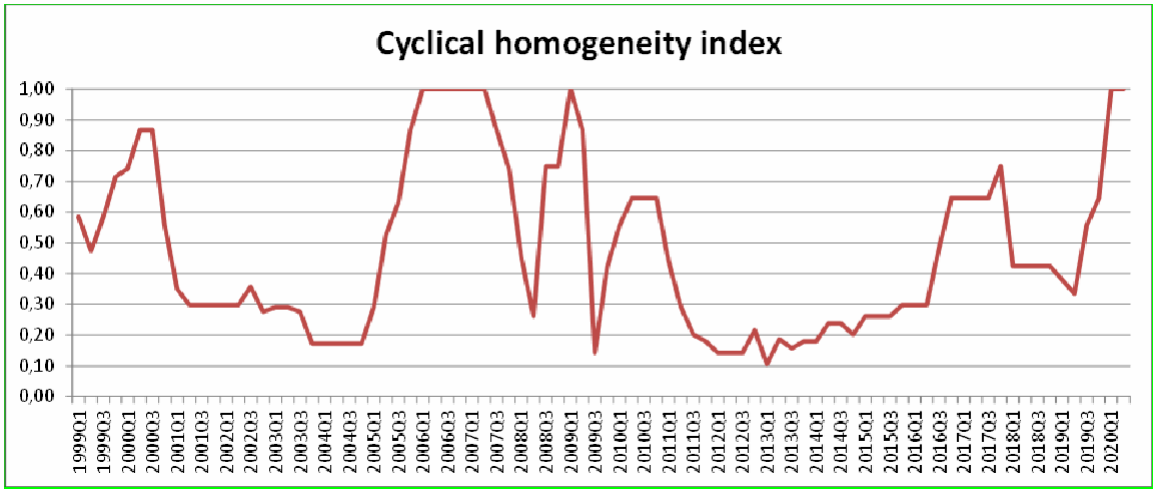

Figure 1. Cyclical convergence

The index of cyclical similarities in the euro area was introduced in Anas et al {2}. In the period spanning from 2013 Q1 to 2017 Q4, the index had been constantly increasing (from a low 0.11 to 0.75) as more and more countries were growing (90% at the end of the period, showing a cyclical convergence in terms of growth). The index receded thereafter to reach

a 0.34 low in 2019 as some countries were starting to slow down. Then, the index ofcyclical similarities began to increase again as more and more countries were slowing down until the coronavirus driven recession pushed the index to 1 in 2020 Q1 and 2020 Q2, showing a perfect cyclical convergence in terms of recession.

4. CONCLUSIONS

In this paper, we have shortly discussed from a methodological and empirical point of view some issues and problems, which make the dating exercise more complex in the ongoing pandemic driven crisis. Even if it is still too early to identify and propose sound solutions, we consider relevant to analyse such issues to identify in which directions a dating exercise could evolve in the forthcoming months. Such difficulties to recognize a recession are reflected also in the April 2020 CEPR dating Committee questioning about a possible double-peak expansion in the euro area. This Committee has recently admitted the occurrence of a recession.

5. REFERENCES

[1] J. Anas, M. Billio, L. Carati, L. Ferrara, G.L. Mazzi Chapter 15, Handbook of cyclical composite indicators ED by G.L. Mazzi and A. Ozyildirim – Eurostat 2017.

[2] Anas J., Calès L., Mazzi G.L. « Cyclical dissimilarities among the European economies: the effect of the great financial and economic crisis" in "Eurona" – Eurostat 2016