Summary for non-specialists
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An early-detection index of fiscal stress for EU countries

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The financial and economic crisis, that started late 2007 with the collapse of the subprime mortgage market in the US and spread to the global economy in 2008, has generated renewed interest, especially among policy-makers, in early-warning systems that could help identifying fiscal and macro-financial vulnerabilities potentially triggering risks. The early detection of risks is indeed crucial to allow the effective coordination of early policy responses in a world of economies that are more and more interconnected and globalised.

Clearly, one of the lessons taught by the crisis is that fiscal and macro-financial imbalances cannot be looked at separately, but should rather be jointly analysed and monitored. Indeed, fiscal imbalances can negatively affect macroeconomic conditions and financial stability, and macro-financial imbalances can quickly turn into fiscal imbalances. These interconnections can certainly not be neglected in the context of an early-warning system for fiscal stress, object of our analysis in this paper. Risks of a fiscal nature can only be detected by jointly taking into account the two dimensions (fiscal and macro-financial), in full recognition of the role played by macro-financial variables in the run up to fiscal crises. This would indeed call for widening the scope of observation beyond fiscal variables when monitoring fiscal risks.

Against this background, this paper presents an early-warning index of fiscal stress (so called "S0") based on the "signals approach". Along the lines of other contributions to this strand of the literature, we rely on a certain definition of fiscal stress, based on which past episodes are identified, so as to allow for the analysis of variables' behaviour ahead of those episodes. We then select a set of variables identified as playing a role in the run up to fiscal stress events; we choose the horizon over which the fiscal stress prediction would extend; and we endogenously determine critical thresholds for fiscal risk for each of the variables considered, as well as for the composite early-warning indicator of fiscal stress constructed with the individual variables.

While previous contributions on early-warning indicators of fiscal risk based on the signals approach mainly relied on fiscal variables to predict fiscal risk, our paper stresses the importance of incorporating in the analysis both fiscal and financial-competitiveness variables. Our original contribution indeed mainly lies in the introduction of competitiveness-financial variables, some of which common to the scoreboard for the surveillance of macroeconomic imbalances in the EU, in a composite early-warning index of fiscal stress. It should be stressed that our interest in the MIP scoreboard variables relates exclusively to risks that macroeconomic imbalances entail for public finances. Our intention is not to measure macroeconomic imbalances as a more general reason for concern to a solid process of economic integration, also beyond the possible repercussions on public accounts. Thus, though some of the financial-competitiveness variables are common between our early-warning system for fiscal stress and the scoreboard used in the macroeconomic imbalance procedure (MIP), the purpose to which the variables are used differs between the two.

Two main findings emerge from our analysis. The first relates to the potential displayed by financial-competitiveness variables as possible fiscal stress predictors. Based on past fiscal stress events, their predictive power is generally significantly higher than that displayed by fiscal variables. In particular, some of the variables common to the MIP scoreboard appear to be among the best-performing predictors of fiscal stress. This highlights the importance of including these variables in the context of an early-detection index of fiscal stress. The second finding refers to the relative performance, in terms of fiscal stress prediction, of the composite indicator (incorporating both fiscal and financial-competitiveness variables) versus the same individual variables taken in isolation. Results obtained pinpoint to a significantly higher predictive power for the composite indicator. This speaks in favour of its use in the context of our early-warning model.

In the last part of the paper, we show how the methodology object of analysis would apply to EU countries, by presenting results on the overall early-warning index for fiscal stress, the two sub-indexes incorporating fiscal and financial-competitiveness variables respectively and all the variables used in the analysis. All these three "layers" of analysis would turn out to be useful in an exercise aimed at a timely detection of fiscal stress. The overall index, analysed with reference to its critical threshold, highlights whether a certain country is at risk of fiscal stress or not. The two sub-indexes further allow the identification of the broad areas vulnerabilities stem from (either the fiscal or the financial-competitiveness side of the economy, or both), with the analysis at variable level making it possible to precisely identify the specific sources of vulnerabilities, which is of course key to an appropriate design of risk-containing policies.