As the pandemic and recovery efforts continue, it is more crucial than ever that the Fund provide its member countries with sound technical support on their daily operations.

Forecasting short-term liquidity is central to Central Bank operations, and in this regard MCM together with ITD has developed a framework for forecasting central bank liquidity.

Accurate forecasts of the autonomous factors are crucial to operate a monetary framework smoothly, strengthen monetary transmission, and tame interbank market volatility.

This framework will provide such forecasts utilizing the latest development in the statistical literature and an easy-to-use interface, improving on central bank operations in this time of volatility.

The framework, developed between MCM, world-class academics and ITD, entirely automates a set of forecasting models, featuring multiple model estimation, automatic fine-tuning, model validation, dynamic selection on out-of-sample performances, forecasts reconciliation, and interactive report generation.

It has already been deployed to several countries for TA missions (Jordan, UAE, Namibia, Djibouti, Nicaragua, and Honduras), and more are coming.

The forecasting methodology has been taught in three regional technical assistance centers (South East Asia, Middle East, Central America) as well.

On the technical side, the framework not only forecasts the three main autonomous factors (currency in circulation, net foreign assets, and state account balance), but also reconciles the forecasts into an aggregated liquidity position.

This approach is entirely new, as most central banks only forecast currency in circulation with simple ARIMA models or based on expert judgement.

The collaboration with ITD has introduced several useful features, such as the generation of interactive HTML reports that allows easier and deeper inspection compared to static ones.

While the forecasting models are state-of-the-art, the entire framework is built on the open source R programming language, which allows all central banks to run them free of any cost.

The framework is built to run with a simple interface so that very little technical knowledge is needed to run the models and inspect the forecasts, while full details of models and forecasts are available for inspection if needed.

Furthermore, the entire source code is provided, allowing the authorities to make modifications if necessary and allowing further collaborative efforts with the Fund.

Further details of the framework will be described in an upcoming Working Paper, which should be available by the Spring Meetings.

The attached HTML document is an example HTML file that will be generated by the framework. The charts are interactive and useful features such as hovering over data points to show values, zooming, panning, and double clicking on empty areas to toggle between the default view and the entire historical data are available.

These make the forecast results much more accessible and easy to use.