Lebanon: Using Creative Forecasting When Data isn't Available

By Andrew Jewell

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Economists are paid to make forecasts. If they're lucky, they can turn to relevant and timely macroeconomic data to inform their forecasts. But what's an economist to do if the most relevant data is spotty and available only with a long lag? Such is the situation in Lebanon.

An economist trying to forecast economic growth in Lebanon is at a distinct disadvantage compared to an economist working on, say, the United Kingdom. The UK statistical agency produces GDP data on a quarterly basis with a one-month lag. This means that someone trying to forecast full-year economic growth in the UK will already have two quarters of actual results by the month of July.

The situation in Lebanon is quite different. Due in part to a lack of resources, GDP data is compiled on a yearly basis and is published with a lag that can sometimes exceed two years. Forecasting economic growth in Lebanon therefore requires a bit more ingenuity.

In the absence of reliable and timely macroeconomic data, IMF economists have been employing nowcasting techniques to estimate Lebanon's GDP. A contraction of "now" and "forecasting," nowcasting is a statistical approach commonly used by central banks and market participants. The basic idea is that signals about current GDP can be extracted from large and diverse information sets before the official data itself becomes available. The same technique has been applied in other disciplines. Nowcasting methods based on social media content have been developed to estimate things such as the "mood" of a population or the presence of a flu epidemic.

Although the main macroeconomic statistics in Lebanon are published with long delays, more timely indicators do exist. For example, ARA Research & Consultancy produces a consumer confidence index. The Beirut Trader Association–Fransabank Retail Index summarizes developments in the retail sector, and the Beirut Traders Association-BankMed Investment Index captures investor sentiment. In November 2013, BLOM Bank and Markit launched a purchasing managers' index.

Nowcasting takes these and other high-frequency indicators and tries to get a sense of the key trends in overall economic activity. The main challenge is sorting through a wide array of indicators to find a model that does well in capturing GDP. But there is one key wrinkle: Many high-frequency indicators tend to move closely together, making it hard to choose the best indicators from a list of possible alternatives. As a result, traditional statistical techniques will sometimes produce models that are unstable, shifting significantly with the addition of new information. An unstable model means unreliable GDP estimates.

To get around this problem, IMF economists have employed what is called a "penalized regression" approach. The idea is to deliberately introduce a small bias into the model in order to reduce the variability of the estimates. If done properly, this approach yields a model that reliably outperforms traditional statistical techniques in predicting GDP. As can be seen in the chart below, the results are encouraging: modeled GDP estimates closely track available GDP data from 1997 to 2013.

So what does this mean for Lebanon? Thanks to nowcasting techniques, IMF economists can overcome Lebanon's statistical deficiencies and produce well-grounded estimates of the country's economic growth using readily available proxy data.

Lebanon: Estimated GDP Growth
(Percent, annual)

Sources: National Authorities and IMF staff calculations.

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