

Box 3. A Panel Regression Approach to Assessing the Real Impact of Global Liquidity

In order to assess the impact of liquidity on growth, we use two groups of explanatory variables in the specifications: macroeconomic variables that include country policy rates and inflation, and the supply and demand shocks to global liquidity as identified in Box 2.

$$y_t = \beta_1 y_{t-1} + \beta_2 R_{t-1} + \beta_3 P_t + \beta_4 CS_{t-1} + \beta_5 CD_{t-1} + \beta_6 NCS_{t-1} + \beta_7 NCD_{t-1} + \varepsilon_t$$

Where

y is the real growth rate, on a year on year basis,

R is the country policy rate,

P is country headline inflation, year on year,

CS is supply shock on core liquidity,

CD is demand shock on core liquidity,

NCS is supply shock on noncore liquidity,

NCD is demand shock on noncore liquidity

The PR approach uses a two-step Arellano-Bond GMM estimator to address several econometric problems that could arise from the equation. First, the global liquidity variables—core and noncore liquidity as well as the supply and demand shocks—is assumed to be endogenous, while inflation and policy rates are considered as predetermined. Furthermore, because causality may run in both directions, they may be correlated with the error term. Second, the presence of lagged dependent variable gives rise to autocorrelation. Thus, the specification is instrumented using up to one lag. Lastly, time-invariant country characteristics (fixed effects)—e.g., demographics or geography—may be correlated with the explanatory variables.

A number of additional variables were introduced to control for the behavior of global liquidity. To explore cross-country variations in the sensitivity to funding shocks, a G4 dummy variable is introduced, which takes on the value of 1 if the country is a part the euro area, Japan, U.K. and the U.S and zero otherwise. To assess whether the financial crisis altered the impact of liquidity shocks on growth, we also introduced a crisis dummy variable, which takes on the value 1 if observations occur between the period of Q4 2007 and Q2 2009, as per NBER U.S. recession dating and zero otherwise. To assess the possibility of lingering effect of the crisis on the interaction between funding shocks and growth, even after the resumption of growth and credit intermediation, we introduced a post-crisis dummy, which equals to 1 for the period following the financial crisis and zero otherwise.