Figure 1.4.1. Jumps and U.S. Stock Market Liquidity

The proportion of overall price variation explained by jumps is at historical lows ...

1. Proportion of Variation Explained by Jumps
   (Percent; monthly and six-month moving average)

2. Frequency of Jumps
   (Percent; monthly and six-month moving average)

However, infinite activity jumps tend to be prevalent in stress episodes …

3. Type of Jumps over Time and during Specific Stress Episodes
   (Size of bubble corresponds to size of volatility spike)

   - Finite activity
   - Infinite activity
   - VIX tantrum
   - Flash crash
   - U.S. election
   - Brexit
   - Taper tantrum
   - Flash rally

   Potential microstructure noise
   Measure of the type of jump
   6 period average

… and tend to be characteristic of relatively illiquid sectors.

4. Type of Jumps versus Sectoral Liquidity
   (Index; averaged for S&P 500 constituents over the first half of 2018)

Sources: Bloomberg Finance L.P.; and IMF staff estimates.
Note: In panel 1, “Method 1” is based on Huang and Tauchen (2005) and Andersen and others (2006); “Method 2” is based on Ait-Sahalia and Jacod (2012). In panel 2, frequency of jumps is based on the former method, and variation explained by jumps is based on the latter method. In panel 3, the black and gray lines measure the type of jump: finite activity (that is, news-related shocks) versus infinite activity (that is, a series of small jumps reflecting insufficient liquidity); the size of circles depicts the level of the Chicago Board Options Exchange Volatility Index (VIX) on selected stress event days. In panel 4, trading volumes serve as a proxy for liquidity. Cons = consumer; cons disc = consumer discretionary; IT = information technology; telecom = telecommunications.