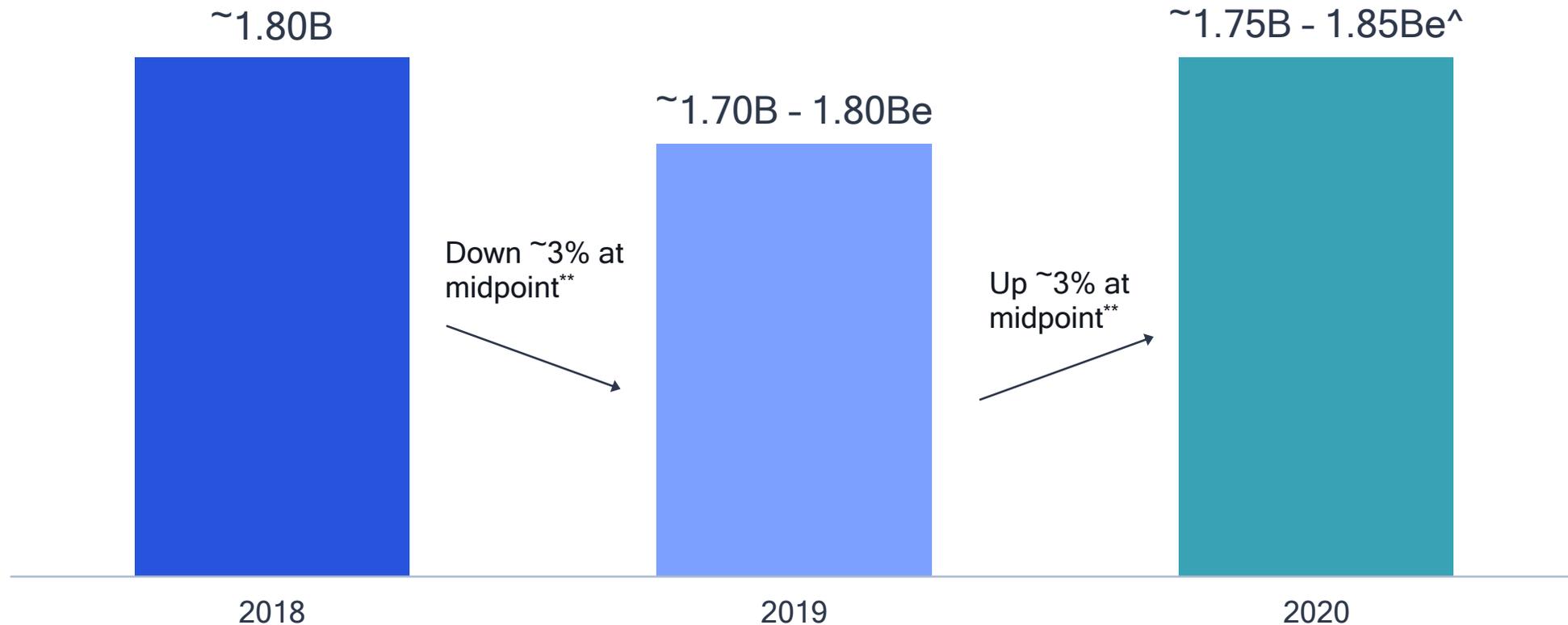


Global 3G/4G/5G device shipment* estimates

Calendar year, as of November 6, 2019



* Global 3G/4G/5G device shipments represent our estimate of CDMA-based, OFDMA-based and CDMA/OFDMA multimode subscriber devices shipped globally, excluding TD-SCDMA devices that do not implement LTE. We continue to believe that certain licensees, particularly in China, are not fully complying with their contractual obligations to report their sales of licensed products to us, and certain companies, including unlicensed companies, particularly in emerging regions and China, are delaying execution of new license agreements. As a result, we do not believe that all global 3G/4G/5G device shipments are currently being reported to us.

** The midpoints of the estimated ranges are used for comparison purposes only and do not indicate a higher degree of confidence in the midpoints.

^ Includes 175M - 225M 5G handset shipment estimates.