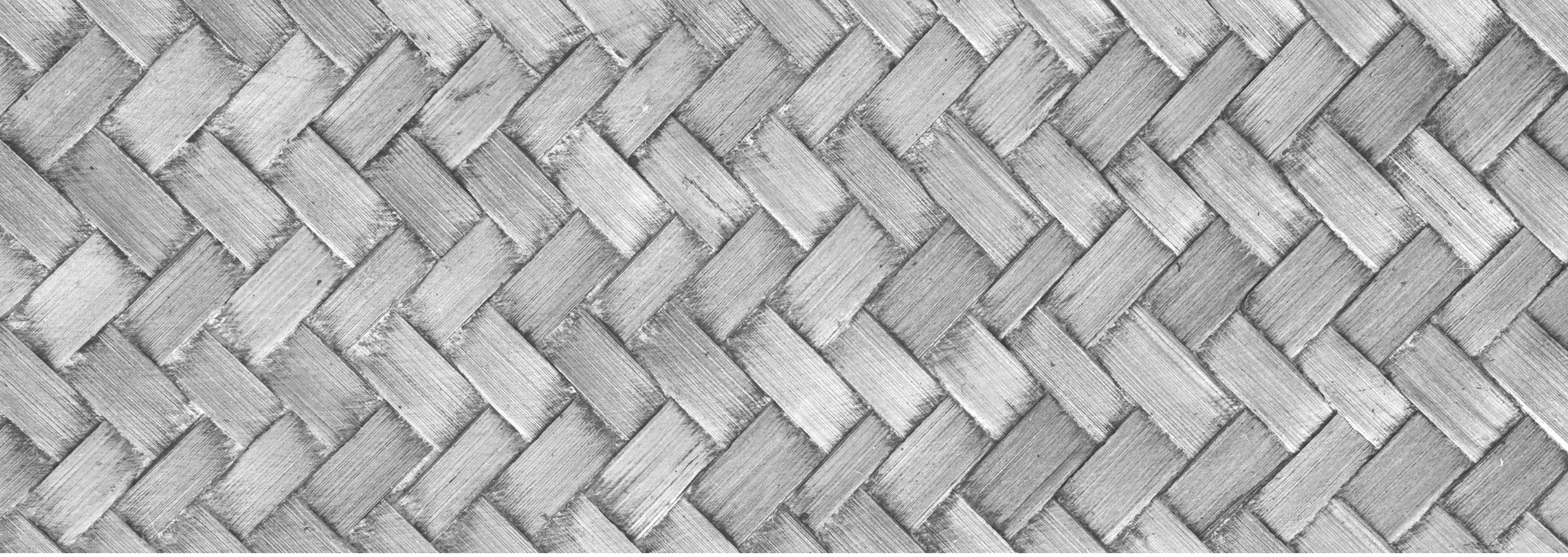

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# *Fed Thoughts:*
# Lattice Work

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We read the headlines, too. That a public official, especially one raised in the real estate business, does not like increases in interest rates is not shocking. Vigor to spending, support to equity prices, and suppressed borrowing costs all look good to a politician eyeing an upcoming election, despite potential longer-term costs associated with excessive policy stimulus. Because a US election is always coming, monetary policy has been delegated to an independent agency, the Federal Reserve (Fed), to balance near-term benefits and longer-run costs. Independence does not rule out, however, a public discussion about public policy by public officials. It is awkward when that criticism contains more than a touch of self-interest. Post Volcker and Greenspan, the Fed's ramparts of independence remain high, so the only question is how it influences central bankers' internal decision-making, not whether decisions will be forced upon them.

The answer is probably not at all. To quote Chair Jay Powell, Fed officials stay in their lane. Macroeconomics, with resource use taut and cost pressures building (albeit slowly), drives the bus, even when some passengers complain about the speed. This is true even when one of those passengers is in the front row.

Besides, this Fed official must recognize that it is seldom wise to rise to the bait President Trump dangles about unorthodox policy initiatives. There is enough chum in the water already, with threats to the global trading system and half-century security arrangements, as well as on-and-off friends as enemies and enemies as friends. That Fed officials remain reluctant to be explicit about the potential effect of trade dislocations on their economic forecast indicates that rhetoric alone is unlikely to spook them. In fact, the more significant risk to central bank independence historically has been behind-the-scenes pressures—when administration officials prey on the loyalties of those they appointed or pose threats about the potential nature of new appointees. Thus far, President Trump has shown little inclination to play the inside-game of influence. In fact, his penchant for public channels often redounds to the benefit of his targets, at least as judged by, say, the approval rating of Canadian Prime Minister Justin Trudeau. Fed officials will hunker down, expect the storm to pass, and work according to plan.

### The Upcoming FOMC Meeting

The plan as manifest over the past 1½ years is to firm policy at every press-conference meeting, presumably until the Fed has a stronger sense that the policy rate is around its neutral level. The upcoming Federal Open Market Committee (FOMC) meeting on July 31 to August 1 does not offer a media opportunity, so no action will be forthcoming. Look for words foreshadowing action in September, and some stronger signals published in the minutes three weeks later. The drafters might soften the characterization of policy accommodation in the statement, as officials cannot be sure how much higher they need to take the fed funds rate. For now, that is a fight brewing for 2019. A preponderance of FOMC participants accept that at least a few more hikes are needed to keep inflation from seriously overshooting its two-percent goal. Beyond that, senior Fed officials are not confident enough about their understanding of the economy to stop and start the firming cycle (beyond the press-conference mini-cycle), especially as it would be difficult to explain to the public. The plain-spoken Fed chair will opt for a policy path that explains itself—to keep going until it is more obviously time to stop.

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By the way, do not expect five years from now to read any mention of President Trump's comments in the 120-page transcript of the meeting. This is not because they are irrelevant to the policymakers in the room. Rather, to a person, those comments are likely viewed as inappropriate and unfortunate, but also a force of nature that is imperturbable to their influence. They will avoid talking about what is hurtful in the same manner that Mr. Rochester failed to mention the significant issue of the resident in the tower to Jane Eyre.

### Lattice Work

Among the metaphors favored by Jay Powell is that the Fed should "stick to its knitting." We thought it might be worth applying that principle to unraveling policy expectations embedded in futures prices, recognizing that one of the simplest stitches is lattice work. The CME Group routinely updates probabilities of discrete Fed events using prices on its 30-day interest futures contracts fit into the FOMC calendar. The identifying assumptions are that the FOMC acts only at its scheduled meetings and in 25-basis-point increments. From this process, we can reasonably infer that market prices put only a minimal probability (4 percent) on a rate hike at the upcoming meeting. We can also assert that market participants are underpricing the likely 2018 Fed outcome—four quarter-point moves. The December contract puts only 55 percent of the chips there.

An interpretation problem is that there are multiple paths to that endpoint, which is where knitting comes in. The lattice work in the figure below connects each possibility for the four remaining meetings in 2018 following the CME's knitting card that the only choices are no change or up 25 basis points. Getting to two more moves by year-end requires acting at two meetings and taking a pass at the other two. Think only one and done, then there are three meetings at which policy stays on hold.

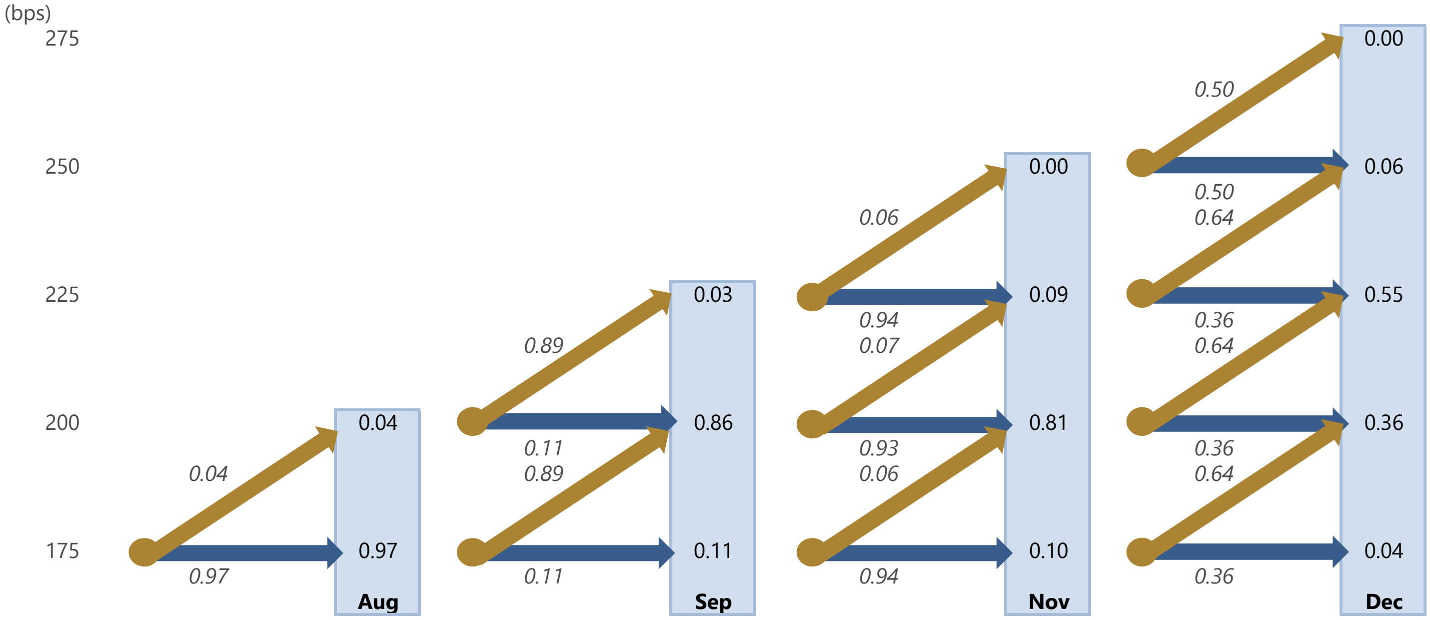
The probabilities in the boxes give the CME results for the remaining four meetings (which are unconditional probabilities since no knowledge of prior meetings is required to understand the outcomes at these meetings). The numbers in italics along each route to the next meeting gives probabilities conditional on the outcome of the prior meetings. While there is a 55 percent chance that the lower bound of the funds rate range gets to 2¼ percent by year-end, the chance it follows the route in our forecast of pause, move, pause, and move is about 50 percent.

Not a big difference, to be sure, but there are four other benefits of this "mathiness."

1. The lattice explains how futures rates evolve as the FOMC picks along one path. If it refrains from action at the upcoming meeting and conveys no other news in its statement, the probability of a one-quarter hike in September should move from 0.86 to 0.89.
2. Anyone expecting the Fed to pass at the September meeting should also anticipate some drama next week, contrary to the widespread notion that the August meeting will be a non-event. An 11 percent probability of inaction in market prices after next week is too low for the FOMC to tolerate if that were the plan. In the modern era of smoothing every bump in the market-reaction road, the upcoming FOMC meeting statement and minutes would have to mark a serious down-shift in firming plans. The change would be all-the-more wrenching because Jay Powell passed on a traditional opportunity to reset the board, his semiannual testimony on monetary policy.
3. If there is no press conference, then there is no expectation of policy action. Conditional probabilities, regardless of the prior meeting outcome, are all above 90 percent for inaction in the August and November short-form Fed affairs. This sets a good baseline for changes in 2019 to the contours of expectations, when Chair Powell steps up to the podium after every meeting.

**The Lattice of Outcomes for the Federal Funds Rate from Futures Market Prices**

Lower bound of the fed funds rate target at the end of the FOMC meeting (bps)




Source: Calculations from BNY Mellon Asset Management North America using CME Fedwatch Tool, accessed on 7/22/18 at https://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html

4. If we are wrong and there is only one more tightening this year, the surprise is more likely to be in December than September. This makes complete sense. Disappointment is much more likely from economic data and financial market prices than the Fed's reaction to that data. Among the possibilities, trade concerns may weigh on spending intentions, confidence, and market wealth. We are also all-too familiar with waiting for inflation that does not arrive. That is not our base case but is a tail risk. At this writing, those policy risks are asymmetric; Fed precedent and the meeting calendar constrain the chance of higher-than-baseline rates. As for the Fed, ever see a Gary Cooper Western? As in those movies, the sheriff, Jay Powell, does not create drama but reacts to it.

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