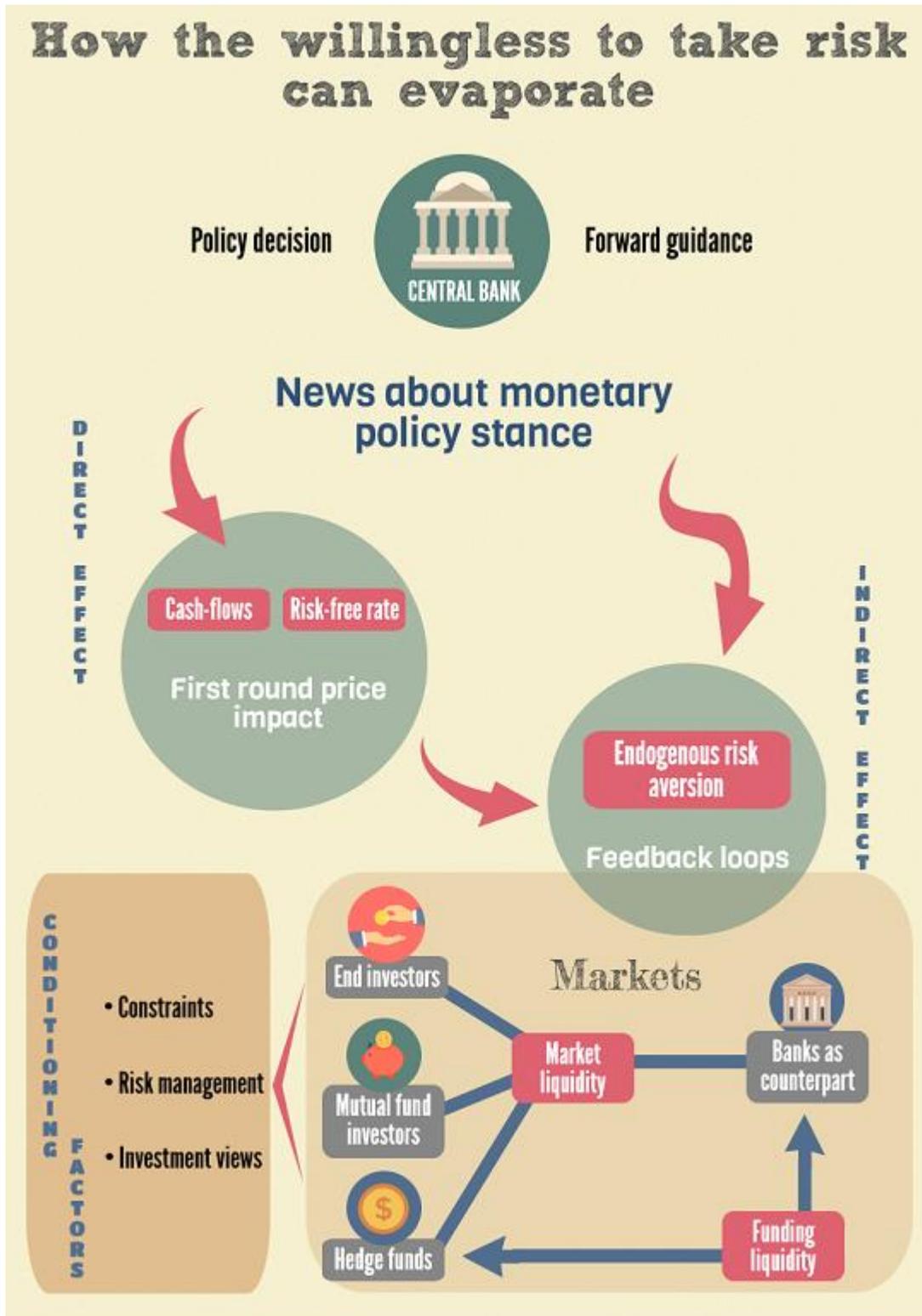


## Recommended reading



## How the willingness to take risk can evaporate

■ News about monetary policy news influences asset prices via changes in expected cash-flows, the risk-free rate of interest and the required risk premium ■ Big fluctuations in the risk premium explain why asset prices are more volatile than news about 'fundamentals' ■ These fluctuations reflect the heterogeneous nature of market participants

### The difficult task of monetary policy normalisation

According to Janet Yellen, the reduction of the size of the balance sheet of the Federal Reserve will be like "watching paint dry". In plain English this means 'boring'. The metaphor reflects the concern about the reaction of financial markets, and indirectly the economy at large, to monetary policy normalisation. In an era of unconventional monetary policy, normalisation is a stepwise process consisting of stopping asset purchases, hiking the policy rate, shrinking the balance sheet. Policy normalisation makes communication particularly important, even more so when monetary policy has been very easy for a very long time and when different tools have been used to that end (policy rate at the zero lower bound or lower, quantitative easing, forward guidance).

Communication is easier when the central bank is in an easing mode: if the message is insufficiently clear, re-iterating it with greater insistence will help. When tightening, the exercise is tricky and when the message is misunderstood, sudden asset price corrections, possibly with negative consequences for the real economy, can follow. A recent [ECB paper](#)<sup>1</sup> on communication of monetary policy in uncertain times, argues that the central bank needs to provide as much detail as possible so as to avoid that its future policy would become a source of uncertainty. 'Detail' relates to being clear about the reaction function and about its policy intentions. The latter are typically state-dependent: they depend on the evolution of the variables which determine the objective of the central bank, so when a given inflation target is the only objective, this means the determinants of the inflation dynamics. "State-contingent forward guidance allows economic agents to endogenously adjust their expectations in light of new economic developments, thereby requiring fewer re-adjustments of central bank communication if these developments differ from the original expectations." Moreover, the authors advocate that in order to increase predictability of future actions, the ECB would be clear on the specific indicators it is looking at to assess its policy stance. With a toolkit consisting of three instruments (policy rate, balance sheet, forward guidance), whereby the use of one instrument influences the extent to which another should be used (like in the US where balance sheet reduction is a substitute for rate hikes), communication is more important than ever.

### Why news matters

Why are financial markets so sensitive to news in general and news about monetary policy in particular? With the price of an asset being equal to the net present value of future cash-flows, monetary policy news (including changes in expectations) influences this price via

changes in expected cash-flows (a tightening eventually leading to slower growth), a higher discount rate via an increase in the risk-free rate of interest and a change in the required risk premium. If the required risk premium were constant, it shouldn't be too difficult to assess the likely impact on asset prices of monetary policy news. In reality of course, the required risk premium fluctuates, which implies that asset prices are more volatile than the news about 'fundamentals'.

[Danielson and his co-authors](#) argue that this phenomenon reflects endogenous risk<sup>2</sup>: "while the seeds of the volatility are exogenous (and driven by fundamental news), a large part of its eventual realized magnitude is due to the amplification of the exogenous news within the system... In the main, price movements have two components — a portion due to the incorporation of fundamentals news, and an endogenous feedback component due to the trading patterns of the market participants over and above the incorporation of fundamentals news." This means that the amplification is driven by the endogenous evolution of risk aversion.

### The financial sector and hedge funds

Given the diversity of financial market participants, the dynamics of risk aversion (and its inverse, the willingness to take risk) are complex. In Danielson et al. (2013) it is related to fluctuations in the capital of the financial sector, which influences their access to funding and the risk capacity of the financial system. [Bookstaber, Paddrik and Tivnan](#) analyse the feedback loops in great detail focussing on the interaction between hedge funds and banks<sup>3</sup>. They "focus on hedge funds because leverage is the critical feature that creates asset-based fire sales. The hedge fund uses its capital and cash borrowed from the prime broker of a bank/dealer to finance its buying of assets." Let's consider a news shock which causes a big drop in the price of an asset in which a given hedge fund has a big position. How is this shock amplified in the financial system? The hedge fund may be forced to liquidate positions because clients withdraw money and/or because it is faced with reduced access to funding. The authors call these asset-based fire sales. They can create contagion effects between hedge funds when they share certain positions ('crowded trade'). In addition there will be contagion between assets. The asset which drops first based on the initial shock causes forced selling which will affect other positions as well. The latter can even suffer more than the asset which was hit in the first place. Market liquidity will influence the extent of the drop in prices (which in turn can generate feedback loops). In addition there may be

<sup>1</sup> Günter Coenen, Michael Ehrmann, Gaetano Gaballo, Peter Hoffmann, Anton Nakov, Stefano Nardelli, Eric Persson, Georg Strasser, Communication of monetary policy in unconventional times, ECB Discussion Paper, n° 2080, June 2017

<sup>2</sup> Jon Danielsson, Hyun Song Shin, Jean-Pierre Zigrand (2013), Endogenous and Systemic Risk, chapter in Quantifying Systemic Risk, Joseph G. Haubrich and Andrew W. Lo (editors), University of Chicago Press

<sup>3</sup> Rick Bookstaber, Mark Paddrik and Brian Tivnan (2014), An Agent-based Model for Financial Vulnerability, Office of Financial Research, Working Paper 14-05



funding-based fire sales. They are triggered by a disruption in funding at the broker/dealer level because of a decline in the value of collateral or an erosion of confidence: *“the funding restrictions for the bank/dealer can reduce the funding available to the hedge fund through the prime broker, leading to asset liquidations.”*

### Constraints, risk management, views

Imagine now a world where investors are not leveraged. In such a world, shocks can impact investors via constraints, risk management and changes in investment views. In terms of constraints, long-horizon investors like pension funds or insurance companies could be held back from buying assets which have dropped significantly in price because of regulation in terms of respectively asset/liability mismatch and capital requirements. Under certain conditions they might even be forced to sell as well. In both cases, market liquidity could act even more as a constraint, very much along the lines of what was described in the previous paragraph. *“If fire sales of assets begin to drive down market prices ... market makers can incur losses. Post-crisis reforms have made dealers much stronger, reducing the probability that this could lead to their distress or failure. Nevertheless, trading losses still make their funding more expensive and reduce their headroom over regulatory capital requirements, reducing incentives to take risks. That can mean shedding their inventory and stepping back from absorbing asset sales by others.”*<sup>4</sup>

Risk management can contribute to a selling wave in different ways.

1. Call option replication and floor-protection strategies will force the portfolio manager to sell risky assets (typically equities) and increase cash levels as prices go down.
2. Exposure management can trigger sell orders and contribute to contagion. Suppose an investor has built exposure to a high yield multi-sector bond index via an index tracking fund. If he becomes concerned about the outlook for one sector of this index, he may have no other option than to reduce his position, thereby impacting the other sectors as well.
3. When prices decline, risk aversion may increase, all the more so when the risk level of a portfolio is significantly higher than the long term average. The latter can be called the preferred habitat and in times of stress it may act as a magnet and become a catalyst for reducing portfolio risk.
4. Managing commercial risk also plays a role. Under the (realistic) assumption that relative performance rankings influence flows into and out of mutual funds, fund managers will try to avoid underperformance versus peers. When market volatility increases, the risk of underperformance versus competitors can increase, so the aversion to underperformance may trigger short-termism on behalf of fund managers. Managers in a given peer group may act in the same way creating a selling wave.<sup>5</sup>

5. Closely related to the previous point, relative performance versus a benchmark can *“lead to an increase in the effective risk-aversion of a benchmarked institutional investor, particular so as his “surplus performance” relative to the index declines”*<sup>6</sup>. This means that as the excess return goes down, risk versus the benchmark will be scaled back.

Investment views can cause fluctuations in the required risk premium as well. Anticipation effects can play a role whereby the manager gives a bigger weight than before to momentum when deciding where to invest. Reduced confidence in forecasts on the back of increased volatility and uncertainty may cause a decline in the expected Sharpe ratio (the risk-adjusted excess return of an asset versus holding cash) or the expected information ratio (the risk-adjusted excess return of a portfolio versus a benchmark). The ensuing risk reduction of the portfolio would contribute to the decline of risky asset prices (equities, corporate bonds, etc.).

### Conclusion

At first glance, fluctuations of risk aversion may be puzzling. Danielson et al. (2013) wonder *“How can it be that human beings are risk averse one day ... only to become contagiously risk-loving not too long thereafter?”* In their view risk constraints on individual traders or desks play a key role as well as changes in haircuts and the implied change of leverage by credit providers. Several other factors can be added to their list: confidence in one's market views, benchmarking versus competitors, regulatory constraints, contagion across assets, etc. In times of increased uncertainty about the outlook for key market drivers, in particular monetary policy, these factors will probably cause a shortening of the investment horizon, all the more so if central banks insist that their policy has become very much data-dependent.

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<sup>4</sup> [Yuliya Baranova, Jamie Coen, Pippa Lowe, Joseph Noss and Laura Silvestri \(2017\), Simulating stress across the financial system: the resilience of corporate bond markets and the role of investment funds, Bank of England, Financial Stability Paper No. 42](#)

<sup>5</sup> [Michael Feroli, Anil K Kashyap, Kermit Schoenholtz and Hyun Song Shin, Market Tantrums and Monetary Policy, Chicago Booth Paper No. 14-09, Working Paper No. 101](#)

<sup>6</sup> [Matthijs Breugem and Adrian Buss \(2017\), Institutional investors and information acquisition: implications for asset prices and informational efficiency, NBER Working Paper 23561](#)

