Liquidity: The Bloodflow of Financial Markets

A stable flow of blood through the body is central to health and liquidity – the measure of the flow of trading activity across markets – is similarly critical to the health of the economy. We spoke to Professor Angelo Ranaldo about why it is important to study liquidity in conjunction with asset prices, just as a doctor should consider both blood and nerves for a comprehensive diagnosis.

The Efficient Markets Hypothesis remains an influential paradigm in financial economics. Simply put, a market is only efficient when an asset is traded at a unique price reflecting its fundamental value. This efficiency is broken down by a myriad of frictions, chief of which is the concept of illiquidity. Understanding these issues has motivated more than 20 years of research conducted by Professor Ranaldo, whose current projects are backed by the Swiss National Scientific Foundation (SNSF grant 182303 on “FX Trading Volume and Illiquidity” and SNSF grant 204721 on “Cryptocurrencies”). “My intention has always been to understand whether markets are efficient and if they are not, why not. An effective way to do this is to analyse illiquidity, which is the visible part of the iceberg of market inefficiencies,” he outlines.

While these inefficiencies can pose sizeable problems in their own right, they become exponentially dangerous when they amplify into three strands converging to the same end: market liquidity, funding liquidity, and how liquidity affects asset pricing.

Market Liquidity
“A liquid asset is one which can be easily and rapidly converted into [or out of] cash, and will always be quoted a “fair” price no matter the trading volume,” Ranaldo explains. But liquidity is an elusive and multifaceted concept, with many considerations such as transaction costs, price elasticity, market depth, the time needed to find a suitable counterparty, the effort needed to execute the appropriate trading strategy, etc. Since the early writings of his Ph.D. thesis, Ranaldo’s research has continued to shed light on the demand and supply of liquidity (Ranaldo, 2004), the methods by which its accurately measure it (Abid and Ranaldo, 2015), and how to circumvent the problem of limited data availability (Karnauli, Ranaldo, Söderlind, 2015).

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Funding Liquidity
Liquidity is a coin with two faces: market liquidity and funding liquidity. The latter refers to peoples’ ability to borrow money or securities, which is crucial in the modern financial system, as investors often take a leveraged position to increase the potential return of an investment. On the one hand, funding problems can impair market liquidity, “imagine that in order to invest in assets worth more than your equity, you use a bank loan. If your bank suspects that you are no longer able to repay, or if the bank itself needs liquidity, then it may decide to step back and sell assets...”

“Something curious, if not ironic, is that the foreign exchange rate (FX) market, is the largest market in the world and is considered by many to be warging on, market efficiency given its size and the prevalence of professional traders, such as global dealers and sophisticated financial firms. And yet, it’s been previously known about its liquidity,” Ranaldo points out. “In Mancini, Ranaldo, and Wrampelmeyer (2013), we showed that FX market liquidity, while seemingly reliable, can suddenly disappear as it did for example in reaction to the collapse of Lehman Brothers. Worse, it did so simultaneously for many currencies, and in connection with other financial securities such as US stocks and bonds. This is exactly what worries investors just as things are getting precarious and you need liquidity the most in order to adjust your portfolio, you are trapped because illiquidity freezes trading and renders it painfully expensive.”

Since liquidity is an elusive, intangible concept, it can be difficult to identify its enemies. But there are at least three: First, a bitter enemy of liquidity is risk, whether it be the aggregate market risk or the idiosyncratic risk of a financial security. A second is the issue of poor information. As shown in Ranaldo and Somogyi (2021), Lack of information, or the unequal distribution of information among market participants, has a negative impact on market liquidity. The third component is the complications posed by market segmentation, which certainly applies to FX markets, as analysed in Ranaldo (2009) FX rates are traded in over-the-counter (OTC) markets which, by their nature, are fragmented and opaque. In these markets, the supply of liquidity is concentrated in the hands of some twenty dealers who act on a global scale. FX dealers require compensation to offer liquidity and for all the risks associated with their service. However, their availability to offer liquidity also depends on their own financial health, as shown in recent work (Huang, Ranaldo, Schrimpf, and Somogyi, 2021), and this brings the professor to the second strand of his work: funding liquidity.

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Liquidity and Asset Prices

“Imagine that you hold a financial security whose liquidity evaporates when things take a turn for the worse, for example when financial markets go down. Wouldn’t you demand compensation or a premium for this risk?” asks Professor Ranaldo. With his colleagues, he empirically corroborates this idea by studying US stocks (Abd and Ranaldo, 2017) and FX markets (Christiansen, Ranaldo, and Söderlind, 2011; Mancini, Ranaldo, and Wrampelmeyer, 2015). With Fabricia Somogyi, we were able to isolate the asymmetric information risk. We showed that asymmetric information risk in the FX market is systematic and pervasive. Furthermore, we found a way to quantify its economic magnitude,” he explains.

The liquidity of certain financial securities, or their ability to generate it, is priced by investors. “For example, there are heavily traded financial securities such as government bonds issued by solid sovereign states such as the US and Germany that are not only safe, but also offer liquidity benefits, such as being widely accepted as collateral by clearing houses or counterparties in derivative contracts, or by qualifying as collateral for refinancing operations with central banks, or as High-Quality Liquid Assets (HQLA) to satisfy current Basel III regulations,” Ranaldo describes. In a recent work with Benedikt Ballenefsien, they demonstrate that investors pay a premium for the liquidity benefits offered by these safe assets (Ballensiefen and Ranaldo, 2019). Moreover, investors further appreciate them when they become scarcer and during risky times. In two further studies, it has been shown that scarcity can be induced by large purchase programs (i.e. quantitative easing) conducted by central banks (Ballensiefen, Ranaldo, and Winterberg, 2020) and regulation (Ranaldo, Schaffner, and Vasios, 2021).

The price of a financial security is not only determined by the quality of the security but also by how it exposes its owner to liquidity risks. “Liquidity mismatches are part of banks’ business models because they fund long-term assets with short-term liabilities. Relying more heavily on volatile sources of funding – for example, deposits from a fickle customer base or short-term interbank lending – exposes banks to liquidity risk,” Ranaldo continues.

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A recent study (Bechtel, Ranaldo, and Wrampelmeyer, 2019) shows that those who are more exposed to urgent liquidity needs are willing to pay a markup for immediate funding, and that the liquidity risk is different from other issues such as counterparty credit risk (demanded by lenders) or market illiquidity.

Next Projects

In his recent research, Professor Ranaldo has analysed unique FX data from the Continuous Linked Settlement (CLS), which operates the world’s largest multi-currency cash settlement system, handling around 50% of the global spot swap, and forward FX transaction volume. These data have a rich information content since they represent the global FX market and are observable at a high frequency, i.e. even on an intraday basis. “So far we have studied the spot market on a global scale, as for instance in Ranaldo and Santucci de Magistris (2018). The next step is to shed light on the FX derivatives market, especially FX swaps, which are an even larger segment than spot. I started to report some general findings in a handbook chapter (Ranaldo, forthcoming) but I have only scratched the surface for now,” Ranaldo concludes.

Thanks to the recent SNSF grant 204721, Professor Ranaldo plans to conduct in-depth research on Financial Technology (Fintech). “Technological innovations such as blockchain, tokenization, and smart contracts have the potential to diminish and even remove many of the frictions we discussed,” Ranaldo argues. Together with Professor Andrea Barbon, he has started a project assessing the quality of cryptocurrency markets (Barbon and Ranaldo, 2021). The next step will be to study digital assets and non-fungible tokens (NFT) - new blood in the financial system.