The asymmetric relationship of central banks to market-based finance: weighing financial stability implications in the light of Covid events

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Central banks today operate at the center of a very fragile and volatile financial system. With no or very little control over the pro-cyclical aspects of this system during the upswing, central banks today act as its safety net if disturbances occur, acting not only as the lender of last resort for banks, but also as the market maker of last resort and the investor of last resort for financial markets as a whole (Mehrling, 2010). If this hypothesis needed any further confirmation after the global financial crisis of 2008, the Covid crisis and the March 2020 "dash for cash" have indeed proven the point. Based on their function as the de facto system safety net, Western central banks have engaged in massive liquidity injections, using emergency liquidity facilities as well as new rounds of quantitative easing (QE) to reestablish financial stability (Schnabel, 2020). Most strikingly, the Federal Reserve (Fed) intervened in financial markets in the second half of March 2020 to buy inventories of broker-dealers, increasing its holdings of Treasury bonds by 775 billion dollars and 291 billion dollars in agency MBS (Fleming and Ruela, 2020). These

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massive asset purchase programs in the space of two weeks almost equal those made after the global financial crisis, when the Fed expanded its total portfolio from $920 billion in December 2007 to $2.1 trillion in June 2009.

The central proposition I would like to defend in this essay is that this latest episode reveals an asymmetry in the policies followed by central banks to prevent financial instability, which are quick and resolute in moments of crisis (from the financial crisis to the Covid crisis, including both QE and emergency liquidity facilities), but slow and hesitant, if not ineffective, in moments of financial boom. This has been the case since 2015, during which time anti-cyclical macroprudential policy instruments have proved largely ineffective, have been hardly used or have been non-existent (Thiemann, 2019). I will suggest that one reason for this asymmetric relationship is that central banks can exert no or only very limited control over the behavior of actors in the shadow banking sector, a sector of credit intermediation that is largely outside the prudential control of central banks. At the same time, central banks have come to explicitly backstop the system of market-based financing, providing liquidity and thereby "unclogging" the system of private liquidity provision when a "tail risk liquidity event" (BoE, 2021) materializes.

As a consequence of this asymmetric body of financial stability policies, central banks find themselves today in an untenable configuration: they are forced to intervene as market makers and investors of last resort in a financial system whose expansive tendencies they do not control. Their growing balance sheets, a result of this attempt to quell financial instabilities, lead furthermore to growing demands of societal stakeholders to use central bank balance sheets for purposes other than rescuing the financial system, as systemic risks are arguably extending beyond the financial system (e.g. climate change). Central banks thus find themselves at a crucial crossroads in terms of their institutional evolution. One way to address this problem, this essay suggests, is for central banks to either gain more control over the pro-cyclical behavior of the shadow banking system before a crisis or, on the contrary, to shrink the safety net of the system of market-based financing.

This asymmetric setup leads us to quickly revisit the growth of pre-crisis market-based financing and the macroprudential regulatory reform efforts of the shadow banking system as they were envisioned immediately after the financial crisis of 2007/2008. We will show how the weak implementation of reforms left central banks in charge of a financial system that they are barely capable of governing. We will then explain how this system of market-based financing proved to be nonresilient in the face of the Covid shock, elaborate on the most recent regulatory developments and the limited likelihood that this configuration will change, and conclude with some recommendations.

THE PRE-CRISIS GROWTH OF THE SHADOW BANKING SYSTEM AND ITS PRO-CYCLICAL EFFECTS

In the three decades before the financial crisis of 2007, a system of credit intermediation emerged that operated outside of the perimeter of banking regulation, although banks were at its center (Claessen and Ratnovski, 2015). This system, which can best be described as "money market funding of capital market lending" (Mehrling *et al.*, 2013), linked cash pools that were risk averse but cash rich with risk-embracing investors such as hedge funds, which were cash poor. This chain of intermediation, which often placed bank holding companies at their center (Pozsar *et al.*, 2010), operated through repo markets and intermediate investors, such as money market mutual funds, which promised investors absolute security. To achieve it, security precautions were used, linking market valuation practices to funding liquidity (e.g. in the haircut practices of repo lending), making the system subject to strong pro-cyclical feedback loops between market liquidity and funding liquidity (Brunnermeier and Pedersen, 2009) both in good times and bad (Adrian and Shin, 2010). The financial crisis of 2007/2008, which unfolded as a run on this shadow banking system (Gorton, 2010), demonstrated the pro-cyclical aspects of the system and its need for a public safety net.

In the moment of crisis, pro-cyclical feedback loops between market valuation of assets and leverage gave rise to a major liquidity crunch in 2008, leading to a massive deleveraging in the shadow banking system (*ibid*). To counter this development, central banks provided emergency liquidity facilities to backstop all the markets and instruments involved in the production of credit, including money market funds (MMFs) and the repo market, thereby assuming the role of market maker of last resort (Mehrling, 2010). The enormity of the rescue operation by central banks was to provide a major impetus for post-crisis regulatory initiatives, yet as I will show below, little to nothing was achieved in terms of limiting the pro-cyclical feedback loops inherent in this system of credit intermediation.

UNFINISHED BUSINESS: MACROPRUDENTIAL REFORM EFFORTS (2009-2015)

As a reaction to the crisis, the G20 charged regulatory bodies, under the guidance of the newly formedFinancial Stability Board (FSB), to engineer a reform of the financial system that would both increase the resilience of the financial system and tackle its pro-cyclical tendencies (G20, 2009). Accordingly, the first leg of reform efforts post-crisis aimed to increase the resilience of the banking system and reduce the role of bank holding companies in the shadow banking system. In this sense, the reforms can be deemed largely successful, at least in the light of the recent Covid crisis (Schnabel, 2020). The second leg of reforms were directed at the pro-cyclical aspects of the shadow banking system (FSF, 2009; CGFS, 2010). These reform efforts in turn can be deemed largely unsuccessful, also as evidenced by the Covid crisis (Schnabel, 2020). Opposition by market regulators, in addition to difficult coordination among prudential regulators internationally, meant that reform efforts to reduce the liquidity risks inherent in the mutual fund industry (in particular MMFs), as well as in the repo market, did not achieve the desired aims.

With respect to MMFs, in 2012 the SEC (Securities and Exchange Commission) refused to endorse far-reaching reform efforts for MMFs. The watered-down reform efforts largely left the on par character of MMFs intact (Thiemann, 2018). Attempts to address the pro-cyclical character of the repo market, by installing both higher haircuts through the cycle, as well as counter-cyclical haircut add-ons (CGFS, 2010; FSB, 2012), faced resistance from the Fed, which worried about problems of regulatory arbitrage and the difficulty of internationally coordinated action (Thiemann *et al*, 2018). In the end, these reforms merely implemented a through-the-cycle haircut so low that it was not binding. Similarly, the project to impose such haircut measures on central counterparties, to be set and modified by the regulators, encountered resistance by market regulators. In the end this merely led to regulatory requests to CCPs to ensure that their risk-management systems are not pro-cyclical (as enshrined in EMIR, *ibid)*, thereby granting regulators no capacity to directly influence pro-cyclical developments in either the upswing or downswing.

Ironically, the only regulatory reform efforts with a marked impact on the shadow banking system were those affecting the activities of large bank-holding companies within it (e.g. regarding their role as a safety net for the ABCP market or their role as derivatives dealers, to be replaced by the mandatory clearing of standard derivatives through CCPs). With respect to the repo market, two new regulations installed by Basel III, namely the net stable funding ratio and the leverage ratio, particularly impacted the role of large dealer banks within the repo market. These measures made extending liquidity through reverse repos costly for broker-dealers in terms of balance sheet space, somewhat limiting the capacities of these private market makers to make markets under all circumstances (Liang and Parkinson, 2020). These regulatory measures, which provoked several instances of short-term market turmoil (first in October 2014, then in September 2019) necessitated several central bank interventions as market maker of last resort, with the Bank of England taking a very proactive role in this regard (Carney, 2013, as cited in Birk and Thiemann, 2020). Overall, these increasing linkages of central banks to the repo market, both as absorbers of excess liquidity in reverse repos for MMFs, but also as providers of liquidity for broker-dealers, meant that the liquidity safety net of Western central banks for the system of non-bank financial intermediation became ever more explicit.

Despite this somewhat limited success in the reform efforts, which gave central banks little or no control over the pro-cyclical dimension of non-bank financial intermediation, in 2015 the FSB declared its mission of "transforming shadow banking into resilient market-based financing" had been largely accomplished. Unsurprisingly, given the imbalance between stringent regulatory measures for the banking system and the lax regulation of the shadow banking system, the expansion of credit in the financial system from 2010 to 2020 then occurred primarily within the shadow banking system. In particular, the sector of hedge and investment funds almost trebled their holdings of credit-related assets in this period, reaching 11 trillion dollars in 2020 (FSB, 2021a, p. 8). This now expanded shadow banking system, the limited reforms and developing central bank safety nets were to be put to the test by the liquidity events in March 2020, which were linked to the eruption of the Covid crisis (FSB, 2020).

THE COVID CRISIS AND THE DASH FOR CASH

During the Covid-related events, the resilience of market-based finance was found wanting (BoE, 2021), as central banks had to intervene by using the newly established direct links through the repo market facilities, but also by reinstating the emergency liquidity facilities of the 2008 crisis and initiating new rounds of QE. These events, which erupted in the third week of March, known as the "Dash for cash" (FSB, 2020), can be described as a classic liquidity crunch, where the sudden demand for cash led to strains on the financial system. As a consequence, MMFs faced massive redemption requests, and the repo market was essentially clogged up, with broker-dealers refusing to make markets since they were overwhelmed by demand (Liang and Parkinson, 2020, p. 6).

In the end, what calmed the market in this situation were direct asset purchases by central banks, rather than emergency liquidity measures or the repo facilities (BoE, 2021). Crucial interventions were the purchase of more than 670bn dollars of assets in March 2020 by the Fed, freeing broker-dealer balance sheets (Schrimpf *et al*, 2020, p. 6), the ECB's Pandemic Emergency Purchasing Program of 750bn euros, announced in March 2020, as well as the Bank of England's purchases of 200 bn pounds of gilts in the same month (House of Lords, 2021). These efforts were largely successful, as recent reports on the event confirm (*ibid*; Altavilla *et al*, 2021)[1]. These events not only revealed once more the inevitable liquidity safety net that central banks provide for non-bank financial intermediation, but also that the magnitude of the safety net most likely exceeds repo facilities and instead requires direct central bank purchases of assets.

CURRENT REGULATORY CONSIDERATIONS AND OUTLOOK

Following these events, both institutional reforms of central banks' links to the system of non-bank financial intermediation as well as a debate on broader regulatory reforms have ensued (FSB, 2021a). In line with the trend of ever-more explicit linkages to the system of non-bank financial intermediation, the Fed transformed its emergency repo facility into a standing repo facility in July 2021, offering to permanently engage in repo transactions with broker-dealers and commercial banks. Moreover, experts linked to the Fed are debating extending this facility to non-banks, as well as extending the role of CCPs in repo markets (Liang and Parkinson, 2020; Duffie, 2020), which most likely will further increase the role of this critical infrastructure. Finally, a permanent loosening of the leverage ratio for broker dealers is being discussed.

Yet recent central bank debates point to the fact that these changes might not be sufficient, and that market-based finance might well require a central bank safety net that extends beyond these repo facilities. As the Bank of England clarified in a recent report on the resilience of market-based finance, "while these facilities proved effective in supporting resilience and preventing stress amongst banks, they were not sufficient to address the scale of stress in the wider financial system, and in particular that amongst non-bank financial institutions. Asset purchases implemented under QE were needed to effectively restore monetary and financial stability. Other major central banks took similar action to tackle market dysfunction in core markets." (BoE, 2021).

This suggests to the authors that it might be necessary to extend liquidity to non-banks directly in order to tackle 'tail-risk liquidity events', which leads them to weigh the option of buying or selling directly from and to non-banks, rather than engaging in general QE (*ibid*). Institutionalizing this role, rather than executing it on an ad hoc basis, would require central banks specifying rates and conditions of access to such non-banks *ex ante*, which would have to be broad enough to stem potential liquidity shocks, all the while limiting excessive risk taking, as well as the risks to central bank balance sheets (*ibid*). As is evident from these conditions, setting up such a venue, which would institutionalize the role of central banks as investors of last resort, would require a tremendous balancing act, managing the trade-off between moral hazard regarding private risk-taking and an effective central bank safety net.

In the context of these considerations, a question arises: how much control do central banks have regarding the credit expansion tendencies of the system of non-bank financial intermediation and what impact would such a safety net have on these tendencies (moral hazard)? If its expansionary tendencies remain outside of their control, as is the case today, central banks should seek to avoid backstopping it, as such accommodation of expansionary practices would expose central bank balance sheets to substantial and increasing risks. On the other hand, if central banks decide to extend the safety net to these players, they need to ask for substantial reforms in order to reduce the fragility of the market-based system of credit production and the expansion of their prudential capacities to guide the pace of credit creation, including over CCPs.

Such an expansion would have to be accompanied by an expansion of the regulatory oversight and control over these non-bank entities and the repo market, which largely failed to occur after 2008. Reform efforts should include stringent reforms of MMFs to substantially limit the on par convertibility of MMF deposits. While several of such reform measures are currently under consideration at the national and international level (FSB, 2021b; FSOC, 2021), central banks should not count on such measures being enacted. Many of these reform efforts were already envisaged in 2012, but not enacted due to resistance by the SEC and the MMF industry lobby. The question that arises is whether the Covid crisis experience changes this state of affairs.

Central banks should also seek to obtain the right to impose a stringent through-the-cycle haircut and a counter-cyclical capital add-on to haircuts in the repo market, a demand they voiced in the aftermath of the crisis (CGFS, 2010). Such tools would allow central banks to gain some control over pro-cyclical expansions of credit in the system of non-bank finance, both in the upswing as well as in the downswing. Similarly, a greater role for CCPs in the clearing of the repo market is advisable. The question has arisen once again regarding control over the procyclical margining requirements of these actors, both in the cyclical upswing as well as the downswing. As things stand, central banks today are the de facto liquidity backstop of this critical infrastructure, whose behavior they most often do not directly control or supervise. If these reforms do not occur, and the safety net is nevertheless extended, central banks risk continuing a process that has led them to be the final backstop of a financial system whose dynamics they no longer control.

NOTES

1. Regarding QE, the House of Lord report states that "quantitative easing is particularly effective as a tool to stabilize financial markets [...] an effective monetary policy tool when it is deployed at times of crisis, when financial markets are dysfunctional or in distress" (House of Lords, 2021, p. 19). Similarly, the ECB, when reviewing its pandemic emergency purchasing program, asserts that "PEPP averted an escalation of tail risks associated with pro-cyclical financial amplification mechanisms" (Altavilla *et al*, 2021, p. 29).

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