

REPORT OF THE COVID-19
MARKET IMPACT WORKING GROUP

Experiences of European Markets, UCITS, and European ETFs During the COVID-19 Crisis

DECEMBER 2020

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About the Report of the COVID-19 Market Impact Working Group

The *Report of the COVID-19 Market Impact Working Group* is being issued under the auspices of the Investment Company Institute's COVID-19 Market Impact Working Group. This group of senior industry executives is examining the causes of the 2020 market turmoil and the experiences of regulated funds. The report is intended to provide a sound, data-based foundation for any future regulatory discussions or other responses that could affect regulated funds and their investors. The report was written by a team from ICI's Research, Law, Industry Operations, and ICI Global groups.

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Report of the COVID-19 Market Impact Working Group Series

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- » "The Impact of COVID-19 on Economies and Financial Markets"
- » "Experiences of US Exchange-Traded Funds During the COVID-19 Crisis"
- » "Experiences of US Money Market Funds During the COVID-19 Crisis"

Forthcoming

- » "Experiences of US Bond Mutual Funds During the COVID-19 Crisis"

Experiences of European Markets, UCITS, and European ETFs During the COVID-19 Crisis

Key Points

- » Europe's first cases of COVID-19 were detected in January 2020. Beginning in March, governments in many European Union countries began to lock down their economies in varying degrees to combat the health crisis. Collectively, these actions by national authorities, driven by the public health crisis, brought the EU economy to a grinding halt.
- » With the virus outbreak spreading to Europe, stock prices in European equity markets started falling and volatility soared. After reaching their low points in late March, European equity markets started to rally, albeit at a slower pace than the US equity market.
- » Developments in European fixed-income markets also reflected the uncertainty engendered by the spread of the virus and subsequent surge in demand for liquidity. Short-term funding markets in Europe came under increasing pressure during the first two weeks of March. In the face of a tremendous demand for liquidity or a "dash to cash," short- and long-term European credit markets froze, with sellers finding it extremely difficult, if not impossible, to find buyers for trades of any reasonable size for even very high-quality credits.
- » As in the United States, the European Union and the United Kingdom saw swift central bank intervention, which was intended to stabilize markets and protect the credit supply. Although the overall objectives of the European Central Bank (ECB) and Bank of England (BoE) programs and the US Federal Reserve facilities were the same—to restore liquidity and support the flow of credit to the economy—the ECB and BoE programs had a limited direct impact on money market funds.
- » The COVID-19 crisis generated extreme uncertainty and a dash to cash. Among UCITS, both money market funds and long-term funds experienced outflows.
- » In the second half of March, European investors in money market funds sought to protect and build their liquidity. During the two weeks at the height of the market stress, outflows from low volatility net asset value (LVNAV) funds denominated in US dollars (€69 billion), euro- and sterling-denominated LVNAV funds (€41 billion), and French-domiciled variable net asset value (VNAV) funds (€39 billion) were only partly offset by inflows to public debt constant net asset value funds (€55 billion).
- » By the end of March total net assets of UCITS money market funds had declined 6.2 percent from their level at the end of February. Assets in LVNAV funds denominated in US dollars and French-domiciled VNAV funds were 28 percent and 16 percent lower, respectively; whereas assets in euro and sterling LVNAV funds increased slightly from their February levels. As financial markets began stabilizing in April following monetary and fiscal interventions, UCITS money market funds, in aggregate, experienced inflows.
- » Equity UCITS saw aggregate outflows in March but these amounted to only 1.5 percent of equity fund assets as of the end of February. Although fixed-income UCITS experienced larger outflows than equity UCITS, these outflows were fairly moderate, at 5.1 percent of their February assets.
- » During the COVID-19 crisis, the overwhelming majority of UCITS continued to operate normally and redeem shares upon demand.

- » According to a survey of ICI member fund complexes on liquidity management tools, all of the responding fund complexes adopted—that is, they had in at least one of their UCITS prospectuses—at least one of the liquidity management tools that are permissible in Ireland, Luxembourg, and the United Kingdom. Besides suspensions and gates, the individual tools most often adopted were in-kind redemptions (86 percent), temporary borrowings (72 percent), and swing pricing (52 percent had partial swing pricing and 14 percent had full swing pricing). A third of responding fund complexes had adopted anti-dilution levies and redemption fees—57 percent of these respondents had not adopted swing pricing as a tool. Significantly fewer respondents had adopted notice periods, dual pricing, and side pockets in their toolkits.
- » The survey results show that there is significant variation in UCITS' adoption of swing pricing across jurisdictions in which the respondents domiciled their UCITS.
- » During the COVID-19 stress period, 62 percent of respondents used at least one liquidity management tool—swing pricing, temporary borrowing, anti-dilution levies, redemption fees, notice periods, or dual pricing. None of the respondents' UCITS employed suspensions, gates, or in-kind redemptions.
- » Swing pricing was the tool that was used most frequently by respondents. Among respondents that had adopted partial swing pricing, 90 percent executed a swing for at least one of their UCITS in March 2020, and all respondents that had adopted full swing pricing executed a swing for at least one of their UCITS in March 2020. Respondents that had adopted swing pricing also noted that net asset values were swung more frequently during the stress period.
- » In March, a very small percentage of UCITS suspended redemptions for a short period of time. These UCITS were generally dealing with idiosyncratic circumstances in their home jurisdictions. The primary reason for suspensions was concerns about fund valuation, not an inability to meet redemption requests.
- » Despite unprecedented market volatility in March caused by the COVID-19 crisis, the European exchange-traded fund (ETF) ecosystem—generally thought of as ETF issuers, authorized participants, and ETF liquidity providers—proved its resilience. ETF shares traded smoothly and efficiently in the secondary market. In addition, ETFs acted as a price discovery tool for investors. This was particularly true in the fixed-income market, where market participants faced challenges in finding liquidity and establishing pricing for individual bonds.

Introduction

The European Union has the second-largest regulated fund industry in the world with €10.1 trillion¹ of total net assets in Undertakings for Collective Investment in Transferable Securities (commonly referred to as UCITS) as of September 30, 2020.² During the stressed period in March, the experiences of EU markets and UCITS (including money market funds) were similar to those in the United States. This paper will explore in greater detail the unfolding of the pandemic in Europe (including governmental responses), the EU market reaction to the pandemic and to government interventions, the experience of UCITS and their investors, and UCITS' use of liquidity management tools during the stressed period. The experiences of ETFs will also be discussed. Appendix A provides a summary of the key regulatory requirements for UCITS.

EU Epidemiologic and Macroeconomic Backdrop to COVID-19 and Government Responses

Early Days of Outbreak in Europe

Europe's first cases of COVID-19 were detected in January, with France confirming its first case on January 24 in Bordeaux.³ Additional outbreaks followed: Italy reported its first case on January 30, and Spain and the United Kingdom confirmed their first cases on January 31. In the subsequent weeks, the number of cases throughout the European Union increased significantly, and on February 24, the European Commission announced €232 million in aid to support global efforts to tackle the outbreak.

Beginning in March, governments in many EU countries began to lock down their economies in varying degrees to combat the health crisis. On March 8, after two deaths in Italy, the national and local governments placed a lockdown on several towns in Lombardy. The next day, the government of Italy imposed a national quarantine, restricting the movement of people except for limited circumstances and mandating the temporary closure of nonessential shops and businesses. On March 14, France closed all nonessential public places, and three days later, the French government imposed a mandatory home confinement for 15 days.

Spain similarly imposed a lockdown on March 14, ordering people to stay at home for two weeks unless they had to buy food or medicine or go to work, a medical appointment, or the hospital. On March 29, the Spanish government imposed further restrictions that required all nonessential workers to remain at home for another two weeks. In the United Kingdom, on March 23, Prime Minister Boris Johnson announced a stay-at-home order effective immediately, and all nonessential shops and services were ordered to close. Almost all of the other jurisdictions in the European Union took similar measures.

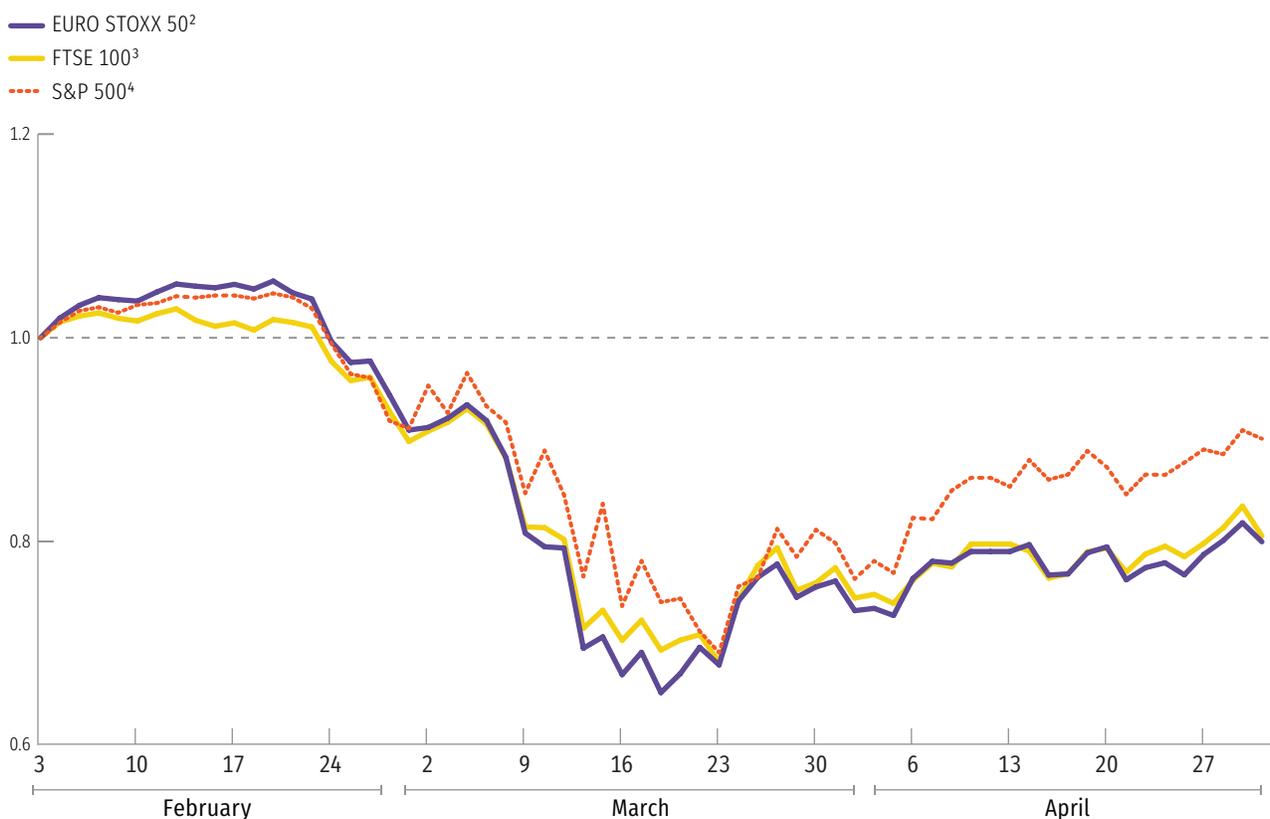
Effects on the Stock and Bond Markets

As the public health crisis unfolded across the globe, investors in the European markets, as in the United States and other jurisdictions, recognized its significant negative impact on their real economies. With the virus outbreak spreading to Europe, stock prices in European equity markets started falling and volatility soared. By the end of February, the EURO STOXX 50 Index and the FTSE 100 Index had declined 14 percent and 13 percent, respectively, from their peak in mid-February (Figure 4.1). Over the first two weeks of March, the EURO STOXX 50 and the FTSE 100 dropped a further 26 percent and 22 percent, respectively—both recorded their worst one-day returns with double-digit losses on March 12. The EURO STOXX 50 Index reached its low point on March 18, and the FTSE 100 Index bottomed out on March 23—the same day the S&P 500 index in the United States hit its trough. After these low points, European equity markets started to rally, albeit at a slower pace than the US equity market.

FIGURE 4.1

European Stock Markets Declined Sharply in February and March 2020

Selected stock indexes,¹ daily, February 3–April 30, 2020



¹ Indexes are scaled to 1.0 on February 3, 2020.

² The EURO STOXX 50 Index is expressed in euros.

³ The FTSE 100 Index is expressed in British pounds sterling.

⁴ The S&P 500 index is expressed in US dollars.

Source: ICI calculations of Bloomberg data

Given the significant rise in uncertainty about the extent and duration of the crisis, risk aversion—or fear—in Europe and the United States spiked in March. Reflecting this uncertainty, measures of implied volatility in European stock prices, which are often described as fear indexes, jumped far above their average levels over the previous eight years (Figure 4.2), peaking on March 16, 2020, the same day as the comparable measure (the Chicago Board Options Exchange’s CBOE Volatility Index, or VIX) in the United States peaked.

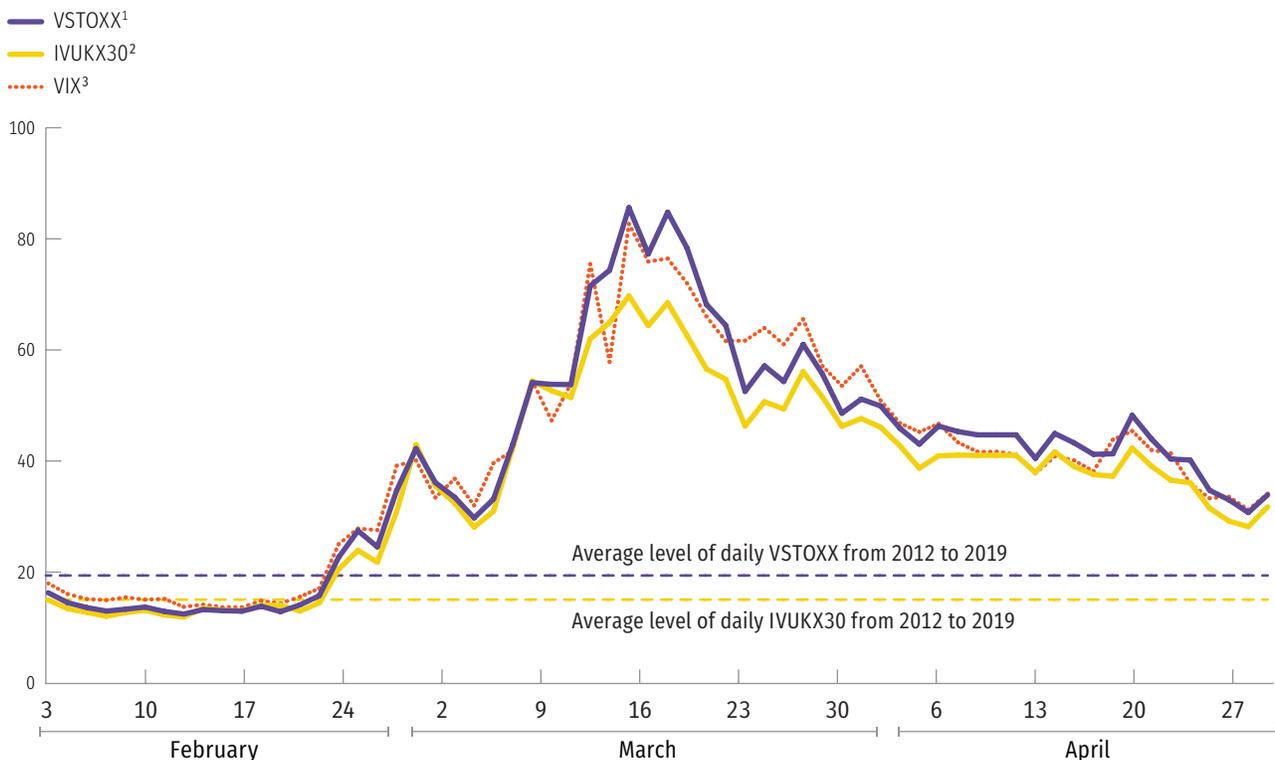
Volatility measures in Europe and the United States generally declined after March 16, but nevertheless remained elevated relative to their historical averages. In addition, since mid-March, volatility has spiked from time to time with some jumps reflecting upticks in the numbers of new COVID-19 cases or the reimposition of containment measures and health mandates.

Developments in European fixed-income markets also reflected the uncertainty engendered by the spread of the virus and subsequent surge in demand for liquidity. Short-term funding markets in Europe came under increasing pressure during the first couple of weeks of March 2020. This pressure can best be seen through measures of the US dollar funding market.

FIGURE 4.2

European Stock Market Volatility Increased Sharply at the Beginning of March 2020

Level of indexes, daily, February 3–April 30, 2020



¹ The VSTOXX, which is derived from price inputs on EURO STOXX 50 Index options, represents an expectation of 30-day forward-looking volatility.

² The IVUKX30, which is derived from price inputs on FTSE 100 Index options, represents an expectation of 30-day forward-looking volatility.

³ The VIX, which is derived from price inputs on S&P 500 index options, represents an expectation of 30-day forward-looking volatility.

Source: ICI calculations of Bloomberg data

US Dollar Funding Market

To fund their global operations, market participants can either borrow US dollars directly in the money market or borrow US dollars by borrowing in their local currency and converting into US dollars using currency swaps. If strains arise in global dollar funding markets, foreign banks may be able to borrow US dollars from their respective central banks, which in turn may be able to borrow dollars from the Federal Reserve. The Federal Reserve has standing “swap arrangements” with five major central banks, under which these banks can and did borrow large amounts of US dollars in March.^{1, 2}

One common measure used to monitor the functioning of the US dollar funding market is the implied basis on US dollar swaps in the foreign exchange market, which is commonly referred to as the USD currency basis. The USD currency basis represents the difference between the interest rate to borrow US dollars directly in the cash money market and the interest rate implied from borrowing in the local currency and using a currency swap to convert to US dollars. For example, Figure 4.3 shows the USD currency basis as the difference between the three-month London Interbank Offered Rate (LIBOR) and the implied US dollar interest rate on three-month foreign exchange swaps for the euro (EUR) and the British pound sterling (GBP).

A positive USD currency basis indicates that it is cheaper to borrow US dollars through foreign exchange swaps than in the cash money market; whereas a negative value indicates that it is cheaper to borrow US dollars in the cash money market than through foreign exchange swaps. During normal times, arbitrageurs can keep the USD currency basis close to zero by borrowing US dollars from banks and lending them into the foreign exchange market. If, however, banks pull back from lending US dollars into this market because of balance sheet constraints, the arbitrage mechanism breaks down and the USD currency basis can widen considerably, which is what happened in March.³

¹ For example, a swap arrangement allows the ECB to receive US dollars from the Federal Reserve System, which keeps euros provided by the ECB as collateral until the swap matures. In turn, the ECB lends the US dollars that it has received to its domestic banks against eligible collateral.

² These five major central banks are the Bank of Canada, BoE, Bank of Japan, ECB, and Swiss National Bank.

³ See Stefan Avdjiev, Egemen Eren, and Patrick McGuire, “Dollar Funding Costs During the COVID-19 Crisis Through the Lens of the FX Swap Market,” *BIS Bulletin*, no. 1, April 1, 2020, available at www.bis.org/publ/bisbull01.pdf.

Throughout February 2020, USD currency bases for the EUR and GBP were close to zero and within their normal ranges (Figure 4.3). As the crisis unfolded over the first two weeks of March and European market participants sought to shore up their US dollar positions, these three-month US dollar currency bases dropped precipitously, reflecting a significant shortage in US dollar funding.

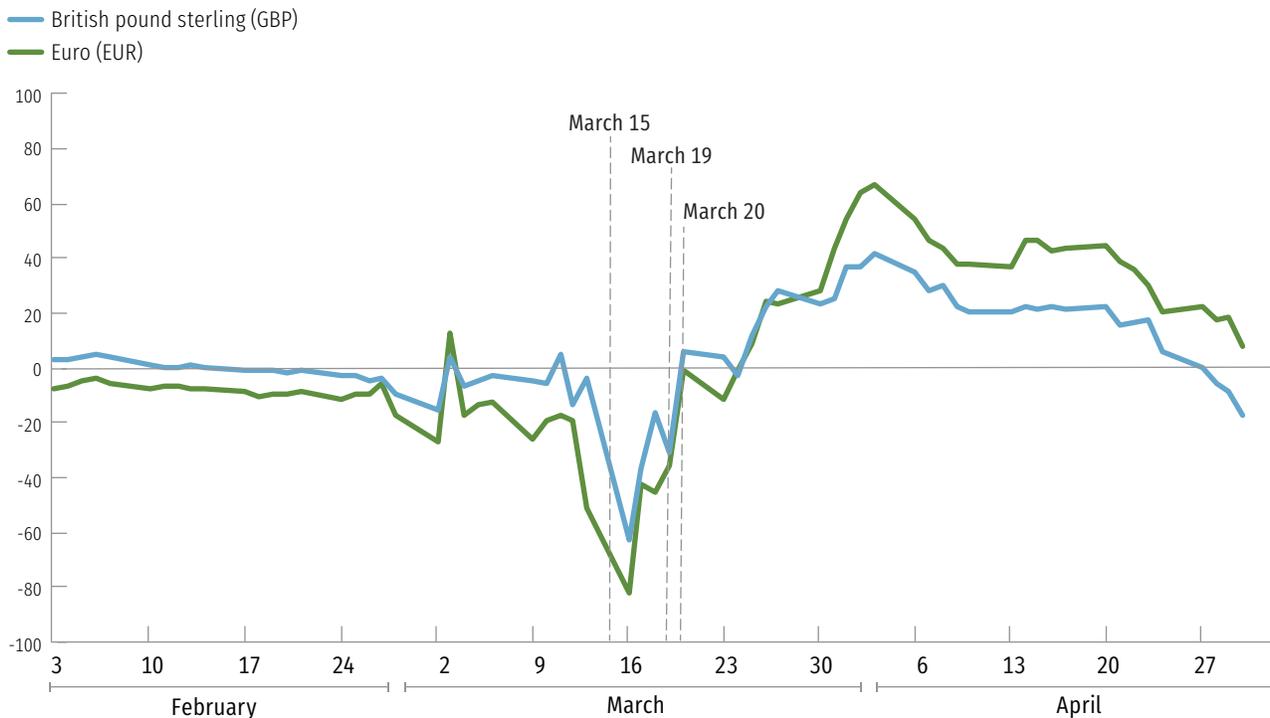
Despite the US Federal Reserve’s announcement on March 15 that it was easing the terms at which major central banks could borrow US dollars via their swap lines, global US dollar funding markets remained under pressure with the three-month USD currency basis reaching negative 82 basis points for the EUR and negative 62 basis points for the GBP on March 16. In response, on March 19, the Federal Reserve announced the establishment of temporary swap arrangements with nine additional central banks⁴ and raised the aggregate limit of its swap lines to \$450 billion. On March 20, five central banks (including the ECB and BoE), in coordination with the Federal Reserve, announced that they would move to auctioning US dollars in their countries on a daily basis rather than a weekly basis.

Conditions in the USD funding market improved immediately after these announcements, and three-month USD currency bases returned to levels close to zero. By the end of March, the ECB had \$135 billion and the BoE had \$32 billion outstanding in US dollar swaps with the Federal Reserve. This borrowing by the ECB and BoE helped meet demand for US dollar funding by banks and corporations in Europe and alleviate pressure on the US dollar funding market.

FIGURE 4.3

US Dollar Funding Markets Were Significantly Stressed in Mid-March 2020

Three-month USD currency basis, basis points, daily, February 3–April 30, 2020



Source: Bloomberg

In the face of a tremendous demand for liquidity or a “dash to cash” in March 2020, short- and long-term European credit markets froze. Sellers seeking liquidity found it extremely difficult, if not impossible, to find buyers for trades of any reasonable size for even very high-quality credits. Many observers have indicated that bank regulatory requirements likely constrained dealers’ ability to intermediate trades in fixed-income securities such as commercial paper and corporate bonds.⁵

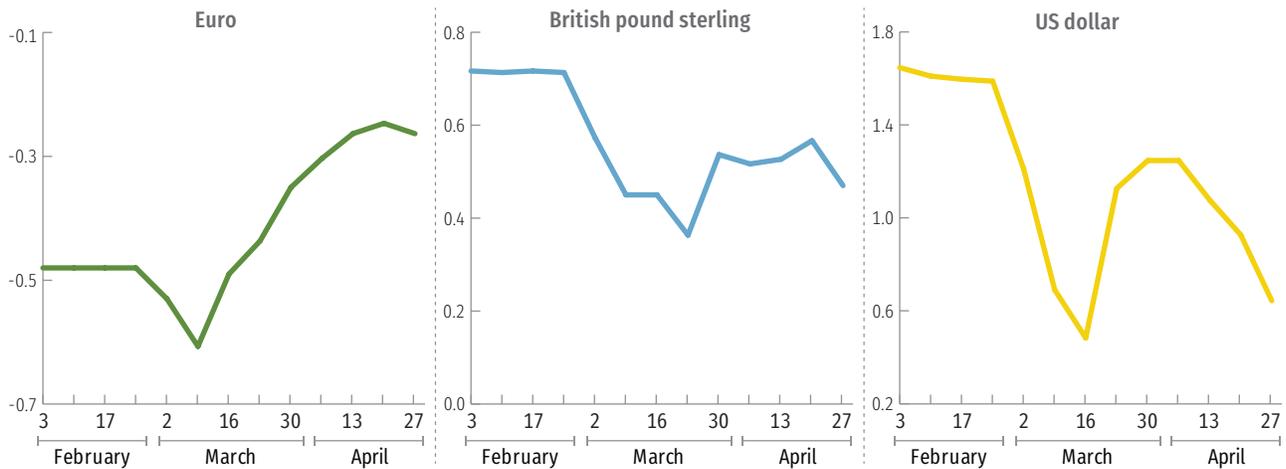
In normal times, high-quality investments—consisting of short-term sovereign debt, commercial paper, and other instruments with a maturity of 90 days or less, in addition to some overnight holdings—are often considered to be sufficiently liquid for meeting near-term obligations. During March, however, investors’ perceptions of what constituted liquid investments were far narrower: only securities that matured overnight, or perhaps within seven days, were acceptable. As shown in Figure 4.4, after initially dropping in line with the Federal Reserve and BoE easing monetary policy in early March, yields on longer-term commercial paper denominated in euros, British pounds, and US dollars jumped in mid-March.

This posed additional challenges for borrowers in terms of “rollover risk,” especially in the commercial paper market, and these concerns about investors’ willingness to buy newly issued commercial paper added to pressures in the commercial paper market. Most commercial paper is of relatively short maturity. When these short-term loans mature, issuers often replace, or roll over, the maturing paper with newly issued commercial paper. This generally works well in normal times. During periods of stress, however, if corporations cannot find buyers for their newly issued commercial paper, they may have to tap bank lines of credit, issue term corporate bonds—which have higher interest expense than commercial paper—or even sell assets to have an appropriate level of cash on hand.

FIGURE 4.4

Commercial Paper Rates Rose During Turmoil in Mid-March 2020

Average yield on three-month financial commercial paper,* percent, weekly, February 3–April 30, 2020



*The average yield on three-month commercial paper is derived from a basket of high-quality financial issuers in each currency.

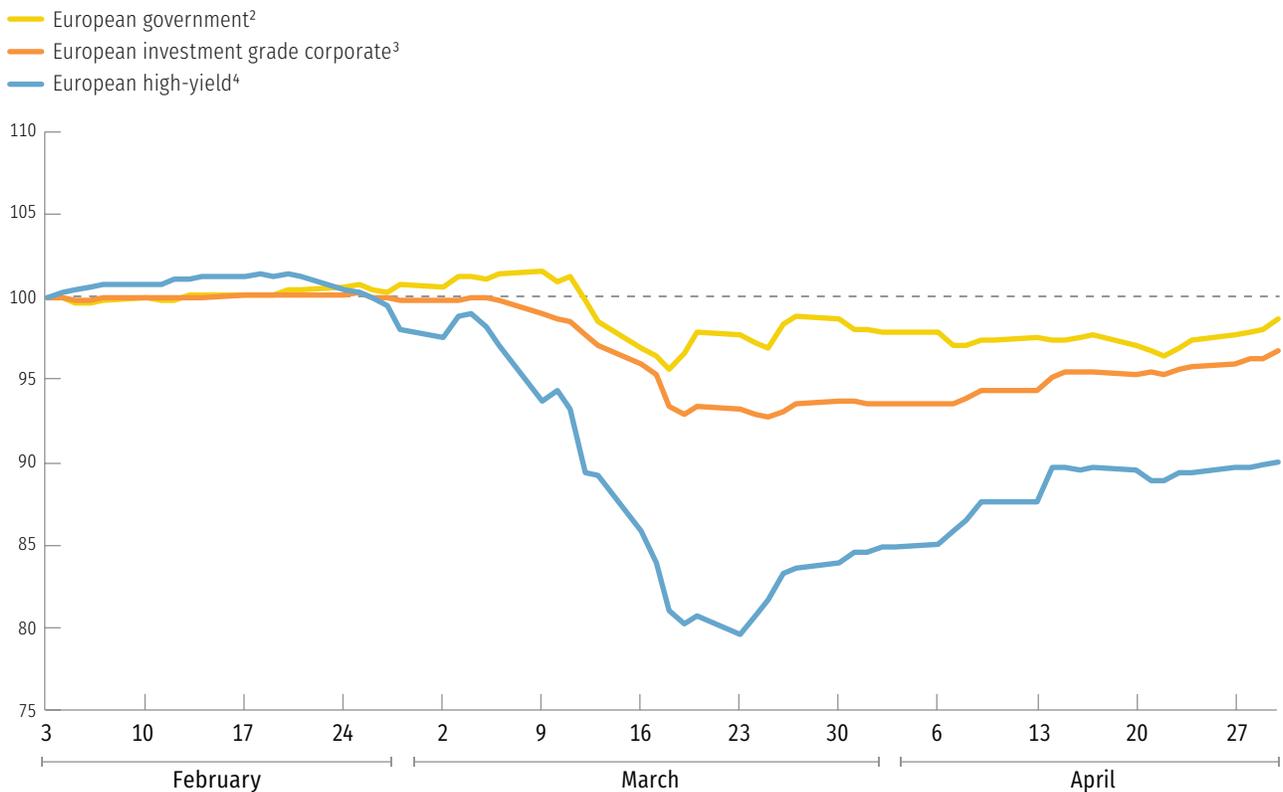
Source: “Lessons from COVID-19: The Experience of European MMFs in Short-Term Markets,” BlackRock, July 2020

In addition, banks' needs to preserve their own cash may have contributed to difficulties in the commercial paper market and limited their ability to repurchase their own commercial paper. In early to mid-March, banks faced increasing draws on committed credit lines by their business clients. By mid-March, some banks reportedly were unwilling to repurchase their own commercial paper. Difficulties in the commercial paper market in March reflected complex interactions and interconnections in the financial system, rather than the actions of any particular group of market participants.

Pressures also arose in the European bond markets in March 2020. Bond prices fell across the credit quality spectrum—from European sovereign to high-yield debt (Figure 4.5)—consistent with investors selling long-term bonds to move to the very shortest and most-liquid part of the yield curve. This is further evidence that March 2020 was a flight to cash in the face of the tremendous uncertainty arising from the pandemic. The move to cash in March reflected the significant negative impact of the pandemic on the real economies and the accompanying increased credit risk with valuations on European high-yield bonds bottoming out to about 20 percent below their February 3 levels.

FIGURE 4.5
Value of European Bonds Dropped Sharply in March 2020

Selected bond indexes,¹ daily, February 3–April 30, 2020



¹ Indexes are scaled to 100 on February 3, 2020.

² The FTSE EMU Government Bond Index is expressed in euros.

³ The S&P Eurozone Investment Grade Corporate Bond Index is expressed in euros.

⁴ The FTSE European High-Yield Market Index is expressed in euros.

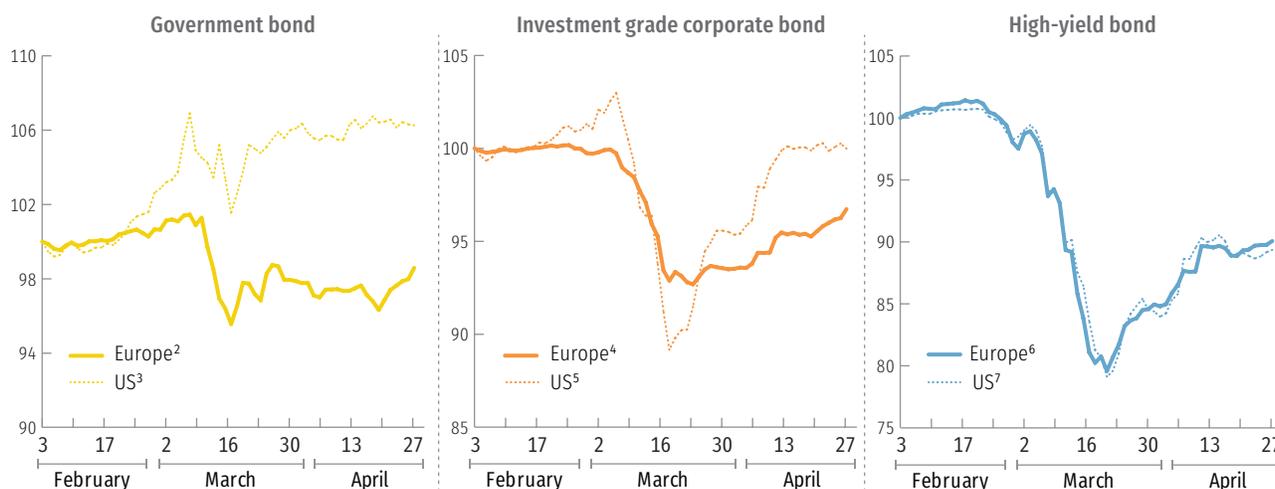
Source: ICI calculations of Bloomberg data

High-yield bond values followed similar trajectories in Europe and the United States, but valuations on other bonds diverged in the two markets (Figure 4.6). In the government sector, prices on US Treasury securities rose steeply from the last week of February through the first week of March as investors globally sought safe assets. In the aggregate, prices on European sovereign bonds also drifted up, but to a lesser extent than on US Treasuries, as price gains on German Bunds were largely offset by price declines on Italian and Spanish sovereign bonds. As investors sought liquidity and started selling government bonds, prices on US Treasuries and European sovereigns dropped over the next two weeks. In the investment grade corporate sector, prices on US bonds rose in line with US Treasuries during the flight to safety, while prices on European investment grade corporate bonds remained steady. During the dash for cash in the next two weeks, prices on both European and US investment grade corporate bonds declined sharply, with those on US bonds falling faster and farther. In the high-yield sector, bond prices in the United States and Europe moved largely in lockstep from the beginning of February through the end of April.

FIGURE 4.6

Values on European and US Bonds During March 2020

Selected bond indexes, daily,¹ February 3–April 30, 2020



¹ Indexes are scaled to 100 on February 3, 2020.

² The FTSE EMU Government Bond Index is expressed in euros.

³ The Bloomberg Barclays US Treasury Index is expressed in US dollars.

⁴ The S&P Eurozone Investment Grade Corporate Bond Index is expressed in euros.

⁵ The S&P 500 Investment Grade Corporate Bond Index is expressed in US dollars.

⁶ The FTSE European High-Yield Market Index is expressed in euros.

⁷ The S&P US High Yield Corporate Bond Index is expressed in US dollars.

Source: ICI calculations of Bloomberg data

EU and UK Central Bank Responses

As in the United States, the European Union and the United Kingdom saw swift central bank intervention.⁶

From March through June, the ECB adopted a broad package of crisis measures, citing the need to stabilize markets, protect the credit supply, and neutralize the pandemic-related downside risks to the inflation path. First, on March 12, the ECB expanded the size of its long-standing Asset Purchase Programme (APP)⁷ with an additional €120 billion allocated for the rest of 2020. Shortly thereafter, on March 18, the ECB launched its flagship initiative—the Pandemic Emergency Purchase Programme (PEPP)—a new, temporary, and flexible program to purchase private and public sector securities.⁸ Initially launched with a €750 billion cap on June 4, 2020, the PEPP's cap was increased to a total of €1,350 billion.⁹ On December 10, the ECB further expanded the PEPP by €500 billion and extended its term by nine months to March 2022. At the time it launched the PEPP, the ECB also made adjustments to one element of the APP, by amending the Corporate Sector Purchase Programme (CSPP) to permit the purchase of creditworthy nonfinancial commercial paper and to lower the maturity thresholds for eligibility.¹⁰ In addition, the ECB substantially eased the conditions under which banks can obtain liquidity under the ECB's targeted long-term refinancing operations, to strengthen the incentives for banks to continue lending to the real economy.¹¹

Like the ECB, the BoE also took action to address the challenges created by the pandemic. On March 17, it announced the launch of the COVID Corporate Financing Facility (CCFF)¹² under which the BoE makes direct purchases of commercial paper of up to a one-year maturity issued by firms making a “material contribution to the UK economy.” The BoE will operate the CCFF for at least 12 months and for as long as steps are needed to relieve cash flow pressures on the firms at which the facility is directed.

Subsequently, the BoE announced on March 19 a further package of measures under its existing Asset Purchase Facility (APF), and on March 24, the activation of the Contingent Term Repo Facility (CTRF). The updated APF authorized the BoE to purchase at least £10 billion of eligible sterling nonfinancial corporate bonds, taking the stock of purchased corporate bonds to at least £20 billion.¹³ The CTRF was activated to help alleviate frictions observed in money markets, both globally and domestically.¹⁴ It served as a temporary enhancement to BoE's sterling liquidity insurance facilities and allowed participants to borrow against collateral satisfying prescribed criteria.

Although the overall objectives of the ECB and BoE programs and the US Federal Reserve facilities were the same—to restore liquidity and support the flow of credit to the economy—there were some differences in the mechanisms used to achieve those goals. First, a number of US Federal Reserve facilities helped facilitate secondary trading by lending to banks against “eligible collateral,” which in turn allowed banks to intermediate trades by purchasing those assets from investors who had difficulty finding buyers during the stressed period.¹⁵ In contrast, the measures implemented by the ECB and BoE focused more directly on banks' balance sheets, with the central banks taking assets off the books of, and providing cash to, banks.¹⁶ Bank lending remains a very significant source of funding in Europe,¹⁷ and maintaining funding to banks helps them continue to lend to the real economy.

Second, the ECB and BoE programs provided little support for UCITS money market funds.¹⁸ For example, as is natural, the PEPP was limited to purchasing euro-denominated assets, thus precluding any support for the 35 percent of assets in UCITS money market funds that were denominated in US dollars at the end of February. In addition, even among euro-denominated assets, the PEPP was not authorized to purchase commercial paper issued by financial institutions or bank certificates of deposit, instruments that are widely held by UCITS money market funds.^{19, 20}

Impact of Government Responses on Liquidity in Fixed-Income Markets

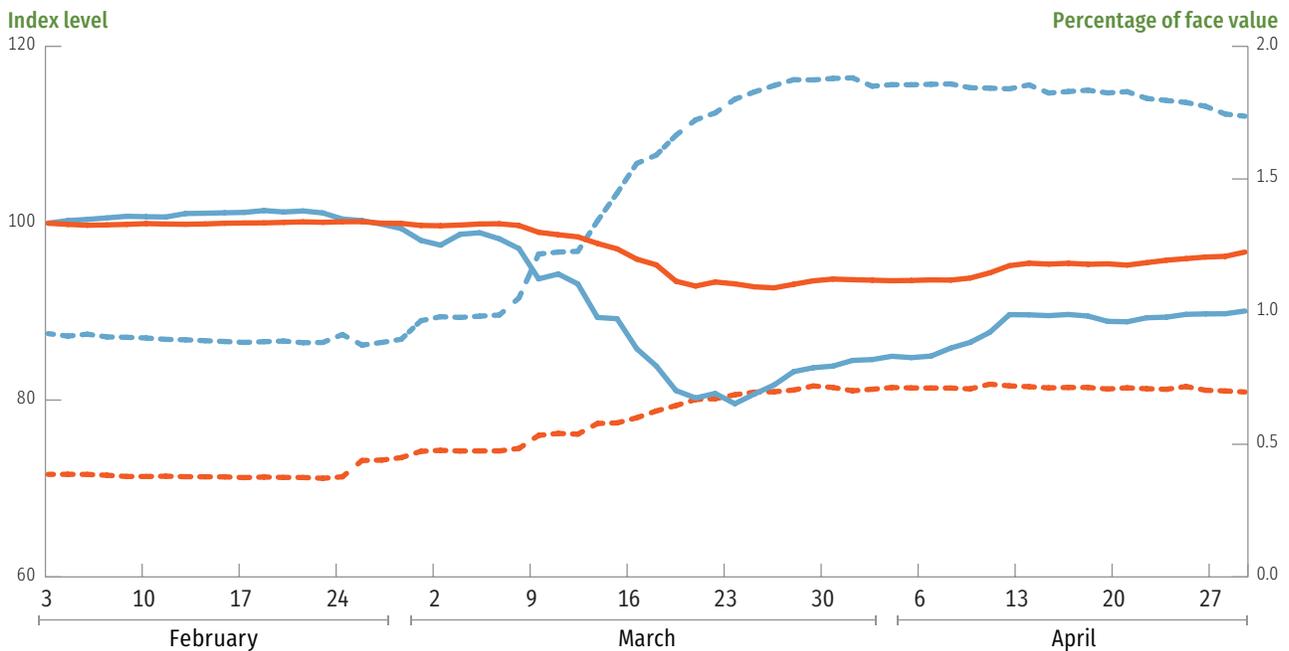
As the European corporate bond markets started to deteriorate in early March, liquidity—measured by the relative bid-ask spread—also started to evaporate. As shown in Figure 4.7, bid-ask spreads on European investment grade and high-yield corporate bonds started increasing and reached their widest points around March 23. Central banks offered relief to fixed-income markets under the APP and PEPP from the ECB and the CCFF and CTRF from the BoE. The programs were designed to purchase, among other assets, longer maturity corporate bonds to support prices and liquidity in their secondary market. While a causal effect is difficult to establish, it seems the programs supported the European corporate bond markets by providing a floor for bond values in the second half of March. Liquidity in the European corporate bond market stopped deteriorating and ultimately stabilized, albeit at a lower level with higher bid-ask spreads.

FIGURE 4.7

Liquidity in European Fixed-Income Credit Markets

Daily, February 3–April 30, 2020¹

- European investment grade corporate² (left axis)
- European high-yield³ (left axis)
- - - Investment grade bid-ask spread (right axis)
- - - High-yield bid-ask spread (right axis)



¹ Indexes are scaled to 100 on February 3, 2020.

² The S&P Eurozone Investment Grade Corporate Bond Index is expressed in euros.

³ The FTSE European High-Yield Market Index is expressed in euros.

Sources: MarketAxess and ICI calculations of Bloomberg data

Experiences of UCITS in the European Union During the COVID-19 Crisis

UCITS are collective investment undertakings established and authorized under a harmonized EU legal framework, under which a UCITS established and authorized in one EU Member State can be sold cross-border into other Member States without a requirement for an additional full registration. This “European passport” is a central feature of the UCITS product and enables fund sponsors to create a single product for the entire European Union rather than having to establish an investment fund product on a jurisdiction-by-jurisdiction basis. UCITS include money market funds, long-term funds—such as equity and fixed-income funds—and ETFs.²¹ Appendix A provides a summary of the key regulatory requirements to which UCITS are subject. UCITS money market funds also are subject to the Money Market Fund Regulation (MMFR), which also is summarized in the appendix.

The COVID-19 crisis generated extreme uncertainty and led to a massive shock to the real economy that ultimately strained global financial markets. As the crisis unfolded, market participants reduced their risk exposure and sought cash and liquidity. This global phenomenon was exhibited by all market participants, including UCITS investors. Like US prime money market funds and long-term mutual funds, both UCITS money market funds and UCITS long-term funds experienced outflows.

UCITS Money Market Funds

UCITS money market funds are used by both institutional and retail investors to manage liquidity. At the end of February 2020, just before the COVID-19 crisis hit markets with full force, net assets in UCITS money market funds domiciled in the European Union totaled €1.3 trillion—with 44 percent domiciled in Ireland, 26 percent in France, 25 percent in Luxembourg, and the remainder in the United Kingdom and other EU countries.^{22, 23} Based on data from Morningstar, 47 percent of total net assets in UCITS money market funds were in institutional share classes; 53 percent were in retail share classes.²⁴

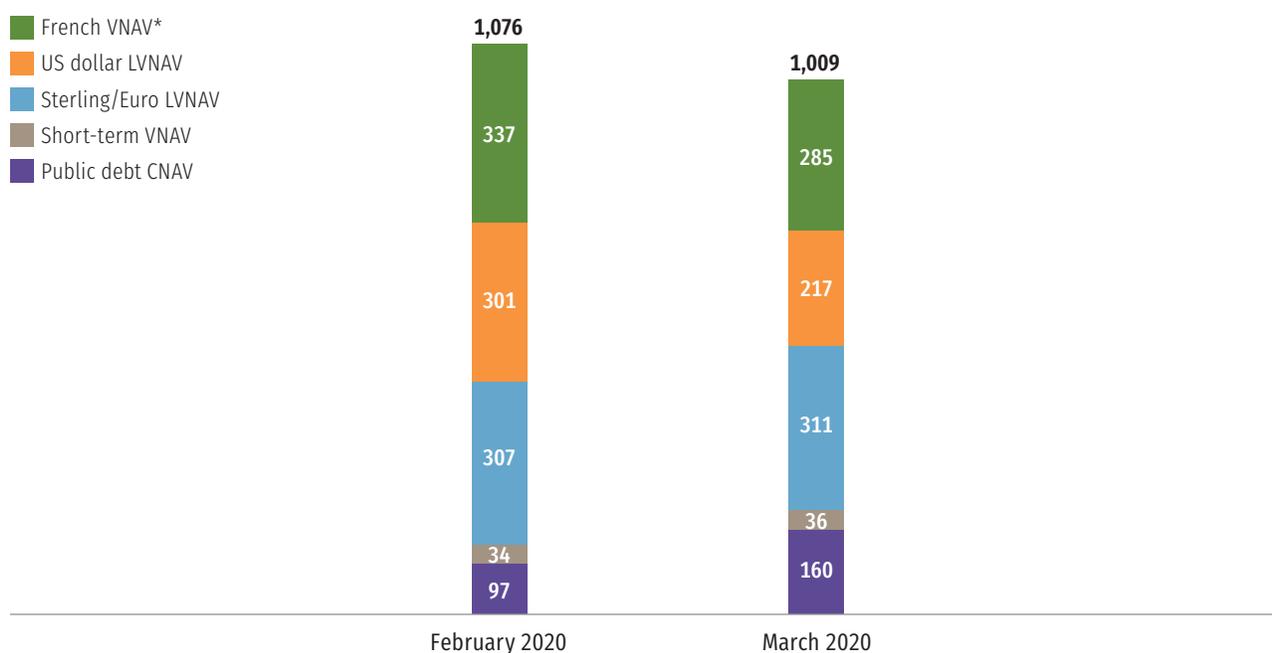
UCITS money market funds are classified into four different categories, each with specific regulatory requirements, based on their assets and treatment of their NAV: public debt constant NAV (CNAV) money market funds, low volatility NAV (LVNAV) money market funds, short-term variable NAV (VNAV) money market funds, and standard VNAV money market funds.²⁵ Public debt CNAV and LVNAV money market funds are primarily used by institutional investors.²⁶

Like US money market fund investors, European investors sought to protect or build liquidity in March. Figure 4.8 shows the net assets of UCITS money market funds that are domiciled in Ireland, Luxembourg, the United Kingdom, and France, which total €1,076 billion, or 84 percent of the EU market, at the end of February.²⁷ By the end of March, total net assets fell to €1,009 billion as outflows from LVNAV money market funds denominated in US dollars and French VNAV funds—which are predominantly denominated in euros and sold to French residents²⁸—were only partly offset by inflows to public debt CNAV funds. In March, LVNAV funds denominated in US dollars had outflows of €83 billion or 28 percent of their February month-end assets, and French VNAV funds had outflows of €53 billion or 16 percent of their February assets. In contrast, public debt CNAV funds experienced inflows of €63 billion, or 65 percent of their February assets.

FIGURE 4.8

UCITS Money Market Fund Assets Domiciled in Ireland, Luxembourg, the United Kingdom, and France

By category, billions of euros, February 29, 2020, and March 31, 2020



* Data for French VNAV funds include both standard and short-term VNAV funds.

Note: Data from iMoneyNet include UCITS money market funds that are both domiciled in Ireland, Luxembourg, and the United Kingdom and registered with the Institutional Money Market Funds Association (IMMFA). Data from Morningstar Direct include UCITS money market funds domiciled in France.

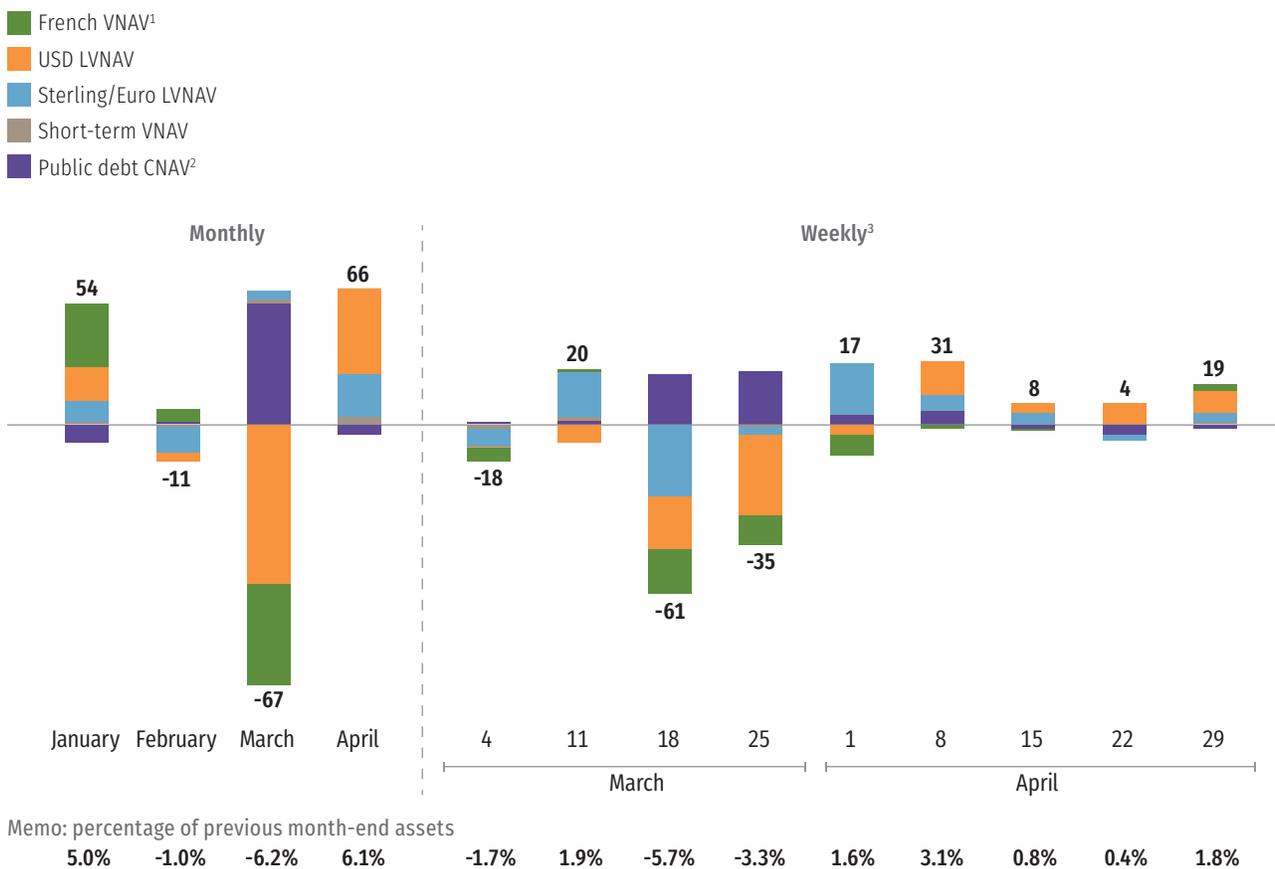
Source: ICI calculations of iMoneyNet and Morningstar Direct data

During the first week of March, UCITS money market funds domiciled in Ireland, Luxembourg, the United Kingdom, and France saw outflows of €18 billion, or 1.7 percent of their February month-end assets, which primarily reflected outflows from sterling- and euro-denominated LVNAV funds (Figure 4.9). During the second week of March, UCITS money market funds experienced inflows of €20 billion, or 1.9 percent of previous month-end assets, most of which was attributable to sterling and euro LVNAV money market funds, which had inflows of €23 billion, or 7.6 percent of their February assets. The significant inflows into sterling and euro LVNAV funds were driven by gains from derivatives margins.²⁹

FIGURE 4.9

Investors Sought Liquidity in Public Debt CNAV, or Government, Money Market Funds

Change in money market fund assets domiciled in Luxembourg, Ireland, the United Kingdom, and France, billions of euros, January–April 2020



¹ French VNAV funds include both standard and short-term VNAV funds.

² The vast majority of public debt CNAV money market funds are denominated in US dollars.

³ Weekly data for French VNAV funds only include those with available daily total net assets from Morningstar.

Note: Data from iMoneyNet include UCITS money market funds that are both domiciled in Ireland, Luxembourg, and the United Kingdom and registered with the Institutional Money Market Funds Association (IMMFA). Data from Morningstar Direct include UCITS money market funds domiciled in France.

Source: ICI calculations of iMoneyNet and Morningstar Direct data

In the third and fourth weeks of March, outflows from UCITS money market funds totaled €96 billion, or 9.0 percent of their February assets (Figure 4.9). For sterling and euro LVNAV funds, the gains from derivatives in the prior week reversed, which resulted in outflows of €41 billion. At the same time, LVNAV funds denominated in US dollars and French VNAV funds had outflows of €69 billion and €39 billion, respectively. In contrast, public debt CNAV funds had inflows of €55 billion during this period.

Outflows from LVNAV funds denominated in US dollars likely were related to inflows into public debt CNAV funds, which are primarily denominated in US dollars. In the United States, net assets shifted from prime money market funds, which have floating NAVs and the ability to invest in short-term high-quality corporate securities, to government money market funds, which have a constant NAV and primarily hold US Treasury securities.³⁰ In the same way, some investors in dollar-denominated UCITS money market funds likely shifted from LVNAV funds, which have exposure to short-term corporate credits, into public debt CNAV funds. As financial markets began stabilizing toward the end of March and into April following monetary and fiscal interventions, UCITS money market funds, in aggregate, experienced inflows in each week.

Long-Term UCITS

Retail and institutional investors use long-term UCITS³¹ to meet their medium- to long-term investment needs. In particular, retail investors rely on equity, fixed-income, and mixed³² funds to meet long-term personal financial objectives, including preparing for retirement and saving for education. At the end of February 2020, long-term UCITS domiciled in the European Union had total net assets of €7.1 trillion—with €3.0 trillion in equity UCITS, €2.4 trillion in fixed-income UCITS, and €1.6 trillion in mixed and other UCITS.³³ Additionally, 74 percent of total net assets in long-term UCITS were in retail share classes and 26 percent in institutional share classes.³⁴

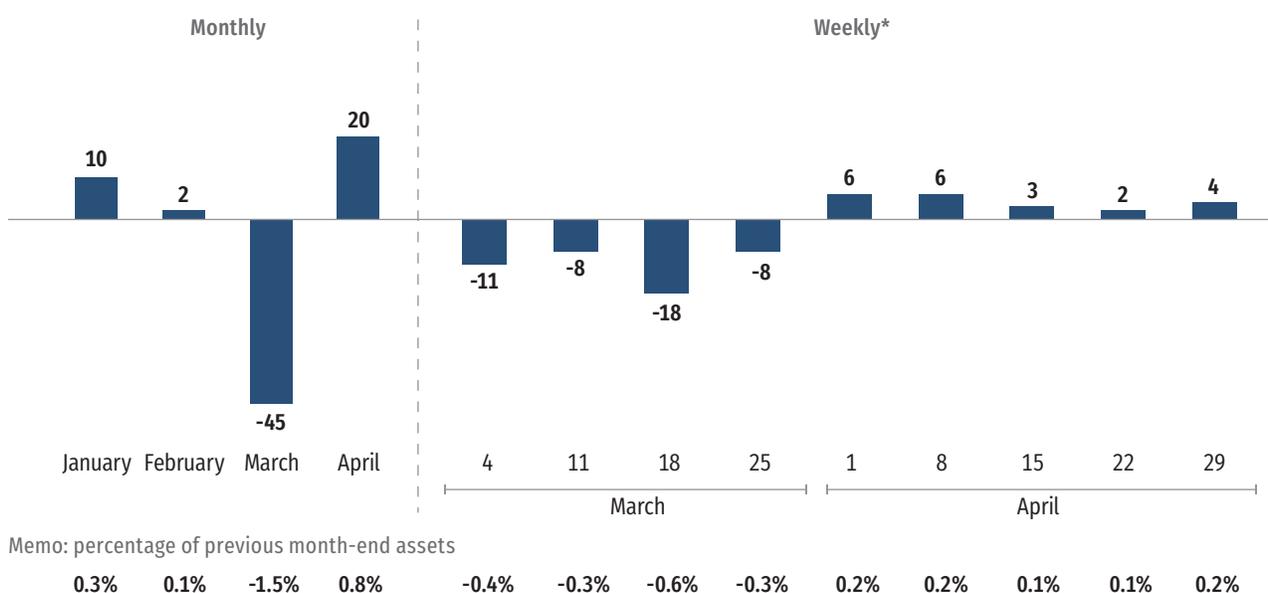
Equity UCITS

During March 2020, equity UCITS experienced mild outflows as European stock markets declined precipitously. Equity UCITS had estimated outflows of €45 billion, 40 percent of which (€18 billion) occurred during the week ended March 18 (Figure 4.10). However, despite the sharp contraction in global equity markets in March, outflows from equity UCITS amounted to only 1.5 percent of total net assets at the end of February. As European and global equity markets slowly recovered at the end of March and throughout April, money steadily flowed into equity UCITS with inflows during each week of April.

FIGURE 4.10

Estimated Outflows from Equity UCITS Were Mild in March 2020

Billions of euros, January–April 2020



*Weekly data only include UCITS with available estimated daily net new cash flow.

Note: Data exclude exchange-traded funds.

Source: ICI calculations of Morningstar Direct data

Fixed-Income UCITS

As the crisis unfolded in March, market participants increasingly sought cash and liquidity. Following steady inflows in February, fixed-income UCITS saw aggregate estimated outflows of €122 billion in March, or 5.2 percent of their total net assets at the end of February, with most of the outflows occurring in the weeks ended March 18 and March 25 (Figure 4.11). Although global and investment grade fixed-income UCITS accounted for the bulk of the euro outflows in March, the outflows from these two categories were relatively moderate compared to their assets. In March, global fixed-income UCITS had €55 billion in outflows, which represented 6.9 percent of their February assets; investment grade fixed-income UCITS had €43 billion in outflows, which represented 3.9 percent of their February assets. High-yield fixed-income UCITS had outflows of €13 billion, or 6.6 percent of their February assets. All categories of fixed-income UCITS—even government—experienced outflows in March, which is consistent with a flight to cash and liquidity by investors.

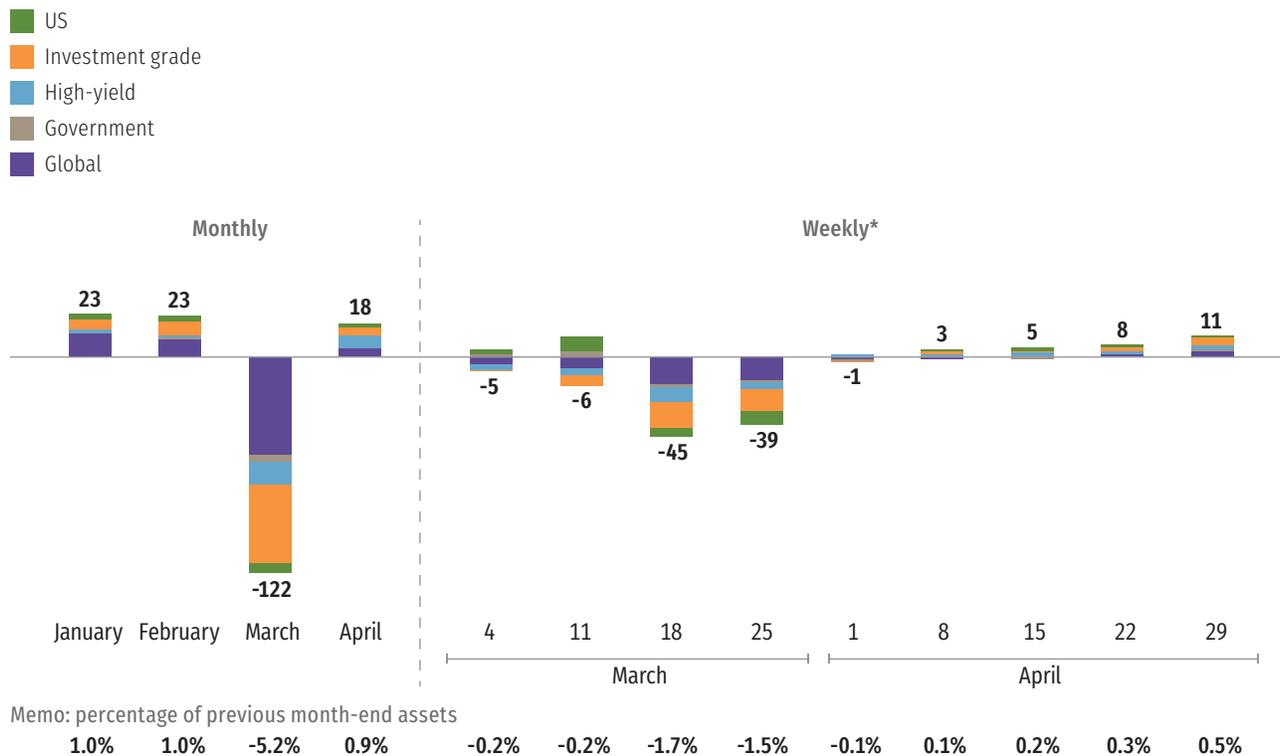
The vast majority of fixed-income UCITS were able to operate normally, manage their liquidity, and meet the higher level of net redemptions without issue during March. The small number of exceptions were UCITS that were generally dealing with idiosyncratic circumstances regarding fund valuation, not an inability to meet redemption requests.³⁵

After the ECB and BoE facilities helped support corporate bond values and restore confidence in the European long-term fixed-income markets, outflows from fixed-income UCITS tapered off and steady weekly inflows resumed in April.

FIGURE 4.11

Estimated Outflows from Fixed-Income UCITS Were Moderate in March 2020

Billions of euros, January–April 2020



*Weekly data only include UCITS with available estimated daily net new cash flow.

Note: Data exclude exchange-traded funds.

Source: ICI calculations of Morningstar Direct data

Use of Liquidity Management Tools by Long-Term UCITS

Overview

This section describes the liquidity management tools available to UCITS and discusses the use of those tools during the COVID-19 stress period. Liquidity management for UCITS does not begin and end with any particular event or stress period. Even before a UCITS is launched, the liquidity of the fund is an important factor in designing the product, and the UCITS' manager considers the liquidity of the assets in relation to the target investors and distribution channels. Liquidity management continues throughout the life of the UCITS through reporting to regulators, senior management, and fund governance.

At the design phase of a UCITS, a UCITS management company must establish an effective liquidity risk management process supported by strong and effective governance. The liquidity risk management process is expected to take into consideration the management of liquidity risks of underlying assets and risks related to liabilities such as investor redemptions and other obligations. The process is required to be effective in normal and stressed market conditions. A UCITS' dealing frequency arrangement also is considered during the design phase. The dealing frequency is expected to be appropriate with regard to the investment strategy and underlying assets throughout the UCITS' entire life cycle.³⁶

Once a UCITS is launched, the UCITS management company must maintain an ongoing liquidity management program to properly manage redemptions and subscriptions in light of the fund's portfolio composition and liquidity profile (for more detail, see Appendix A). Specifically, a UCITS management company is required to have "procedures as are necessary to enable the management company to assess for each UCITS it manages the exposure of that UCITS to market, liquidity, and counterparty risks, including operational risks, which may be material for each UCITS it manages."

A UCITS management company must also conduct tests that enable assessment of the liquidity risk of the UCITS under exceptional circumstances. Recent guidelines from the European Securities and Markets Authority (ESMA) cover the design of liquidity stress testing models and recommend stress testing quarterly (or more frequently), depending on the fund's nature, scale and complexity, and liquidity profile.³⁷ During periods of liquidity crisis, UCITS regulators can and often will require periodic reporting on liquidity.³⁸ Finally, investors also receive information about a UCITS' liquidity risk and liquidity risk management policy in the fund's disclosure documents, such as the prospectus and key investor information document.

In addition to the liquidity management program, UCITS management companies are able to use various operational tools to manage a UCITS' liquidity when necessary to respond to market events or investor behavior. The range of tools available for a particular UCITS, however, depends on the UCITS' domicile and varies greatly among Member States.³⁹ Likewise, the specific rules of each Member State national competent authority (NCA) dictate the use of a particular tool and can differ markedly across jurisdictions.

Although these tools may differ significantly from one another in their operation and impact on investors, they supplement the regulatory requirements applicable to UCITS and enhance UCITS' ability to manage liquidity effectively and react to market events in a manner that protects the interests of fund investors.⁴⁰ Appendix B contains a chart indicating the availability of various liquidity tools in the key EU jurisdictions.

Types of Liquidity Management Tools

This section briefly describes the primary liquidity management tools available to UCITS. For each tool, a chart provides more detail about rules and practices in the two largest UCITS domiciles—Ireland and Luxembourg. A discussion of UCITS' use of liquidity management tools during the stressed period in March begins on page 29.

Swing Pricing

Swing pricing is a mechanism that a UCITS may choose to employ to protect existing investors against the dilution impact of the securities trading that is necessary when other investors enter or exit the UCITS. There is no explicit provision on swing pricing in the UCITS Directive,⁴¹ regulations applicable in the UCITS' domicile dictate the ability to use swing pricing and the conditions for such use.

A UCITS that adopts swing pricing may choose to adopt a “full swing” approach, a “partial swing” approach, or reserve the ability to use both approaches within an “umbrella” fund provided that the potential use for a particular sub-fund within the umbrella fund is properly disclosed in the prospectus.⁴²

Under full swing pricing, a UCITS' NAV is adjusted (swung) on every dealing day where there is capital activity, regardless of the amount of investor activity. For partial swing pricing, a pricing adjustment will only be activated by a certain level of net investor activity (e.g., aggregate redemptions or subscriptions reach a pre-determined threshold, assessed as a percentage of the UCITS' net assets).⁴³ When a swing is executed either under full swing or partial swing, the NAV per share is “swung” up or down (based on net inflows or outflows, respectively) by a certain basis point amount (swing factor) to create a notional bid or offer price, ensuring that transaction costs are borne by the subscribing or redeeming investor rather than by existing investors in the UCITS. Even where a UCITS adopts full swing pricing or partial swing pricing, it retains the discretion not to employ the mechanism for any given transaction or on any given day.

Use of Swing Pricing: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	Not specifically referenced by the Central Bank of Ireland (CBI) but permitted subject to detailed prospectus disclosure. Industry practice is to include detailed provisions similar to those in place under the CSSF Q&A.	The Commission de Surveillance du Secteur Financier (CSSF) has produced Q&A on the requirements of swing pricing, including prospectus disclosure on the mechanism, rationale for application, and costs in monetary or NAV terms. ¹
Ability to use as a tool	Swing pricing is gaining traction in Ireland. Currently, many UCITS provide for the option to apply “duties and charges,” ² which in effect is similar to swing pricing in that the cost of dealing is borne by the subscribing or redeeming investor.	Partial swing pricing is used frequently.
Application	Under full swing and partial swing, when the threshold is met, all subscribing or redeeming investors, as applicable, are subject to the adjusted (swung) price. UCITS generally have discretion in relation to application. Unlike other discretionary tools, if provided for, it is more likely to be used.	Under full swing and partial swing, when the threshold is met, all subscribing or redeeming investors, as applicable, are subject to the adjusted (swung) price. UCITS generally have discretion in relation to application. Unlike other discretionary tools, if provided for, it is more likely to be used.

Continued on next page

Use of Swing Pricing: Rules and Practices, *continued*

	Ireland	Luxembourg
Trigger	<p>For full swing the NAV is swung any time there is capital activity.</p> <p>For partial swing the NAV is swung when the threshold is met.</p> <p>With respect to “duties and charges,” which are more common in practice, they are applied to all subscribing/redeeming investors, at the discretion of the UCITS, in the case of large subscriptions/redemptions beyond a threshold at UCITS level (as set out in the prospectus).</p>	<p>For full swing the NAV is swung anytime there is capital activity.</p> <p>For partial swing the NAV is swung when the threshold is met.</p>
Discretionary or mandatory	A UCITS has the discretion whether to apply swing pricing on any given day.	A UCITS has the discretion whether to apply swing pricing on any given day but must have and follow its policy and procedures that detail the situations that may result in the non-application of swing pricing mechanism. Apart from specific and limited situations listed in the prospectus, such as a grace period on initial launch, the swing pricing policy imposes a systematic/mechanical application of the swing pricing with no discretion. Swing pricing is applied each time there is net capital activity (full swing) or each time the swing threshold is reached (partial swing).
Prospectus disclosure	Detailed prospectus disclosure is required, but the maximum swing factors are not required to be disclosed. A general description of how swing factors are calculated is required to be disclosed with a non-exhaustive list of examples.	Detailed prospectus disclosure is required. The maximum swing factors are required to be disclosed. ³
Notification to investors	Investors are not notified when swing pricing is applied. The swing factor is embedded in the calculated NAV that is applied to subscriptions/redemptions received on that trade date.	Investors are not notified when swing pricing is applied. The swing factor is embedded in the calculated NAV that is applied to subscriptions/redemptions received on that trade date.
Notification to regulators	No	No

¹ See www.cssf.lu/wp-content/uploads/FAQ_Swing_Pricing_Mechanism_230320.pdf (CSSF Q&A). These are supplemented by detailed industry codes of best practice drawn up with the participation of the CSSF.

² The CBI permits “duties and charges” to be added to the NAV for subscriptions and deducted for redemptions. The following is an example of “duties and charges” disclosure: all stamp and other duties, taxes, governmental charges, agents’ fees, brokerage fees, bank charges, transfer fees, registration fees, and other charges, payable in respect of the acquisition or disposal of assets of a sub-fund.

³ See Q2 of the CSSF Q&A.

Anti-Dilution Levies

An anti-dilution levy is a fee that is imposed on redeeming or subscribing investors at the discretion of the UCITS' manager, similar to a swing pricing adjustment or "duties and charges." An anti-dilution levy is intended to reflect the transaction costs resulting from net inflows or outflows and serves to protect existing or remaining investors against the adverse performance impact of new or departing investors. The UCITS manager can decide to apply an anti-dilution levy based on the circumstances facing the fund during the particular time or the levy may be based on a threshold amount.

Use of Anti-Dilution Levies: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	Disclosure in prospectus.* There is no specific maximum anti-dilution levy that can be applied.	Disclosure in prospectus. There is no specific maximum anti-dilution levy that can be applied. The possibility to apply an anti-dilution levy should also be provided for in the articles of incorporation/management regulations of the UCITS.
Ability to use as a tool	UCITS frequently have this as an available tool. In practice, levies are irregularly applied.	UCITS frequently have this as an available tool. In practice, levies are irregularly applied.
Application	Applied to all investors subscribing or redeeming on the relevant dealing day.	Applied to all investors subscribing or redeeming on the relevant dealing day.
Trigger	In cases of net subscriptions/redemptions, at the UCITS' discretion.	In cases of net subscriptions/redemptions, at the UCITS' discretion.
Discretionary or mandatory	Use of the levy on any given day is at the discretion of the UCITS.	Use of the levy on any given day is at the discretion of the UCITS.
Prospectus disclosure	Prospectus disclosure regarding the ability to charge a levy at the UCITS' discretion is required.	Prospectus disclosure regarding the ability to charge a levy at the UCITS' discretion is required.
Notification to investors	No; reflected in subscription/redemption price and variation to NAV.	No; reflected in subscription/redemption price and variation to NAV.
Notification to regulators	No	No

* Central Bank (Supervision and Enforcement) Act 2013 (Section 48(1)) (Undertakings for Collective Investment in Transferable Securities) (Amendment) Regulations 2019 (Central Bank UCITS Rulebook), Regulation 62(2).

Dual Pricing

Dual pricing is a pricing method employed by UCITS managers to shift to subscribing or redeeming shareholders (rather than remaining shareholders) the transaction costs associated with trades related to their activity. Under dual pricing, a UCITS provides a “bid” price for redemptions and an “offer” price for subscriptions rather than a single price for subscriptions and redemptions. Dual pricing is the traditional method that has been used to price authorized unit trusts in the United Kingdom; its use in other jurisdictions, while permitted, is very infrequent.

To employ this method, a UCITS’ underlying assets are priced on a mid-market basis, and these prices are used to obtain a mid-NAV per share. The UCITS manager then calculates estimated transaction costs based on that day’s activity, which are added to the NAV to obtain the subscription or “offer” price or deducted from the NAV to derive the redemption or “bid” price for that day depending on the net activity for the day. For any given day, the offer price for fund shares is higher than the bid price to account for the cost of buying or selling investments for the fund. The difference between the two, known as the “spread,” depends on the nature of the UCITS’ investments. Where a UCITS is focused on less-liquid assets, such as smaller companies, the spread will tend to be higher.

Use of Dual Pricing: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	Permitted in CBI guidance.*	Not specifically referenced but not specifically prohibited.
Ability to use as a tool	Never used in practice.	Never used in practice.
Application	Applies to all investors.	Applies to all investors.
Trigger	Always applied, as it is the prescribed method of pricing the shares.	Always applied, as it is the prescribed method of pricing the shares.
Discretionary or mandatory	Mandatory	Mandatory
Prospectus disclosure	Detailed prospectus disclosure is required.	Detailed prospectus disclosure is required.
Notification to investors	No; reflected in price and variation to NAV.	No; reflected in price and variation to NAV.
Notification to regulators	No	No

* See CBI Guidance on UCITS Asset Valuation, available at www.centralbank.ie/regulation/industry-market-sectors/funds/ucits/guidance/ucits-asset-valuation.

Redemption Fees

Redemption fees are charged to investors who exit the UCITS before satisfying a certain holding period. They are a tool that may be used by a UCITS to combat “market timing” as part of frequent trading policies or to otherwise discourage early redemption, which may negatively affect remaining investors due to associated transaction costs. The redemption fee is typically charged as a percentage of the NAV of the shares being redeemed and is payable directly to the UCITS. Redemption fees have the effect of reducing the redemption proceeds received by that investor. Although the primary purpose of redemption fees is not liquidity management, these fees may reduce redemption activity. In practice, a UCITS manager typically waives redemption fees.

Use of Redemption Fees: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	The CBI requires enhanced disclosure specifying that the investment should be considered medium- to long-term. A maximum fee of 3 percent of NAV is permitted and must be set out in bold in the prospectus. ¹	The CSSF requires disclosure in the prospectus on redemption fees. In practice, the maximum allowed by the CSSF is 3 percent of NAV.
Ability to use as a tool	Frequent	Frequent
Application	Applicable to all investors if redemption is within the holding period but may be waived.	Applicable to all investors if redemption is within the holding period but may be waived.
Trigger	Upon a redemption.	Upon a redemption.
Discretionary or mandatory	Discretionary. Although the fee is applicable to all investors, it may be waived for (some or all) investors at the discretion of the UCITS. ²	Discretionary. Although the fee is applicable to all investors, it may be waived for (some or all) investors at the discretion of the UCITS. ³
Prospectus disclosure	Prospectus disclosure of maximum fee chargeable is required, including the ability to waive.	Prospectus disclosure of maximum fee chargeable is required, including the ability to waive.
Notification to investors	No; reflected in redemption price and variation to NAV.	No; reflected in redemption price and variation to NAV.
Notification to regulators	No	No

¹ Central Bank UCITS Rulebook, Regulation 62(1)(c).

² The CBI requires a fund to treat all shareholders in the same class equally and all shareholders within the fund fairly. Therefore, any waiver or change for a portion of investors must be done with care.

³ The redemption fee may be waived for only some investors. However, shareholders in the same class in the same circumstance should be treated equally.

In-Kind (In-Specie) Redemptions

In-kind (or in-specie) redemptions allow UCITS to make redemption payments in assets of the fund, either in whole or in part, instead of in cash. By not requiring a UCITS to sell its underlying assets, this tool has the effect of both eliminating the need to sell assets during stressed market periods and protecting both remaining and redeeming investors from any transaction costs. In practice, in-kind redemptions pose various operational challenges and are rarely used by retail funds, because investors may not be able to custody in-specie assets. Specifically, an in-kind transfer is not an automated process for transfer agents and registrars and may be subject to additional regulatory requirements or hurdles, such as sign-off by the depositary or valuation of the assets by the fund's auditor. Additionally, certain jurisdictions may require approval of the tax authority to ensure the transfer is not treated as a taxable event, and securing such approval may delay the redemption.

Use of In-Kind (In-Specie) Redemptions: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	<p>A redemption may be made in kind. Where the redemption request represents less than 5 percent of the NAV of a UCITS, the investor's consent is required.</p> <p>Where consent is not required, the UCITS may be required to sell the assets upon the investor's request.</p> <p>The UCITS' depositary is required to approve the assets that are subject to in-kind redemption to ensure fairness of treatment for investors.</p>	<p>Can only be applied with the consent of the investor(s) concerned. Requires a report of the auditor of the UCITS on the valuation of the assets.</p>
Ability to use as a tool	<p>Most funds reserve this as an option. It is used frequently for specific circumstances (e.g., fund closures).</p>	<p>Most funds reserve this as an option. It is used frequently for specific circumstances (e.g., fund closures).</p>
Application	<p>A determination to pay in kind is made on a discretionary basis with respect to a specific investor.</p>	<p>A determination to pay in kind is made on a discretionary basis with respect to a specific investor.</p>
Trigger	<p>Large redemption or specific circumstances (e.g., fund closure).</p>	<p>Large redemption or specific circumstances (e.g., fund closure).</p>
Discretionary or mandatory	<p>Discretionary, subject to the regulatory requirements above.</p>	<p>Discretionary, subject to the regulatory requirements above.</p>
Prospectus disclosure	<p>Detailed prospectus disclosure of the regulatory requirements (as set out above) is required.</p>	<p>Detailed prospectus disclosure of the regulatory requirements (as set out above) is required. In addition, the ability to pay redemption proceeds in kind must also be included in the articles of incorporation/management regulations of the UCITS.</p>
Notification to investors	<p>Yes</p>	<p>Yes</p>
Notification to regulators	<p>No</p>	<p>No</p>

Temporary Borrowing

Article 83 of the UCITS Directive permits a Member State to authorize a UCITS to borrow up to 10 percent of its assets subject to certain conditions, and many Member States have authorized UCITS to do so. A UCITS may choose to use such borrowing facilities as an additional source of liquidity under certain circumstances.

Use of Temporary Borrowing: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	Up to 10 percent of NAV for temporary purposes.	Up to 10 percent of NAV for temporary purposes.
Ability to use as a tool	Virtually all UCITS reserve this as a tool and it is used frequently in practice.	Virtually all UCITS reserve this as a tool and it is used frequently in practice.
Application	N/A	N/A
Trigger	At the discretion of the UCITS, often in case of significant redemption requests that are expected to be offset by future subscriptions.	At the discretion of the UCITS, often in case of significant redemption requests that are expected to be offset by future subscriptions.
Discretionary or mandatory	Discretionary	Discretionary
Prospectus disclosure	Prospectus disclosure is required.	Prospectus disclosure is required.
Notification to investors	No	No
Notification to regulators	No	No

Redemption Gates

In certain jurisdictions, UCITS are allowed to use redemption gates to partially or fully restrict an investor's ability to redeem its interest in the UCITS.⁴⁴ The purpose of the gate is to stagger redemptions via a temporary ceiling to maintain the quality of the assets in the UCITS by protecting it from forced sales of underlying securities under unfavorable conditions and to enable the UCITS to honor redemptions progressively while maintaining equal treatment of investors.

Redemption gates may be imposed at the fund level, with the threshold for triggering the gate typically set at 10 percent of the fund's net assets. A fund-level gate of 10 percent caps the aggregate investor redemptions for a given period to 10 percent; to the extent that redemption requests exceed that threshold, they are met on a pro rata basis; any residual requests are carried over to the next redemption period.

Use of Redemption Gates: Rules and Practices

	Ireland	Luxembourg
Regulatory requirements	CBI regulations provide that gates may only be applied where redemption requests amount to 10 percent or more of NAV (at sub-fund level) on any dealing day and that outstanding requests be carried forward pro rata (no priority treatment for carry forward unitholders).*	CSSF regulations do not provide a minimum percent level for the application of gates, but in practice 10 percent is the minimum allowed (at sub-fund level) on any dealing day. Where this restriction is applied, shares will be redeemed on a pro rata basis, and any shares that are not redeemed because of the gate will be carried forward to each subsequent dealing day until all the shares have been redeemed. Requests for redemption that have been carried forward will be redeemed in priority to requests received and/or carried forward from a later dealing day.
Ability to use as a tool	UCITS are not required to have redemption gate provisions, although virtually all have them. In practice, gates are applied infrequently.	UCITS are not required to have redemption gate provisions, although virtually all have them. In practice, gates are applied infrequently.
Application	Applies to all investors redeeming that day (at sub-fund level).	Applies to all investors redeeming that day (at sub-fund level).
Trigger	Upon redemption requests in excess of the specified gate.	Upon redemption requests in excess of the specified gate.
Discretionary or mandatory	Even if the redemption threshold is reached, a UCITS may choose not to impose a gate.	Even if the redemption threshold is reached, a UCITS may choose not to impose a gate.
Prospectus disclosure	Detailed prospectus disclosure is required including ability to waive when the threshold is reached. For example, the threshold and a general explanation of the mechanism must be disclosed.	Detailed prospectus disclosure is required including ability to waive when the threshold is reached. For example, the threshold and a general explanation of the mechanism must be disclosed.
Notification to investors	Yes, on an individual basis.	Yes, on an individual basis.
Notification to regulators	No	No

*Central Bank UCITS Rulebook, Regulation 33(3).

Suspensions

A UCITS may temporarily suspend the repurchase or redemption of its shares in exceptional cases if it is permitted to do so under national law.⁴⁵ There is no limit on the time period of suspension, but the expectation is that all reasonable steps will be taken to bring the suspension to an end as soon as possible. Additionally, national law may authorize an NCA to require a UCITS to suspend the repurchase or redemption of its shares in the interest of investors or of the public.⁴⁶

The senior management of the UCITS is required to communicate any decision to suspend subscriptions and redemptions to the NCA of the UCITS' domicile as well as to those in other countries in which the UCITS has been distributed. Suspensions are implemented to allow a UCITS to meet redemptions in an orderly manner and avoid the need to sell assets at a discount in stressed market conditions.

Suspensions may be imposed in various circumstances, including if a UCITS' underlying securities cannot be valued fairly because of prevailing market conditions, if a specific stock exchange is closed, or if there is a fund termination or merger. Typically, suspensions of UCITS are very short-lived, lasting only a part of the day or a few days. In practice, it is rare for a UCITS to use the temporary suspension power, particularly as it may carry significant reputational risk.

Use of Suspensions: Rules and Practices

	Ireland	Luxembourg
Regulatory requirement	Permitted only in exceptional cases where circumstances so require and where suspension is justified having regard to the interests of the investors.	Permitted only in exceptional cases where circumstances so require and where suspension is justified having regard to the interests of the investors.
Ability to use as a tool	Most have this as an available tool, but use is extremely rare.	Most have this as an available tool, but use is relatively rare.
Application	When a suspension is triggered, it applies to all investors of the sub-fund(s) concerned.	When a suspension is triggered, it applies to all investors of the sub-fund(s) concerned.
Trigger	Exceptional circumstances as listed in the prospectus. ¹	Exceptional circumstances as listed in the prospectus and articles of incorporation/ management regulations.
Discretionary or mandatory	May be imposed by the UCITS at its discretion or by the CBI in the interests of investors or the public.	May be imposed by the UCITS at its discretion or by the CSSF.
Prospectus disclosure	Detailed prospectus disclosure is required.	Detailed prospectus disclosure is required.
Notification to investors	Although there are no specific rules regarding disclosure in the event of suspension, industry practice is to notify investors immediately.	Although there are no specific rules regarding disclosure in the event of suspension, industry practice is to notify investors immediately.
Notification to regulators	Yes, immediate (without delay). ²	Yes, immediate (without delay). ³

¹ Circumstances may include periods where the relevant markets are closed other than for holidays; where political, economic, or other events mean that disposal or valuation of investments is not feasible; or where a winding up is being considered.

² Central Bank UCITS Rulebook, Regulation 33(4)(a).

³ Luxembourg Law of 17 December 2010 Relating to Undertakings for Collective Investment, Article 12 and Article 28; see also "Liquidity Risk Management for Open-Ended Undertakings for Collective Investment," CSSF Circular 19/733 (December 20, 2019).

Use of Liquidity Management Tools During COVID-19 Crisis Period

This section discusses the experiences of UCITS using the liquidity management tools described in the previous section during the stressed period in March.

Two preliminary points are important to provide context.⁴⁷ First, to address any challenges resulting from stressed markets, UCITS managers would likely use different liquidity management tools depending on the particular circumstances of a fund. Some tools may not be appropriate in a given situation. For example, some UCITS may experience increased redemption pressure, which can test the ability of the fund manager's liquidity management program to meet redemption requests in a challenging market environment. A separate issue could be extreme difficulty in accurately valuing the fund's underlying portfolio securities due to stress in certain markets or asset classes. In these circumstances, even if a UCITS is experiencing a normal level of redemptions, the UCITS manager may decide that suspension may be the only available option that is in the best interest of investors. In the case of significant valuation problems in underlying markets, swing pricing or anti-dilution levies, for instance, would not address those concerns. Ultimately, the tools that a UCITS manager deploys depend on the specific situation faced by a particular UCITS, the tool best suited to address the issue, and the manager's operational readiness to use the tools.

Second, although the tools are referred to broadly as liquidity management tools and can take on increased importance during times of stress for the market or for a particular UCITS, UCITS managers may use many of the tools (with the exception of suspensions and gates) as part of their normal operational toolkit. Most UCITS engage in daily dealing and, in any case, must deal at least twice monthly. These tools can help ensure that investors are treated fairly, particularly where there are large investor subscriptions and redemptions even under normal market conditions.⁴⁸

The next section will discuss UCITS' deployment of the liquidity management tools during the stressed period in March gathered from an ICI member survey, as well as specific instances of suspensions during that period, as reported in the press or disclosed in discussions with industry participants.

Use of Liquidity Management Tools (Excluding Suspensions)

EU Member States permit UCITS managers to employ a variety of liquidity management tools. ICI surveyed members managing UCITS to better understand which tools UCITS employed, or had adopted but did not employ, during the stressed period.⁴⁹ These members predominantly domiciled their UCITS in Ireland, Luxembourg, and the United Kingdom. Below are some observations from the information provided by members.

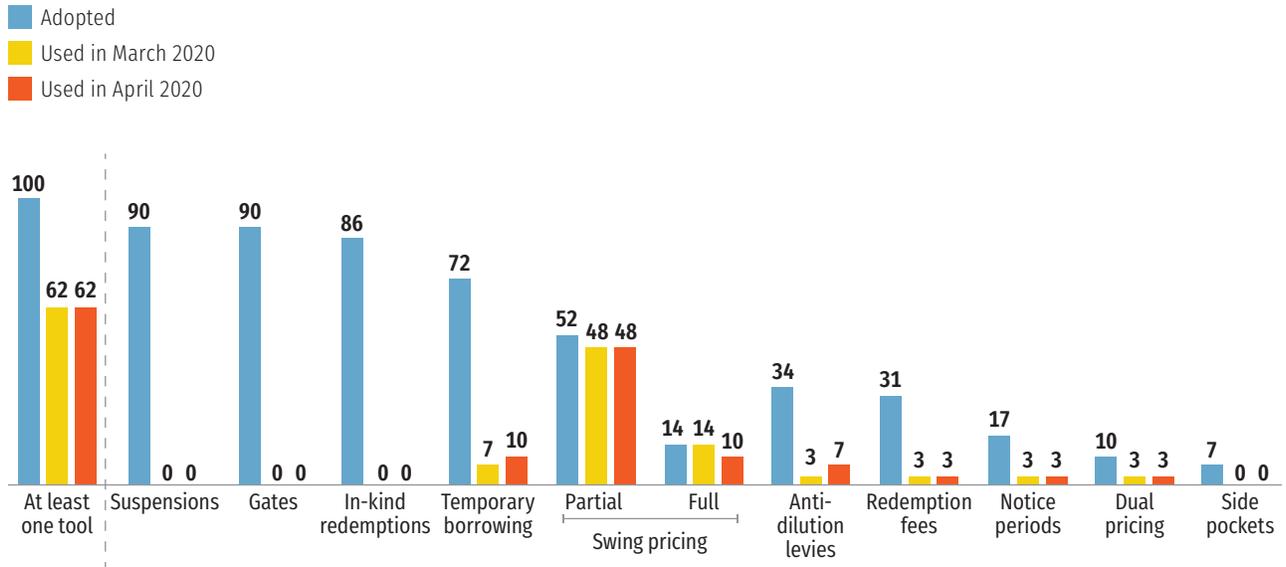
All of the responding fund complexes have adopted⁵⁰ at least one of the liquidity management tools that are permissible in Ireland, Luxembourg, and the United Kingdom (Figure 4.12). Besides suspensions and gates, the individual tools most often adopted as options were in-kind redemptions (86 percent), temporary borrowings (72 percent), and swing pricing (52 percent had partial swing pricing and 14 percent had full swing pricing).⁵¹ ICI found that close to a third of responding fund complexes had adopted anti-dilution levies and redemption fees—57 percent of these respondents had not adopted swing pricing as a tool. Significantly fewer respondents had adopted notice periods, dual pricing, and side pockets in their toolkits.

Given the recent focus on the use of swing pricing, it is worth noting that there is significant variation in UCITS' adoption of swing pricing across jurisdictions. For example, 91 percent of respondents indicated that at least one of their Luxembourg-domiciled UCITS had adopted swing pricing (either partial or full) as an option; while 50 percent of respondents indicated that at least one of their Irish-domiciled UCITS (Figure 4.13) had swing pricing as an option. Respondents with Irish-domiciled funds tend to have either swing pricing or anti-dilution levies as options for at least one of their UCITS. Of respondents with Irish-domiciled UCITS that had not adopted swing pricing, nearly 60 percent had adopted anti-dilution levies.

FIGURE 4.12

Adoption and Use of Liquidity Management Tools by Fund Complexes During Spring 2020

Percentage of fund complexes, March and April 2020



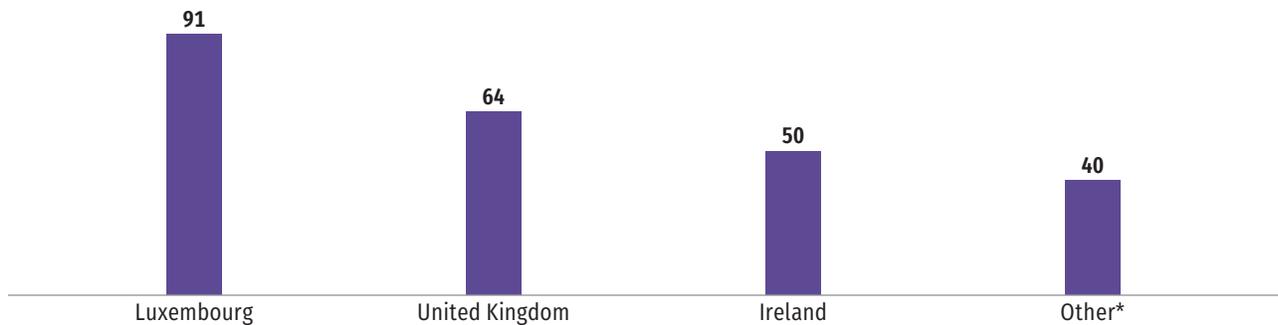
Note: Results are based on responses from 29 fund complexes as to whether at least one of their UCITS had the specified liquidity management tool available and whether at least one of their UCITS made use of the tool in March or April 2020.

Source: ICI Global survey data

FIGURE 4.13

Adoption of Swing Pricing as a Liquidity Management Tool by UCITS Domicile

Percentage of fund complexes, March 2020



* Other includes France, Germany, and the Netherlands.

Note: Results are based on responses from 29 fund complexes as to whether at least one of their UCITS had adopted swing pricing as a liquidity management tool.

Source: ICI Global survey data

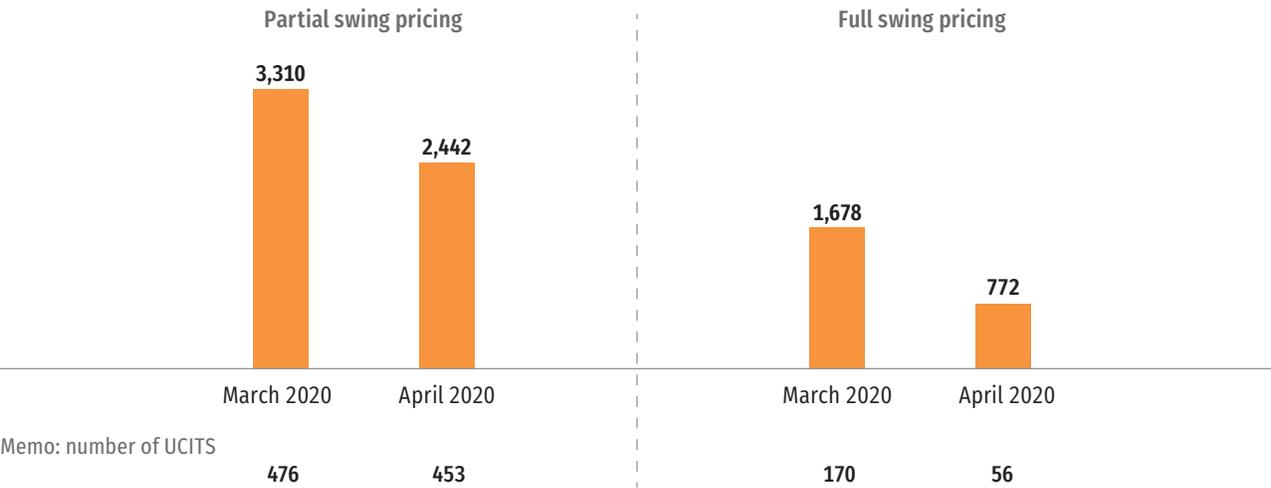
During the COVID-19 stress period, 62 percent of respondents used at least one liquidity management tool—swing pricing, temporary borrowing, anti-dilution levies, redemption fees, notice periods, or dual pricing (Figure 4.12). None of the respondents’ UCITS employed suspensions, gates, or in-kind redemptions.

Among respondents that had adopted partial swing pricing, 92 percent⁵² executed a swing for at least one of their UCITS in March 2020.⁵³ This result is not unexpected, in part, because partial swing pricing thresholds may be lowered to account for higher transaction costs in the secondary market during volatile markets and therefore may be more easily exceeded.⁵⁴ Also, because UCITS that employ full swing pricing typically do so on an ongoing basis, all respondents that had adopted full swing pricing as an option for at least one of their UCITS executed swings in March 2020.

Respondents that had adopted swing pricing noted that NAVs were swung more frequently during the stress period. In March 2020, partial swings were executed 3,310 times by 476 UCITS in the survey sample—a 36 percent higher frequency than in April 2020, when market conditions were calmer (Figure 4.14). Respondents reported that some UCITS lowered their partial swing thresholds during March to take into consideration the impact flows could have on investors from increased transaction costs in the underlying markets. Lowering thresholds can increase the number of times a UCITS executes a partial swing as smaller flows now will be more likely to result in the UCITS’ NAV being swung. Full swings were executed significantly more times in March (1,678 times by 170 UCITS) than in April (772 times by 56 UCITS). Some UCITS using partial swing pricing lowered their threshold for redemptions to zero in March (which is equivalent to full swing pricing) in response to market volatility that had caused bid-ask spreads to widen on underlying securities. As volatility in the markets subsided, these funds subsequently increased their thresholds above zero which moved them back to partial swing pricing.

FIGURE 4.14
Swing Pricing Was Executed More Frequently in March 2020

Number of times executed, March and April 2020



Source: ICI Global survey data

Those members that have adopted swing pricing use it regardless of market conditions to promote equitable treatment across investors by having investors who purchase or sell fund shares bear the transaction costs. Some members do not view swing pricing as a tool to disincentivize redemptions to reduce redemption pressure in times of stress, while other members believe swing pricing is effective in shaping investor behavior for large redemptions or subscriptions.⁵⁵ For full swing pricing, a UCITS uses this tool regardless of the levels of subscriptions and redemptions or market conditions. For partial swing pricing, a UCITS uses the tool for subscriptions or redemptions exceeding a threshold. Indeed, much of the swing pricing done in April 2020 was more attributable to subscriptions rather than redemptions as UCITS were in net inflows in April.

In addition, a number of respondents commented that they reviewed the swing factors and thresholds at times daily during the stressed period, and about half of the respondents did not encounter any problems with their use of swing pricing. About a third of the respondents that used swing pricing reported some challenges in executing swing pricing during March 2020. Challenges included pre-determined limitations on swing factors that did not adequately reflect rapidly changing transaction costs and the overall difficulty in determining transaction costs during volatile markets.

Use of Suspensions

The vast majority of EU jurisdictions permit UCITS to suspend redemptions. Outside of market closure scenarios, however, a suspension of redemptions generally is considered to be an exceptional tool that is used only as a last resort.

In March 2020, during a time of significant market volatility resulting from the impact of the COVID-19 pandemic, the overwhelming majority of UCITS continued to operate normally and redeem shares upon demand, while a very small percentage of UCITS suspended redemptions for a short period of time, ranging from intraday to a few days.⁵⁶ Although unusual and significantly higher in number than under “normal” market conditions, the number and total assets under management (AUM) of UCITS that made a determination to suspend redemptions were extremely small compared to the total number of UCITS and total AUM.⁵⁷ Further, the UCITS that suspended were overwhelmingly domiciled in jurisdictions that represent a small percentage of total UCITS AUM, and these UCITS were dealing with circumstances unique to those jurisdictions.

Moreover, the primary reason for the suspensions in March 2020 was concerns about valuation rather than the inability to meet redemption requests. A UCITS must be able to value its underlying portfolio securities to calculate its NAV accurately. If a UCITS is unable to value its shares accurately, then it risks treating remaining or existing investors differently from redeeming or purchasing investors. For this reason, suspensions may be a core tool for protecting investors’ interests.

The March suspensions were concentrated in certain Member States that faced idiosyncratic sets of circumstances that made valuation extraordinarily difficult during that stressed time. The next section describes ICI’s understanding of the experience of the EU jurisdictions in which UCITS suspended redemptions during this period.⁵⁸

Denmark

In Denmark, more than 400 UCITS suspended redemptions for some period in March 2020 because of the difficulty they experienced in valuing their shares under exceptional market conditions. The suspended funds included equity, bond, and multi-asset UCITS, and the suspensions ranged from intraday to several days.

The number of suspensions is likely attributable to a UCITS market structure that is unique to Denmark. In Denmark, listed UCITS account for 50 percent of the overall UCITS marketed in the country. As part of their listing requirements, these UCITS are required to update their NAVs a minimum of three times during a trading day, with the expectation that each quoted price accurately reflects the value of the underlying securities. In practice, listed UCITS update their NAVs at different intervals: large funds update their NAVs every two minutes, while others may update three to five times a day.⁵⁹ The extreme volatility during the stressed period in March overwhelmed the operational capabilities of fund managers to calculate NAVs in that high level of frequency, and certain UCITS were forced to suspend. The affected UCITS lifted suspensions once the volatility subsided, and they were again able to calculate their NAVs as before.

Sweden

In Sweden, 32 UCITS suspended redemptions during March, 24 of which were bond funds (high-yield or corporate debt)⁶⁰ and eight of which were multi-asset funds. Two-thirds of these UCITS were suspended for only one or two days, and 90 percent of the funds removed the suspension after three days.⁶¹ The vast majority of these funds suspended redemptions because of challenges in valuing the corporate bonds in their portfolios during the stressed market conditions.

The problem with valuation stemmed, at least in part, from fund managers' discomfort with the prices for corporate bonds quoted by securities dealers during this time. Fund managers were concerned that the dealers were not updating the quotes frequently enough to reflect changing valuations. These UCITS suspended redemptions out of concern about the ability to calculate their NAVs based on the value those bonds. This problem began in the high-yield bond market and spread subsequently to some investment grade bonds. The bonds lacking reliable quotes were those issued in Swedish krona and by Swedish issuers. This issue also led to the suspension of redemptions for a small number of UCITS domiciled in Luxembourg that had exposure to these Swedish issuers.

Luxembourg

A small number of UCITS domiciled in Luxembourg suspended redemptions in March for a brief period of time. These funds were primarily sub-funds that invested in Swedish umbrella funds that suspended redemptions as described above.

Finland

In Finland, 25 Finnish UCITS and alternative investment funds determined to suspend redemptions in March 2020. All of the suspending UCITS in Finland were bond funds or multi-asset funds with significant bond market exposure. The suspensions were relatively short (mostly a few days) and were driven by the volatile market conditions in the corporate bond market that caused difficulty in pricing underlying securities. Funds also experienced larger than normal outflows at this time. In the case of the funds that suspended redemptions, the use of other tools was not an option because of the uncertainty about the pricing of the underlying securities. Although Finnish equity UCITS experienced some outflows, they did not experience the same valuation issues as bond funds, and therefore did not need to suspend redemptions.

European ETF Experiences

Despite unprecedented market volatility in March 2020 caused by the COVID-19 crisis, the European ETF ecosystem—generally thought of as ETF issuers, authorized participants, and ETF liquidity providers—proved its resilience.⁶² ETF shares traded smoothly and efficiently in the secondary market. In addition, ETFs acted as a price discovery tool for investors. This was particularly true in the fixed-income market, where market participants faced challenges in finding liquidity and establishing pricing for individual bonds.

Shares of an ETF trade throughout the day on the secondary market (e.g., over the counter through a request-for-quote process or on a stock exchange) at market determined prices. To transact in the secondary market, investors buy or sell ETF shares through a broker or in a brokerage account just as they would shares of any publicly traded company. Indeed, most investors who trade ETF shares in the secondary market do not interact directly with the ETF or its sponsor—nor do they directly trigger activity in the ETF's underlying securities. Investors use ETFs for a variety of reasons, such as acquiring or shedding exposure to specific asset classes and investment strategies, diversifying their portfolios, and hedging investment risks.

Thus, it is not surprising that ETF secondary market trading volumes rise during periods of market turbulence as investors, especially institutional investors, turn to ETFs to quickly and efficiently transfer and hedge risks. As Figure 4.15 shows, trading during the market volatility this spring was no exception. Trading volume of European ETFs, as measured by the value of shares traded, surged in March 2020 to €401 billion—more than twice its monthly average of €179 billion over the previous 12 months. As markets calmed with the spate of government programs announced and put in place to support local economies and financial markets, trading volume in European ETFs receded to more normal levels.

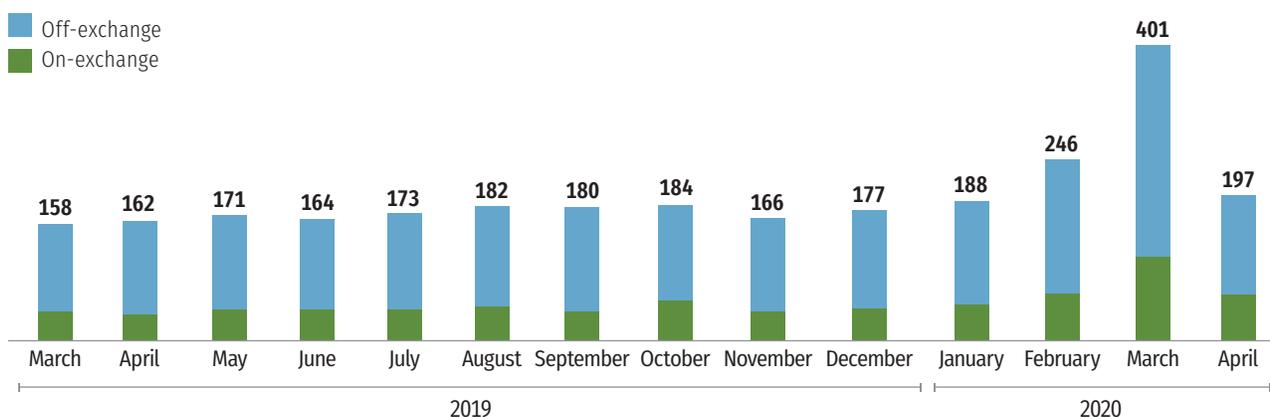
ETFs, like other securities that trade on secondary markets, have bid and ask spreads that are influenced by the forces of supply and demand and adjust continuously in response to changes in conditions in the secondary market. During periods of stress, bid-ask spreads tend to increase or widen as dealers demand additional compensation for accepting the risk that market prices will move significantly before they can find another party to take the other side of the trade, or that they will not find any counterparties and will have to carry the position on their balance sheets.

During stressed markets, when selling pressure is intensified and volatility is elevated, bid-ask spreads on both ETFs and their underlying securities widen. Whether ETF bid-ask spreads remain narrower than those on their underlying securities during these times of stress will depend, in part, on the willingness of dealers to remain in the secondary market and provide competitive two-sided quotes for ETF shares relative to their underlying securities. During the market turmoil in March 2020, bid-ask spreads on large European corporate bond ETFs widened, but remained, on average, narrower than those on their underlying securities.⁶³

FIGURE 4.15

Secondary Market Trading Volume of European ETFs Surged in March 2020

Billions of euros, monthly, March 2019–April 2020



Source: ICI calculations of data provided by BlackRock

At some points during March 2020, market prices of many European corporate bond ETFs traded at substantial discounts to those funds' end-of-day NAVs.⁶⁴ Some observers argued that discounts were indicative of a problem with the structure of bond ETFs,⁶⁵ but ICI—along with several policymakers—contend that bond ETF prices during these times reflected the increased liquidity costs in the underlying bond markets. Indeed, a recent Financial Stability Board report concluded that “ETFs, which offer immediate liquidity because of their trading on the secondary markets, became one of the key mechanisms for price discovery during the dash for cash.” The report further suggested that “ETFs contained more up-to-date information about the underlying asset values than out-of-date cash prices, reflecting more accurately the liquidity and cost of selling those assets.”⁶⁶

Because bond ETF shares are traded on the secondary market, their market prices are continually updated and incorporate market participants' evolving real-time views on the values of the underlying bonds held in ETFs' portfolios. Bond ETF share prices also incorporate estimations of transaction costs—including the latest bid-ask spread of the underlying securities and any premium to offset the risk that actual trading costs will be greater than expected. In contrast, individual bond valuations used to determine NAVs are a combination of prices for bonds that traded at some point during the day, estimated prices for bonds that did not trade that day, and other factors.⁶⁷

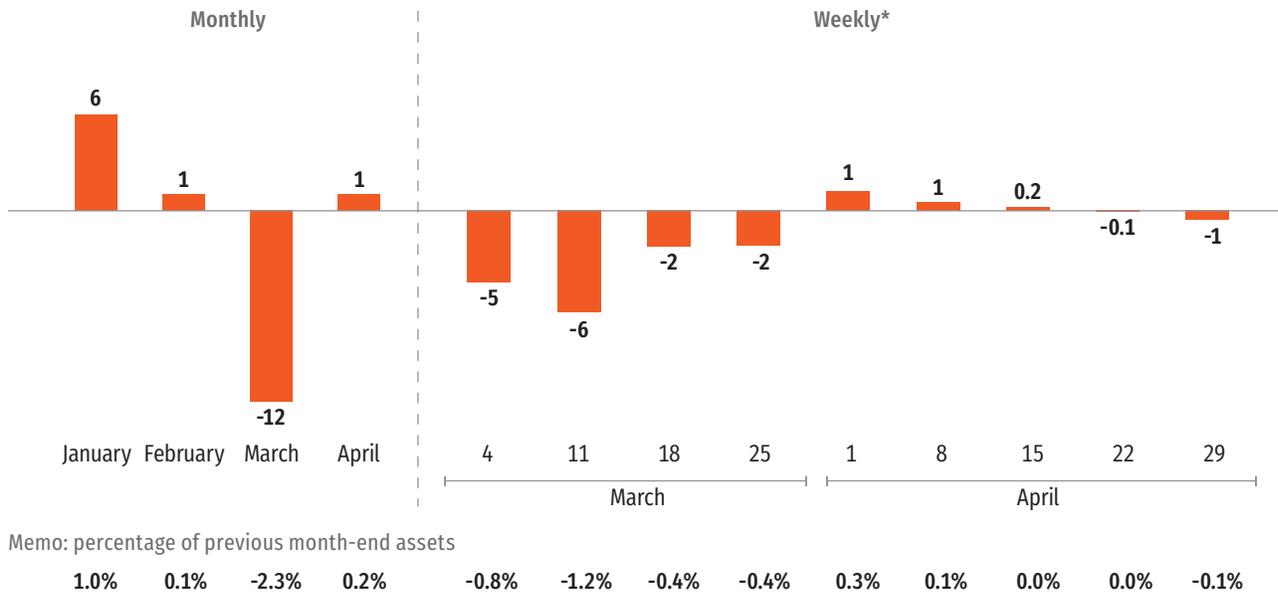
In fast-moving markets, prices for bonds that traded earlier in the day may not always fully reflect market sentiment at the market close. In addition, price estimates for bonds that did not trade are generally based on observed trades and other variables, such as dealer quotes and interest rate movements. Bond ETF prices, which adjust quickly in rapidly changing markets, can and did act as an important source of price discovery by providing a window into investors' real-time views on the value of the underlying bonds. As a result, bond ETF NAVs may diverge from their market prices because NAVs and market prices inherently reflect different inputs.

European ETFs experienced fairly moderate net outflows in March 2020. For the month, equity ETFs had modest net outflows of €12 billion, or 2.3 percent of their February assets (Figure 4.16). The bulk of the outflows in March occurred in the first two weeks when global stock prices were falling swiftly, and volatility was surging. For the remainder of March, outflows from equity ETFs slowed and then turned into a small inflow of €1 billion for April.

FIGURE 4.16

Outflows from Equity UCITS ETFs Were Modest in March 2020

Billions of euros, January–April 2020



*Weekly data only include UCITS with available estimated daily net new cash flow.

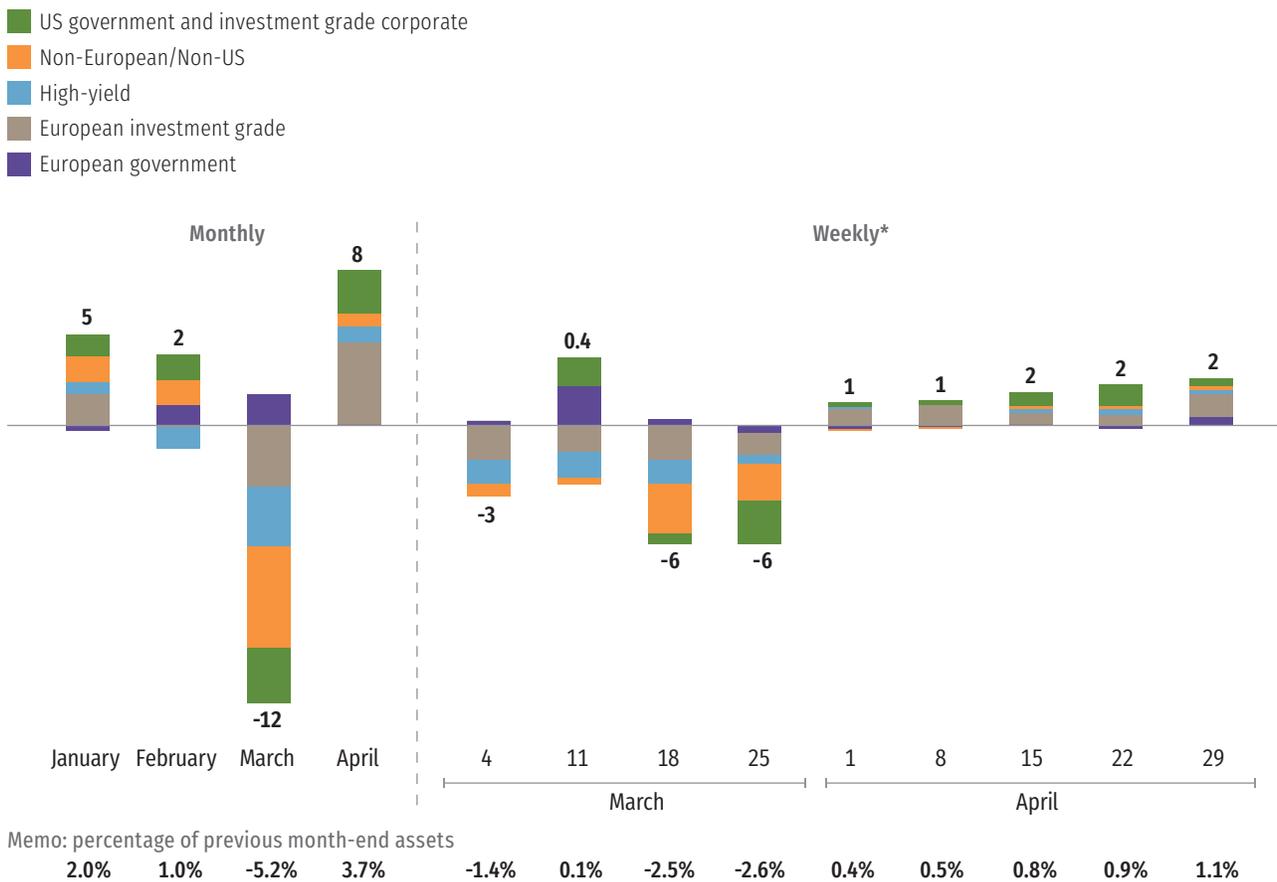
Source: ICI calculations of Morningstar Direct data

In March, bond ETFs experienced net outflows of €12 billion, or 5.2 percent of their February assets, with the majority of the outflows occurring in the second half of March (Figure 4.17). ETFs that invest in non-European and non-US fixed-income securities accounted for more than a third of the outflows from bond ETFs. ETFs that invest in high-yield bonds, those that invest in European investment grade bonds, and those that invest in US government and investment grade corporate bonds each represented a little more than 20 percent of the total outflows. ETFs that invest in European government bonds were the only category to receive net inflows in March. Outflows from bond ETFs abated toward the end of March and inflows resumed in April.

FIGURE 4.17

Outflows from Bond UCITS ETFs Were Modest in March 2020

Billions of euros, January–April 2020



*Weekly data only include UCITS with available estimated daily net new cash flow.

Source: ICI calculations of Morningstar Direct data

APPENDIX A

Regulation of UCITS and UCITS Money Market Funds

Regulation of UCITS

The regulatory regime for Undertakings for Collective Investment in Transferable Securities (UCITS) and their management companies is laid out in the UCITS Directive, which requires each European Union (EU) Member State to implement it through national legislation.⁶⁸ Therefore, UCITS and their management companies are governed primarily by the national legislation implementing the UCITS regime in the country of their organization.⁶⁹ The laws of the national competent authorities (NCAs) are augmented by guidelines and FAQs addressing discrete topics issued by the European Securities and Markets Authority (ESMA), the European supervisory authority tasked with improving investor protection and promoting stable and orderly financial markets.⁷⁰

The UCITS Directive specifies that UCITS means an undertaking: (i) the sole object of which is the collective investment in transferable securities or in other liquid financial assets referred to in Article 50(1) of capital raised from the public and which operate on the principle of risk-spreading; and (ii) the units of which are, at the request of holders, repurchased or redeemed, directly or indirectly, out of those undertakings' assets.⁷¹ In contrast to investment companies registered under the US Investment Company Act of 1940 (US RICs), a UCITS may only be classified and operate as an open-end fund. In addition to traditional equity and bond funds, UCITS can be structured as exchange-traded funds (ETFs),⁷² index funds, money market funds, and funds traditionally operating in the liquid alternative space.

UCITS must invest the proceeds they raise from the public in permissible investments, in accordance with specified prudential investment limits and other investor safeguards. The key provisions of the UCITS regulatory framework that are most relevant to the topics discussed in this report are described briefly below.

Legal Structure of a UCITS

Unlike a US RIC, which must be structured in the form of a body corporate (i.e., a corporation or statutory trust), UCITS may avail themselves of a number of different legal structures depending on the organizational form selected by its promoter (e.g., a contractual fund, a unit trust, or, most commonly, a corporate investment company structure). The UCITS Directive does not require a particular legal structure for a UCITS. As a result, many EU Member States generally allow the formation of UCITS through their available domestic legal structure in place prior to the enactment of the UCITS Directive.

Regardless of where they are domiciled, all UCITS are required to have a management company (or the substance of a management company in the form of a self-managed structure) located in the European Union, and a trustee/depositary that provides an oversight function for the UCITS. A UCITS' management company may provide portfolio management services to the UCITS, as well as perform various other specified functions, including valuation and pricing, regulatory compliance monitoring, share issuances and redemptions, and marketing.⁷³

Eligible Investments

Under the current rules, the UCITS Directive provides for a broad spectrum of fund types and exposures, from relatively "plain vanilla" equity and bond products to UCITS taking exposures to hedge fund and commodities indexes. Regardless of fund type, however, a UCITS' investments must comply with the UCITS Directive's

requirements regarding the securities and instruments in which a UCITS may invest. In summary, eligible investments for UCITS are:⁷⁴

- » transferable securities (including closed-end fund shares) and money market instruments that are either admitted to official listing on a stock exchange in an EU Member State or non-EU Member State, or which are dealt on a market that is regulated, operating regularly, recognized, and open to the public;
- » recently issued transferable securities that will be admitted to official listing on a stock exchange or other market (as described above) within a year;
- » money market instruments, other than those dealt in on a regulated market, provided that the issuer or the issuer is itself regulated for the purpose of protecting investors and savings;
- » units of UCITS and, in limited cases, units of non-UCITS collective investment schemes;
- » deposits with credit institutions;
- » financial derivative instruments that meet certain criteria;⁷⁵
- » transferable securities and money market instruments other than those referred to above (subject to a maximum aggregate NAV limit); and
- » ancillary liquid assets.

A UCITS is required to invest 90 percent of its assets in the “transferable securities” and other “liquid assets” specified above (listed in Article 50(1) of the UCITS Directive). For the purposes of the UCITS Directive, the term *transferable securities* means: “(i) shares in companies and other securities equivalent to shares in companies, (ii) bonds and other forms of securitized debt, (iii) any other negotiable securities that carry the right to acquire any such transferable securities by subscription or exchange.”⁷⁶ The remaining 10 percent of assets may be placed in eligible transferable securities or money market instruments other than those referred to above.⁷⁷

Issuer Diversification

The UCITS Directive and national implementing laws generally require that no more than 10 percent of a UCITS’ net assets may be invested in transferable securities or money market instruments issued by the same body. Moreover, the total value of the securities of issuers in which a UCITS has invested more than 5 percent of its assets must not exceed 40 percent of its assets (this is known as the “5/10/40” rule). Thus, generally, a UCITS can invest up to 40 percent of its assets in the securities of four issuers, in each of which it has invested not more than 10 percent of its assets, and must diversify the remaining 60 percent of its portfolio so that it has invested no more than 5 percent of its assets in the securities of any one issuer.⁷⁸

Valuation and Redemption

The UCITS Directive relegates the valuation of assets and the calculation of the sale or issue price and the repurchase or redemption price of the units of a UCITS to the national law of the home Member State of the UCITS.⁷⁹ It does, however, mandate that a UCITS make public in an appropriate manner the issue, sale, repurchase, or redemption price of its units each time it issues, sells, repurchases, or redeems them, and at least twice a month. A Member State NCA may permit a UCITS to reduce the frequency to once a month on the condition that such derogation does not prejudice the interests of the unitholders.⁸⁰ In practice, however, most UCITS provide for liquidity (subscriptions and redemptions) for shareholders on a daily basis.

Similar to the US Investment Company Act of 1940, Article 84 of the UCITS Directive requires a UCITS to repurchase or redeem its units at the request of any unitholder (in accordance with the redemption frequency). In contrast to US law, it also permits a UCITS, in accordance with the applicable national law, to adopt fund rules in the constituent documents to temporarily suspend the repurchase or redemption of its units. As discussed in Section 3.3.1, it is rare for a UCITS to use the temporary suspension power.

Member State laws provide more detail on requirements relating to subscriptions, redemptions, and valuation. In Ireland, for example, these requirements are set out in the Central Bank of Ireland (CBI) UCITS Rulebook⁸¹ or in CBI-issued guidance, in the form of the regularly updated CBI Questions and Answers⁸² and the UCITS Application Form.⁸³ These include a requirement that the maximum redemption charge shall not exceed 3 percent,⁸⁴ that the “twice a month” redemption requirement should occur “at regular intervals” (i.e., at least once per fortnight or two dealing days per month),⁸⁵ and provisions relating to gating,⁸⁶ redemption in kind,⁸⁷ use of anti-dilution levies⁸⁸ or duties and charges,⁸⁹ and of temporary suspensions⁹⁰ (discussed in greater detail on pages 20–28). With regard to valuation, these requirements include having a valuation policy⁹¹ for the assets of the UCITS and ensuring that the frequency of valuation is consistent with the dealing arrangements⁹² (i.e., that the UCITS computes the NAV as often as it deals, rules for valuation of money market funds,⁹³ and methods of valuation).⁹⁴

Similarly, in Luxembourg, the supervisory authority for the financial sector, the Commission de Surveillance du Secteur Financier (CSSF), issues additional detail, clarification, or guidance for UCITS in the form of circulars, regulations, or FAQs or Q&As. For example, these include a requirement that UCITS publish the issue, sale, and repurchase price of their units at least twice a month and for certain UCIs,⁹⁵ once a month, at the discretion of the CSSF if such derogation does not prejudice the interests of unitholders,⁹⁶ that the dealing frequency is appropriate under normal and stressed market conditions,⁹⁷ and provisions relating to temporary suspension.⁹⁸ With regard to valuation, these requirements include rules and methods of valuation⁹⁹ and valuation criteria.¹⁰⁰

Regulators in many other EU jurisdictions have similarly adopted such laws, regulations, and guidance relating to subscriptions, redemptions, and valuation.

Liquidity Risk Management

Risk Management Functions

A UCITS management company must employ a risk management process that enables it to monitor and measure the risk of the UCITS’ positions and their contribution to the overall risk profile of the UCITS’ portfolio at any time.¹⁰¹ Senior management of the UCITS management company (or the board of directors of the UCITS in the case of a self-managed structure) must approve and review on a periodic basis each UCITS’ risk management policy along with the arrangements, processes, and techniques for its implementation.¹⁰² Further, the permanent risk management function must be hierarchically and functionally independent from other operating units of the management company.¹⁰³

Liquidity Risk Management Requirements and Controls

The specific liquidity risk management requirements for a UCITS derive from a UCITS’ general obligation to “purchase and redeem its units at the request of any unitholder.”¹⁰⁴ More detailed provisions are found in the implementing Directive 2010/43/EU, which requires UCITS management companies to “formulate forecasts and perform analyses concerning the investment’s contribution to the UCITS portfolio composition, liquidity, and risk and reward profile prior to their investment.”¹⁰⁵ Additionally, a UCITS management company must have “procedures as are necessary to enable the management company to assess for each UCITS it managed the exposure of that UCITS to market, liquidity, and counterparty risks, including operational risks, which may be material for each UCITS it manages.”¹⁰⁶

UCITS management companies must assess, monitor, and periodically review the effectiveness of their risk management policy, the degree of compliance with the policy, and the adequacy of measures taken to address any deficiencies in the risk management process.¹⁰⁷ Further, they must notify NCAs of any material changes to their risk management process.

Stress Testing

For each UCITS that it manages, a management company must conduct periodic back-tests to review the validity of risk measurement arrangements, as well as periodic stress tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely affect the value of the UCITS portfolio.¹⁰⁸ Specifically, they must conduct tests that enable assessment of the liquidity risk of the UCITS under exceptional circumstances. In September 2019, ESMA issued specific Guidelines on Liquidity Stress Tests for UCITS and alternative investment funds (AIFs). The detailed guidelines, which are applicable as of September 2020, cover, among other things, the design of liquidity stress testing models, hypothetical and historical scenarios, governance principles, disclosure requirements, the stress testing of assets, liabilities and the combination of the two, and the frequency and occurrence of liquidity stress testing.¹⁰⁹ The guidelines state that liquidity stress testing should be carried out at least annually, at all stages of a fund's lifecycle, but recommend quarterly (or more frequently), depending on the fund's nature, scale and complexity, and liquidity profile. Each NCA (e.g., CBI and the CSSF) will need to comply (or explain noncompliance) with the guidelines for the UCITS they supervise.

Disclosure

UCITS management companies must disclose to their NCAs their risk management process upon authorization and notify them in the event of a material change. Investors also receive information about a UCITS' liquidity risk and liquidity risk management policy in the fund's disclosure documents, such as the prospectus and key investor information document.¹¹⁰

Liquidity Management Tools

UCITS management companies are able to use various operational tools to manage a UCITS' liquidity when necessary to respond to unforeseen market events or investor behavior. The NCA authorizes the specific tools that a UCITS domiciled in that jurisdiction may use for liquidity management. Beginning on page 19, this paper describes various liquidity management tools in detail and discusses their use during the recent stressed period.

Regulation of UCITS Money Market Funds

Overview

EU money market funds are open-ended investment vehicles that typically are authorized as UCITS and, accordingly, generally are subject to the UCITS provisions described above. Historically, EU money market funds were divided into two categories based on the duration of their underlying assets—short-term money market funds and standard money market funds. Short-term money market funds could only invest in assets with remaining maturity of 397 days or less, while standard money market funds could invest in assets with up to two years of remaining maturity.

In June 2017, the European Union adopted a new Money Market Fund Regulation (MMFR), which applies to all money market funds established, managed, or marketed in the European Union, following an agreement by G20 countries to reform the money market fund industry after the 2007–2009 financial crisis.¹¹¹ The MMFR established a new regulatory classification of both short-term and standard money market fund structures, and introduced rules on portfolio diversification and asset valuation. Additionally, the MMFR increased the requirements for credit quality, imposed stricter liquidity and stress testing conditions, prohibited funds from receiving any external financial support, implemented reporting requirements, and imposed new obligations on money market fund managers.

Types of UCITS Money Market Funds

As in the United States, the types of money market funds in the European Union differ based on their investments and intended investors. Under the MMFR, money market funds are classified into four different types, with specific regulatory requirements for each type:

- » public debt constant NAV (CNAV) money market funds (short-term),
- » low volatility NAV (LVNAV) money market funds (short-term),
- » short-term variable NAV (VNAV) money market funds (short-term), and
- » standard VNAV money market funds (standard).

Of the four types of UCITS money market funds, only the CNAV money market funds and the LVNAV money market funds are comparable to US money market funds. Like US money market funds, the shares of CNAV money market funds are purchased or redeemed at a constant price rounded to two decimal places (i.e., nearest cent or penny), and shares of LVNAV money market funds are purchased or redeemed at a constant price so long as the value of the underlying assets does not deviate by more than 0.2 percent (20 basis points) from par (i.e., 1.00). VNAV and standard money market funds have a variable NAV, and the standard money market funds are permitted to hold securities with a much longer maturity. (See page 45 for a chart providing more detail on the characteristics of these fund types.)

UCITS money market funds are typically denominated in three different currencies: US dollars, UK pounds sterling, and euros. Among money market funds that are registered with the Institutional Money Market Funds Association (IMMFA),¹¹² money market funds denominated in US dollars are generally made up of LVNAV and CNAV money market funds; money market funds denominated in UK pounds sterling are overwhelmingly LVNAV money market funds; and money market funds denominated in euros are generally made up LVNAV money market funds and short-term VNAV money market funds.^{113, 114}

Key Regulatory Requirements for UCITS Money Market Funds

The key regulatory requirements are described below and a chart summarizing those requirements is provided at the end of the section.

Asset Eligibility

The MMFR sets out a list of assets that money market funds can invest in subject to specific conditions and activities that funds may not undertake, noting that such funds should have a responsibility to invest in high-quality eligible assets.¹¹⁵ The list of eligible assets includes:

- » money market instruments including those representing public debt;
- » securitizations and asset-backed commercial paper (ABCPs);
- » deposits with credit institutions;
- » financial derivative instruments;
- » repurchase agreements;¹¹⁶
- » reverse repurchase agreements;¹¹⁷ and
- » units or shares of other money market funds.

Money market funds may not invest in assets outside the list of eligible assets; engage in short selling of money market instruments, securitizations, ABCPs, and shares of other funds; take direct or indirect exposure to equity or commodities; enter into secure lending or secure borrowing agreements; or borrow or lend cash.¹¹⁸

Daily and Weekly Liquidity Requirements

The MMFR introduced new liquidity requirements whereby money market funds must hold, on an ongoing basis, a minimum amount of liquid assets that mature daily or weekly.¹¹⁹ These liquidity requirements aim to strengthen money market funds' ability to satisfy redemptions.

The specific thresholds of daily or weekly maturing assets that money market funds must hold (as a percentage of the fund's portfolio) vary based on the type of fund. Generally, a money market fund may not acquire any asset other than a daily maturing asset when such acquisition would lead the fund to hold less than its required percentage of daily maturing assets. The same restriction applies to a fund's acquisition of any asset other than a weekly maturing asset if the fund's level of weekly maturing assets is below the required threshold.¹²⁰

Liquidity Fees and Gates

The MMFR introduced discretionary and mandatory liquidity fees and gates for CNAV and LVNAV money market funds to mitigate investor redemptions in times of severe market stress and ensure investor protection.¹²¹ Any liquidity fee should reflect the money market fund's cost of achieving liquidity and should not amount to a penalty charge that would offset losses incurred by other investors as a result of the redemption.¹²²

For CNAV and LVNAV money market funds, if the fund's weekly maturing assets fall below 30 percent of total assets and its net daily redemptions on a single working day exceed 10 percent of total assets, the board of directors of the management company has the discretion to impose liquidity fees or gates.¹²³ Moreover, if the money market fund's weekly maturing assets fall below 10 percent of the fund's total assets, the board is required to apply either liquidity fees or gates (or both), and to document the reasons for its choice.¹²⁴

Portfolio Diversification

To limit money market funds' risk-taking, the MMFR prohibits them from investing more than 5 percent of their assets in money market instruments, securitizations, and ABCPs issued by the same body.¹²⁵ It also limits investments in deposits with the same credit institutions to not more than 10 percent of the funds' assets and limits the amount of cash provided to the same counterparty in a reverse repurchase agreement to no more than 15 percent of the money market fund's assets.¹²⁶ Lastly, money market funds may not invest more than 17.5 percent of their assets in shares of other money market funds, with a limit of 5 percent in any one money market fund.¹²⁷

Stress Testing

The MMFR requires money market funds, as part of prudent risk management, to implement "sound stress testing processes that identify possible events or future changes in economic conditions that could have unfavorable effects on the [money market fund]."¹²⁸ The fund manager must assess the possible impact of such events, and if needed, take action to strengthen the robustness of the fund by, for instance, reinforcing its liquidity or the quality of its assets. Money market funds must conduct stress tests at least biannually, at a frequency determined by the board of directors of the money market fund, where applicable, or the board of directors of the manager of the money market fund.

If a stress test reveals any vulnerability of the money market fund, the fund manager must generate and submit to the board of directors "an extensive report with the results of the stress testing and a proposed action plan."¹²⁹ The board can amend the proposed action plan, if necessary, and approve its final version. The extensive report and the final action plan must be kept for a period of at least five years and submitted to the money market fund's NCA for review, which will then forward the report to ESMA.¹³⁰

In March 2020, ESMA issued guidelines on stress test scenarios under the MMFR.¹³¹ The results of these stress tests must be included in the quarterly reporting of the money market fund with the requirement that the first reports be submitted in September 2020 covering the first two quarters of 2020.¹³² In accordance with the MMFR, the guidelines will be updated at least every year, taking into account the latest market developments.¹³³

Obligations for Money Market Fund Managers

Beyond fund managers' obligations as related to stress tests, fund managers are responsible for ensuring overall compliance with the MMFR, and may be held liable for any loss or damage that results from noncompliance.¹³⁴ Among other things, a fund manager must establish, implement, and consistently apply a prudent internal credit quality assessment procedure for determining the credit quality of the assets in which the fund invests.¹³⁵

Disclosures to Investors and Regulators

In contrast to the US requirement to publicly disclose daily and weekly liquid assets for money market funds, fund managers must, at least weekly, inform investors about (i) the maturity of the breakdown of the fund's portfolio, (ii) the fund's credit profile, (iii) the fund's weighted average maturity (WAM) and weighted average life (WAL), (iv) details of the 10 largest holdings in the fund's portfolio, (v) the total value of assets, and (vi) the fund's net yield.¹³⁶ Many UCITS provide this information on a daily basis through client portals.

Money market fund managers also must report to the NCA, at least on a quarterly basis (or annually, for money market funds with less than €100 million in assets under management), information such as the fund's type and characteristic, portfolio indicators, results of stress tests (and proposed action plan, when necessary), and information on the assets and liabilities held in the fund's portfolio.¹³⁷

External Support

The MMFR prohibits all money market funds from receiving external support. It defines external support as direct or indirect support offered to a money market fund by a third party, including a sponsor of the fund, that aims to or results in guaranteeing the fund's liquidity or stabilizing its per share NAV, and provides a non-exhaustive list of items that constitute external support.¹³⁸

Comparison of UCITS Money Market Fund Types

	Types of money market funds			
	Public debt CNAV	LVNAV	Short-term VNAV	Standard VNAV
Fund category	Short-term	Short-term	Short-term	Standard
Eligible investments	99.5 percent of portfolio invested in public debt securities, reverse repo secured with government securities, and cash	Money market instruments, securitizations and ABCP, deposits, derivatives, repo, reverse repo, other money market fund	Money market instruments, securitizations, ABCP, deposits, derivatives, repo, reverse repo, other short-term money market fund	Money market instruments, securitizations, ABCP, deposits, derivatives, repo, reverse repo, other short-term money market fund
Maximum maturity	397 days	397 days	397 days	2 years
Asset valuation	Amortized cost accounting for all securities	Amortized cost, except for assets over 75 days maturity or more than 10 basis points from market value	Mark to market	Mark to market
NAV type	Constant NAV	Rounded NAV (if conditions met) ¹	Variable NAV	Variable NAV
NAV particulars	Calculated to two decimal places, or equivalent (i.e., €/£/\$ 1.00)	Calculated to two decimal places, or equivalent (i.e., €/£/\$ 1.00)	Calculated to at least four decimal places, or equivalent (i.e., €/£/\$ 1.0000)	Calculated to at least four decimal places, or equivalent (i.e., €/£/\$ 1.0000)
WAM/WAL²	60 days/120 days	60 days/120 days	60 days/120 days	180 days/365 days
Minimum daily liquidity/weekly liquidity	10 percent/30 percent	10 percent/30 percent	7.5 percent/15 percent	7.5 percent/15 percent
Discretionary fees and gates	Existing UCITS provisions on fund suspensions apply, and also apply when liquidity drops below 30 percent and daily net redemptions exceed 10 percent ³	Existing UCITS provisions on fund suspensions apply, and also apply when liquidity drops below 30 percent and daily net redemptions exceed 10 percent ³	Existing UCITS provisions on fund suspensions apply	Existing UCITS provisions on fund suspensions apply
Mandatory fees and gates	When weekly liquidity falls below 10 percent	When weekly liquidity falls below 10 percent	No	No

¹ LVNAV funds can issue and redeem shares at constant NAV (1.00) as long as the mark-to-market NAV remains within a tolerance of 20 basis points. Otherwise, the fund must deal at the variable NAV (i.e., mark to market).

² Weighted average maturity (WAM) is “the average length of legal maturity or, if shorter, to the next interest rate reset to a money market rate, of all the underlying assets,” and weighted average life (WAL) is the “average length of time to legal maturity of all the underlying assets.”

³ If these two events take place, the board has the discretion to implement liquidity fees and/or gates, after having completed a documented assessment of the situation.

Source: Regulation (EU) 2017/1131

APPENDIX B

Liquidity Management Tools in Select EU Jurisdictions

	Belgium	France	Germany	Ireland	Italy	Luxembourg	Netherlands	Spain	Sweden	United Kingdom
Suspensions¹	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Swing pricing¹	Yes	Yes	No [but changed FN]	Yes	No	Yes	Yes	Yes	No	Yes
Dual pricing¹	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Redemption fees¹	No	Yes	Yes	Yes	Yes, but limited ³	Yes	Yes	Yes	Yes	Yes
Gates¹	Yes	Yes	No	Yes	Yes, but not for retail	Yes	Yes	Yes	Yes	Yes
In-kind redemptions¹	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Anti-dilution levies¹	Yes	Yes	No	Yes	Yes, but limited	Yes	Yes	No	Yes	Yes
Temporary borrowing²	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Other liquidity management tools²	No	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes

¹ Responses come from information provided in Annex II of “Managing Fund Liquidity Risk in Europe: Recent Regulatory Enhancements and Proposals for Further Improvements,” Asset Managers and Investors Council and the European Fund and Asset Management Association, January 6, 2020, available at www.efama.org/Publications/Public/AMICEFAMA%20ReportManagingfundliquidityriskinEurope2020.pdf.

² Responses come from information provided in the appendix to the European Systemic Risk Board recommendation on action to address systemic risks related to liquidity mismatches and the use of leverage in investment funds, February 2018, available at www.esrb.europa.eu/pub/pdf/recommendations/esrb.recommendation180214_ESRB_2017_6.en.pdf.

³ The redemption fee applies as an alternative to entry fees and is limited.

Notes

- ¹ See European Fund Asset Management Association (EFAMA), “Trends in the European Investment Fund Industry in the Third Quarter of 2020,” *EFAMA Quarterly Statistical Release*, no. 83, December 2020, available at <https://www.efama.org/Publications/Statistics/Quarterly/Quarterly%20Statistical%20Reports/20%2012%20Quarterly%20Statistical%20Release%20Q3%202020.pdf>.
- ² As described further on page 13, UCITS are collective investment schemes authorized under a harmonized EU legal framework; they are substantively regulated and publicly offered.
- ³ For a detailed description of how the crisis unfolded and the impact of COVID-19 on economies and financial markets, see “The Impact of COVID-19 on Economies and Financial Markets,” *Report of the COVID-19 Market Impact Working Group* (Washington, DC: Investment Company Institute, October 2020) (2020 COVID-19 Report), available at www.ici.org/pdf/20_rpt_covid1.pdf.
- ⁴ The nine additional central banks were the Reserve Bank of Australia, Banco Central do Brasil, Danmarks Nationalbank (Denmark), Bank of Korea, Banco de Mexico, Reserve Bank of New Zealand, Norges Bank (Norway), Monetary Authority of Singapore, and Sveriges Riksbank (Sweden) with temporary swap lines to be in place for at least six months.
- ⁵ Dealers, especially the largest ones, are typically subsidiaries of banks. Banks are required to hold capital against their assets, including securities held by their dealer subsidiaries. As a result, any growth in the assets held by a dealer that is a subsidiary of a bank will require the bank on a consolidated basis to raise additional capital or to reduce assets elsewhere in the organization.
- ⁶ This paper notes a selection of the measures implemented by the ECB and the BoE over the past six months.
- ⁷ Initially launched in 2014, the APP currently consists of four distinct programs: the corporate sector purchase program, the public sector purchase program, the asset-backed securities purchase program, and the covered bond purchase program (third iteration). Information about the APP can be found at www.ecb.europa.eu/mopo/implement/omt/html/index.en.html.
- ⁸ Information about the PEPP can be found at www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html.
- ⁹ The PEPP, which will remain in place until terminated by the ECB (which will not be sooner than June 2021), enables the ECB to purchase securities from public and private sector issuers with—in most respects—the same criteria as under the APP. It does not include an upper threshold on the quantum of eligible securities the ECB can buy from one counterparty (including for sovereign bonds) and, in certain cases, the ECB is able to buy debt with lower maturities than under the APP. The residual maturity of public sector securities eligible for purchase under the PEPP ranges from 70 days up to a maximum of 30 years and 364 days.
- ¹⁰ Under the revised CSPP, the minimum maturity requirement for instruments with an initial maturity of less than a year (i.e., most commercial paper) is 28 days at time of purchase, whereas the previous minimum maturity requirement was six months. Information about the CSPP is available at www.ecb.europa.eu/mopo/implement/omt/html/cspp-qa.en.html.
- ¹¹ Unconditional liquidity operations, including new pandemic emergency longer-term refinancing operations, were offered to ensure a well-priced liquidity backstop for the banking system. The ECB also eased collateral requirements to make sure that banks could make full use of these operations. However, eligible assets only include instruments that are denominated in euros, even though many EU corporations issue debt in other major currencies. Information about the liquidity programs is available at www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200430_1~477f400e39.en.html.
- ¹² Further information about the CCFF is available at www.bankofengland.co.uk/markets/covid-corporate-financing-facility.
- ¹³ The BoE will make these purchases under an element of the APF known as the Corporate Bond Purchase Scheme (CBPS). Under the CBPS, the BoE can purchase bonds issued by companies (including their finance subsidiaries) that make a material contribution to economic activity in the United Kingdom, subject to certain restrictions. Corporate bonds issued by financial sector entities are not eligible. Information on the CBPS is available at www.bankofengland.co.uk/markets/market-notices/2020/asset-purchase-facility-additional-corporate-bond-purchases.
- ¹⁴ Information on the CTRF is available at www.bankofengland.co.uk/news/2020/march/boe-launches-contingent-term-repo-facility. Based on more stable funding market conditions and usage patterns, the BoE discontinued these CTRF operations at the end of May 2020.
- ¹⁵ See 2020 COVID-19 Report.

- ¹⁶ In mid-September, the Governing Council of the ECB announced that it concurred with ECB Banking Supervision that there are “exceptional circumstances” allowing the temporary exclusion of certain central bank exposures from the leverage ratio. The Governing Council said in an opinion: “The situation brought about by the coronavirus (COVID-19) pandemic has affected all euro area economies in an unprecedented and profound way. This situation has resulted in an ongoing need for a high degree of monetary policy accommodation, which in turn requires the undeterred functioning of the bank-based transmission channel of monetary policy. In the view of the Governing Council, therefore, the condition of exceptional circumstances warranting the temporary exclusion of certain exposures to central banks from the calculation of banks’ total exposure measures is met for the euro area as a whole.” See www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200917~f3f03398d2.en.html.
- ¹⁷ As of March 31, 2020, euro area nonfinancial businesses received 65 percent of their financing through bank loans and 35 percent through equity and debt capital markets. Comparatively, for the United States, nonfinancial businesses received 12 percent of their financing through bank loans and 88 percent through equity and debt capital markets (data are derived from the Federal Reserve Board and Eurostat).
- ¹⁸ The ECB and BoE efforts likely did have an indirect positive effect on the money markets.
- ¹⁹ For example, low volatility NAV money market funds consist of between 70 percent and 80 percent of financial paper. See “IMMFA Position Paper on Money Market Funds,” Institutional Money Market Funds Association, July 2020, page 5, available at www.immfa.org/assets/files/publications/IMMFA%20Position%20Paper%2015%20July%202020.pdf.
- ²⁰ Although industry participants brought these issues to the attention of the ECB, no changes were made to address these concerns.
- ²¹ Data for ETFs are excluded in this section; ETFs will be discussed on pages 34–37.
- ²² UCITS established and authorized in the United Kingdom are included because they qualify as UCITS until at least December 31, 2020.
- ²³ Information derived from Investment Company Institute calculations of data from Morningstar Direct.
- ²⁴ Data are based on Morningstar’s share class designation rather than the source of the underlying assets. For example, some assets in institutional share classes may be from large accounts made up of the small accounts from a large number of individual retail investors. Information derived from Investment Company Institute calculations of data from Morningstar Direct.
- ²⁵ Appendix A provides further information about the characteristics of each of these types.
- ²⁶ The Institutional Money Market Funds Association (IMMFA) represents the European money market fund industry. Investors in IMMFA member funds are largely composed of corporates (29 percent), other funds (29 percent), and financials (commercial, retail and investment banks, proprietary cash, prime brokerage) (17 percent), and third parties (14 percent) (sales platforms, nominees, and other distributors). Seventy-five percent of the investors are located in the European Union; of the non-EU investors, approximately 18 percent are located in North America, and the vast majority of the remainder are in Asia. See www.immfa.org/market-statistics/immfa-aum.html. Information about IMMFA and its membership is available at www.immfa.org.
- ²⁷ Data for net assets of UCITS money market funds domiciled in Ireland, Luxembourg, and the United Kingdom only include funds that are registered with IMMFA.
- ²⁸ See “Money Market Funds During the March–April Episode,” Thematic Note, The Board of the International Organization of Securities Commission, November 2020, available at www.iosco.org/library/pubdocs/pdf/IOSCOPD666.pdf.
- ²⁹ See “Lessons from COVID-19: The Experience of European MMFs in Short-Term Markets,” BlackRock, July 2020.
- ³⁰ For more information, see “Experiences of US Money Market Funds During the COVID-19 Crisis,” *Report of the COVID-19 Market Impact Working Group* (Washington, DC: Investment Company Institute, October 2020), available at www.ici.org/pdf/20_rpt_covid3.pdf.
- ³¹ Long-term UCITS include equity funds, fixed-income funds, mixed funds, and other funds, but exclude money market funds and exchange-traded funds.
- ³² Mixed funds invest in a combination of equity and fixed-income securities.
- ³³ Other long-term UCITS classified by Morningstar Direct include alternative, commodity, convertible, miscellaneous, property, and other unclassified funds. Information derived from Investment Company Institute calculations of data from Morningstar Direct.

- ³⁴ Data are based on Morningstar’s share class designation rather than the source of the underlying assets. For example, some assets in institutional share classes may be from large accounts made up of the small accounts of a large number of individual retail investors. Information derived from Investment Company Institute calculations of data from Morningstar Direct.
- ³⁵ See discussion about suspensions on pages 32–33.
- ³⁶ In addition to the regulatory requirements imposed directly on UCITS, the MiFID Product Governance regulations also provide a framework for the active management of liquidity issues through the life cycle of a product beginning with the product design phase. The product governance requirements of MiFID II aim to ensure that firms that manufacture and distribute financial instruments (including UCITS) act in the best interests of investors at all stages of a product’s development and distribution life cycle.
- ³⁷ See Appendix A, beginning on page 38.
- ³⁸ For example, beginning in April 2020, UCITS domiciled in Ireland and Luxembourg were required to complete, and submit to the UCITS’ home regulator a weekly questionnaire that covers: (i) total net assets; (ii) subscriptions; (iii) redemptions; and (iv) an update on governance arrangements in relation to activities performed by UCITS management companies in view of the specific circumstances and risks to which these companies are exposed to during the current period of market turbulence.
- ³⁹ ESMA recently called for increased convergence in Europe across regulators in the authorization of liquidity management tools. See www.esma.europa.eu/press-news/esma-news/esma-supports-esrb-actions-address-covid-related-systemic-vulnerabilities.
- ⁴⁰ The ability to use various liquidity management tools can be found in many jurisdictions around the world. See “Liquidity Management Tools in Collective Investment Schemes,” *IOSCO Final Report* (December 2015), available at www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf.
- ⁴¹ Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009, on the Coordination of Laws, Regulations, and Administrative Provisions Relating to Undertakings for Collective Investment in Transferable Securities (UCITS), as amended (UCITS Directive).
- ⁴² It is ICI’s understanding that full swing pricing is more likely to be used by funds with institutional investors whose transactions are larger in size and more likely to incur transaction costs; partial swing pricing is more likely to be used by funds with many, smaller retail investors where only larger aggregate flows are likely to incur transaction costs.
- ⁴³ Under the partial swing approach, it is assumed that small amounts of shareholder activity on a fund will not result in material transaction costs and that this can be covered by existing cash balances held within the fund.
- ⁴⁴ This practice has long been permitted in Luxembourg, Ireland, France, and the United Kingdom, but has only been allowed in Germany since March 2020.
- ⁴⁵ See UCITS Directive, Article 84(2).
- ⁴⁶ For example, in August 2020, France’s Autorité des marchés financiers (AMF) requested (but did not require) that H2O Asset Management suspend subscriptions and redemptions in certain of its UCITS due to significant exposure to illiquid debt and valuation uncertainties regarding such debt (following the AMF’s request, H2O Asset Management determined to suspend an additional four funds). See www.bloomberg.com/news/articles/2020-08-29/h2o-freezes-funds-as-french-watchdog-scrutinizes-windhorst-deal.
- ⁴⁷ As discussed in more detail in Appendix A, UCITS management companies have liquidity management programs, which include stress testing, to ensure that the fund is prepared to handle extreme but plausible market conditions.
- ⁴⁸ Some tools are not liquidity tools per se but aim at ensuring the equitable treatment of investors. See “Open-Ended Fund Liquidity and Risk Management—Good Practices and Issues for Consideration,” *IOSCO Final Report* (February 2018), available at www.iosco.org/library/pubdocs/pdf/IOSCOPD591.pdf.
- ⁴⁹ ICI conducted a survey of its members to gather information regarding which tools UCITS employed, or had adopted but did not employ, during the stressed period. Twenty-nine ICI member UCITS complexes provided survey responses. The participating fund complexes manage approximately \$2.54 trillion of UCITS assets, representing 46 percent of the \$5.47 trillion UCITS assets managed by ICI members at the end of June 2020. The total UCITS assets under management were \$10 trillion as at June 30, 2020, according to Morningstar.
- ⁵⁰ The term “adopted” refers in this context to a UCITS reserving the right to use a particular tool through disclosure of such potential use in the UCITS’ prospectus or other disclosure documents.

- ⁵¹ These results do not include money market funds or ETFs. Respondents that indicated they had not adopted swing pricing for at least one of their UCITS do not offer ETFs as an investment product.
- ⁵² As noted in Figure 4.12, 52 percent of respondents have adopted partial swing pricing as an option for at least one of their UCITS. During March 2020, 48 percent of respondents reported executing a partial swing—meaning that 92 percent (0.48 divided by 0.52) executed a swing for at least one of their UCITS.
- ⁵³ A fund that has adopted partial or full swing pricing “uses” it every dealing day in determining whether to swing the NAV, but the NAV is swung only on certain dealing days.
- ⁵⁴ UCITS that have adopted partial swing pricing have discretion to adjust the level of the threshold that causes the NAV to be swung. A UCITS with partial swing pricing, for example, could decide to lower the threshold to zero. This action effectively means that the UCITS is using full swing pricing. When the UCITS raises the threshold, it reverts to using partial swing pricing.
- ⁵⁵ Using data on open-end corporate bond mutual funds, the Financial Conduct Authority found that alternative pricing rules (swing and dual pricing) alter investors’ behavior and significantly reduce redemptions that are observed during stressed periods. See “Swing Pricing and Fragility in Open-End Mutual Funds,” Financial Conduct Authority, March 2019, available at www.fca.org.uk/publication/occasional-papers/occasional-paper-48.pdf.
- ⁵⁶ In the second half of March, 43 UK-domiciled open-end real estate funds, representing more than £28 billion in AUM, suspended redemptions as result of material uncertainty in the independent valuations of their underlying assets and growing redemption pressures. Although these funds are not UCITS, they warrant mention because of the significant press coverage the suspensions received. The UK Financial Conduct Authority (FCA) completed one set of regulatory reforms for funds investing in inherently illiquid assets, including real estate, before the COVID-19 pandemic. See Financial Conduct Authority PS19/24: Illiquid Assets and Open-Ended Funds and Feedback to Consultation Paper CP18/27, available at www.fca.org.uk/publications/policy-statements/ps19-24-illiquid-assets-and-open-ended-funds-and-feedback-consultation-paper-cp18-27. These reforms came into effect in September 2020 but have already been adopted by much of the industry, and include a requirement to suspend redemptions if there is material uncertainty over the value of 20 percent or more of the fund’s portfolio. On August 3, 2020, the FCA published a consultation on further reforms for real estate funds, including the introduction of an irrevocable notice period for redemptions of 90–180 days. See Financial Conduct Authority Consultation on Liquidity Mismatch in Authorized Open-Ended Property Funds, available at www.fca.org.uk/publication/consultation/cp20-15.pdf.
- ⁵⁷ Other reports have similarly found that the total AUM of UCITS that suspended redemptions during the crisis period was very small. See, for example, ESMA report on the recommendation of the European Systemic Risk Board (ESRB) on liquidity risk in investment funds (which include both UCITS and AIFs), issued November 12, 2020, at page 52, available at www.esma.europa.eu/sites/default/files/library/esma34-39-1119-report_on_the_esrb_recommendation_on_liquidity_risks_in_funds.pdf; and Fitch Ratings report “Global Mutual Fund Suspension Redemptions Highlight Liquidity Mismatches,” issued June 22, 2020.
- ⁵⁸ In Norway, Germany, and the Netherlands, one UCITS each suspended redemptions, which did not create any market concerns.
- ⁵⁹ Unlisted Danish UCITS are not subject to this requirement. The vast majority of unlisted Danish UCITS comply with the Danish Investment Association’s recommendation to calculate the NAV per unit as least once a day.
- ⁶⁰ The AUM of the bond funds that suspended redemptions is approximately 20 percent of the total AUM of Swedish bond funds.
- ⁶¹ Three funds were suspended for seven days.
- ⁶² For information on US-registered ETFs during the market turmoil, see “Experiences of US Exchange Traded Funds During the COVID-19 Crisis,” *Report of the COVID-19 Market Impact Working Group* (Washington, DC: Investment Company Institute, October 2020).
- ⁶³ See “Lessons from COVID-19: ETFs as a Source of Stability,” BlackRock, July 2020.
- ⁶⁴ See “Holistic Review of the March Market Turmoil,” Financial Stability Board, November 17, 2020, available at www.fsb.org/wp-content/uploads/P171120-2.pdf.
- ⁶⁵ See, e.g., Kevin Pan and Yao Zeng, “ETF Arbitrage Under Liquidity Mismatch,” European Systemic Risk Board Working Paper Series, no. 59 (March 2019), which suggests that liquidity mismatch and AP balance sheet space constraints are important limits to arbitrage in corporate bond ETFs, which ultimately affect ETF pricing (available at www.esrb.europa.eu/pub/pdf/wp/esrb.wp59.en.pdf).

- ⁶⁶ “Holistic Review of the March Market Turmoil,” Financial Stability Board, November 17, 2020, available at www.fsb.org/wp-content/uploads/P171120-2.pdf; see also Securities and Exchange Commission, Division of Economic and Risk Analysis, “US Credit Markets: Interconnectedness and the Effects of the COVID-19 Economic Shock” (October 2020): 33, available at www.sec.gov/files/US-Credit-Markets_COVID-19_Report.pdf; Bank of England, “Financial Stability Report” (August 2020): 76, available at www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2020/august-2020.pdf (noting that ETFs became one of the key mechanisms for price discovery during the COVID-19 shock); Sirio Aramonte and Fernando Avalos, “The Recent Distress in Corporate Bond Markets: Cues from ETFs,” *BIS Bulletin*, no. 6 (April 14, 2020), available at www.bis.org/publ/bisbull06.pdf; Dave Baxter, “What We Learnt from Fixed-Income ETFs During the COVID Sell-Off,” *Financial Times*, August 26, 2020, available at www.ft.com/content/8ef56fa2-affe-461a-9fcf-fc28571e731e; and *Financial Times*, “ETFs Have Proved Critics Wrong During the Crisis,” Editorial, April 30, 2020, available at www.ft.com/content/edae8e90-8a1e-11ea-9dcb-fe6871f4145a.
- ⁶⁷ See Securities and Exchange Commission, Division of Economic and Risk Analysis 2020 at 38 noting that “ETF market prices can rapidly incorporate new information as it becomes available. In contrast, most bonds trade only infrequently, and as a result, bond prices may be relatively insensitive to the arrival of new information. Bond funds, including bond ETFs, generally calculate their NAV in reliance on evaluated prices, matrix prices, price opinions, or similar pricing estimates. During periods of market volatility when the information environment is changing rapidly—as was the case during in March 2020—ETF market prices are viewed by some market participants as a more reliable indicator of actionable value than the ETF’s NAV.” See also Stephen Laipply and Ananth Madhavan, “Pricing and Liquidity of Fixed-Income ETFs in the COVID-19 Virus Crisis of 2020,” *Journal of Index Investing* (Winter 2020), available at <https://doi.org/10.3905/jii.2020.1.096>.
- ⁶⁸ Directive 2009/65/EC of the European Parliament and of the Council, of 13 July 2009, on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS), as amended (UCITS Directive). Adopted shortly thereafter, Directive 2010/43/EU of 1 July 2010 implements the UCITS Directive with regard to organizational requirements, conflicts of interest, conduct of business, risk management, and content of the agreement between a depositary and a management company (Implementing Directive).
- ⁶⁹ The national law of each country in which the UCITS is domiciled may implement the UCITS Directive with some variations.
- ⁷⁰ Such guidelines are typically directly applicable only to the Member State competent authorities, which must comply with the guidelines or explain their reasons for noncompliance.
- ⁷¹ UCITS Directive, Article 1(2).
- ⁷² ETFs in Europe typically are organized as UCITS and (unlike ETFs organized in the United States) do not require specific exemptive relief to fit within the UCITS framework, other than a few minor derogations regarding clearing and settlement from the Member State national regulator where the ETF is domiciled.
- ⁷³ A management company must at all times: (i) act honestly and fairly in the best interests of its clients; (ii) act with due skill, care and diligence in the best interests of its clients; (iii) have and employ effectively the necessary resources and procedures; (iv) avoid conflicts of interest and where they cannot be avoided, ensure its clients are fairly treated; and (v) comply with all regulatory requirements so as to promote the best interests of its clients.
- ⁷⁴ UCITS Directive, Article 50(1).
- ⁷⁵ The CBI, with the support of ESMA, has adopted a more stringent policy with regard to particular financial derivative instruments. See UCITS Questions and Answers, Central Bank of Ireland, ID 1094 on page 14, available at www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds/ucits/guidance/ucits-qa-29-edition.pdf?sfvrsn=2.
- ⁷⁶ UCITS Directive, Article 2(n). In 2007, the Eligible Assets Directive, in Article 2, clarified the definition of transferable securities by providing that the reference to transferable securities shall be understood as a reference to financial instruments that fulfill the following criteria:
- (a) the potential loss that the UCITS may incur with respect to holding those instruments is limited to the amount paid for them;
 - (b) their liquidity does not compromise the ability of the UCITS to comply with its obligation to provide at least fortnightly redemption facilities;
 - (c) reliable valuation is available for them as follows:
 - (i) in the case of securities admitted to or dealt in on a regulated market in the form of accurate, reliable, and regular prices that are either market prices or prices made available by valuation systems independent from issuers;

(ii) in the case of other securities (i.e., the aggregate 10 percent that can be invested in transferable securities and money market instruments not specifically referred to in Article 19(1)), in the form of a valuation on a periodic basis that is derived from information from the issuer of the security or from competent investment research;

(d) appropriate information is available for them as follows:

(i) in the case of securities admitted to or dealt in on a regulated market as referred to in subparagraphs (a) to (d) of Article 19(1), in the form of regular, accurate, and comprehensive information to the market on the security or, where relevant, on the portfolio of the security;

(ii) in the case of other securities as referred to in Article 19(2), in the form of regular and accurate information to the UCITS on the security or, where relevant, on the portfolio of the security;

(e) they are negotiable;

(f) their acquisition is consistent with the investment objectives or the investment policy, or both, of the UCITS;

(g) their risks are adequately captured by the risk management process of the UCITS.

⁷⁷ UCITS Directive, Article 50(2).

⁷⁸ UCITS Directive, Article 52. This general rule is, however, subject to certain exceptions, including for investments issued or guaranteed by governments, local authorities, or certain public international or supranational bodies. See UCITS Directive, Articles 53–57.

⁷⁹ UCITS Directive, Article 85.

⁸⁰ UCITS Directive, Article 76.

⁸¹ Central Bank (Supervision and Enforcement) Act 2013 (Section 48(1)) (Undertakings for Collective Investment in Transferable Securities) (Amendment) Regulations 2019 (CBI UCITS Rulebook), available at <http://www.irishstatutebook.ie/eli/2019/si/230/made/en/print?q=230>.

⁸² Central Bank of Ireland UCITS Questions and Answers, 29th Edition, July 13, 2020 (CBI UCITS Q&A), available at <https://centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds/ucits/guidance/ucits-qa-29-edition.pdf?sfvrsn=2>.

⁸³ Central Bank of Ireland UCITS Application Form, Section 2—Prospectus (August 2019) (CBI UCITS Application Form), available at <https://centralbank.ie/regulation/industry-market-sectors/funds/ucits/forms>.

⁸⁴ CBI UCITS Q&A, Question 1025.

⁸⁵ CBI UCITS Application Form, Section 2.14.4.

⁸⁶ CBI UCITS Rulebook, Regulation 33.

⁸⁷ Id., Regulation 63.

⁸⁸ Id., Regulation 38.

⁸⁹ CBI UCITS Application Form, Sections 2.14.5 and 2.14.8.

⁹⁰ CBI UCITS Rulebook, Regulation 33.

⁹¹ Id., Regulation 34.

⁹² Id., Regulation 35(2).

⁹³ Id., Regulation 91.

⁹⁴ CBI UCITS Rulebook, Regulation 36(1) and Schedule 5 and Central Bank UCITS Asset Valuation Guidance.

⁹⁵ UCIs are undertakings for collective investment governed by Part II of the Luxembourg law of 17 December 2010 Relating to Undertakings for Collective Investment, as amended.

⁹⁶ Luxembourg Law of 17 December 2010 Relating to Undertakings for Collective Investment, as amended (Luxembourg Law of 2010), Article 157.

⁹⁷ CSSF circular 19/733 of 20 December 2019, Section III.I.

⁹⁸ Luxembourg Law of 2010, Article 73(2).

⁹⁹ Id., Article 9.

- ¹⁰⁰ CSSF circular IML 91/75 of 21 January 1991, Chapter G IV.2.
- ¹⁰¹ UCITS Directive, Article 51(1).
- ¹⁰² Implementing Directive, Article 9(2)(f).
- ¹⁰³ *Id.*, Article 12(2).
- ¹⁰⁴ UCITS Directive, Article 84(1). A UCITS may temporarily suspend the repurchase or redemption of its units and its national competent authority may require the suspension of the repurchase or redemption of units in the interest of the unitholders or the public.
- ¹⁰⁵ Implementing Directive, Article 23(4).
- ¹⁰⁶ *Id.*, Article 38(1).
- ¹⁰⁷ *Id.*, Article 39(1).
- ¹⁰⁸ *Id.*, Article 40.
- ¹⁰⁹ See *ESMA Final Report: Guidelines on Liquidity Stress Testing in UCITS and AIFs*, September 2, 2019, available at www.esma.europa.eu/sites/default/files/library/esma34-39-882_final_report_guidelines_on_lst_in_ucits_and_aifs.pdf.
- ¹¹⁰ In a recent letter to the European Commission regarding the upcoming review of the Alternative Investment Fund Managers Directive, ESMA recommended that certain liquidity and risk management requirements applicable to alternative investment funds, as well as certain data reporting obligations, be applied to UCITS as well. The letter is available at www.esma.europa.eu/sites/default/files/library/esma34-32-551_esma_letter_on_aifmd_review.pdf.
- ¹¹¹ Regulation (EU) 2017/1131, of the European Parliament and of the Council of 14 June 2017 on Money Market Funds, 2017 O.J. (L 169) 8 (MMFR). The MMFR applies directly in every Member State without having to be brought into law locally, but money market funds are still subject to authorization and supervision by each Member State's regulator. Existing money market funds had until January 21, 2019, to comply with the new requirements, whereas money market funds created after July 21, 2018, were required to comply from inception.
- ¹¹² Information about IMMFA and its membership is available at www.immfa.org.
- ¹¹³ Among EU money market funds registered with IMMFA as of July 31, 2020, 66 percent of money market fund assets denominated in US dollars were in LVNAV funds, 30 percent were in CNAV funds, and 4 percent were in short-term VNAV funds. Ninety-seven percent of money market fund assets denominated in UK pounds sterling were in LVNAV funds. Eighty-one percent of money market fund assets denominated in euros were in LVNAV funds and 19 percent were in short-term VNAV funds.
- ¹¹⁴ There is a significant amount of assets in euro-denominated money market funds domiciled in France, the vast majority of which are standard VNAV money market funds.
- ¹¹⁵ MMFR, Recital 31 and Article 9.
- ¹¹⁶ In these transactions, a money market fund acts as the seller of the securities; in the United States, these same transactions are referred to as "reverse repurchase agreements."
- ¹¹⁷ In these transactions, a money market fund acts as the buyer (cash provider) of securities; in the United States, these same transactions are referred to as "repurchase agreements."
- ¹¹⁸ MMFR, Article 9.
- ¹¹⁹ MMFR, Recital 38; Article 24 (noting that daily maturing assets are assets such as cash that can be withdrawn by giving one working day's prior notice, securities that mature within one working day, and reverse repurchase agreements that can be terminated by giving one day's prior notice; and "weekly maturing assets" are similar assets, but that instead have enough flexibility in terms of maturity, withdrawal, and termination to be able to be effected within five working days).
- ¹²⁰ MMFR, Article 24.
- ¹²¹ *Id.* Recital 48 and Article 34 (defining gates as a complete suspension of redemptions for up to 15 working days; and noting that boards may also limit the amount of shares that can be redeemed on any one working day to a maximum of 10 percent of the shares in the fund, for up to 15 working days).
- ¹²² *Id.*

- ¹²³ Id., Article 34, 1(a) (stating that the money market fund manager must immediately inform its board about the occurrence, and the board must engage in a documented assessment of the situation and consider investors' interests before deciding whether or not to impose fees or gates).
- ¹²⁴ Id., Article 34, 1(b) (noting that with mandatory fees or gates, the manager must also inform the board immediately after the occurrence, and the board must undertake a documented assessment of the situation and consider investors' interests before imposing fees or gates (or both)).
- ¹²⁵ Id., Article 17.
- ¹²⁶ Id.
- ¹²⁷ Id., Article 16.
- ¹²⁸ Id., Article 28 (noting a list specific factors that stress tests must consider, such as hypothetical changes in the liquidity of the money market fund's assets, changes in the level of credit risk of the fund's assets, and changes in the fund's levels of redemptions, among others).
- ¹²⁹ Id.
- ¹³⁰ Id. (stating that ESMA will issue guidelines on stress testing that are "updated at least every year taking into account the latest market developments"); see *ESMA Final Report: Technical Advice, Draft Implementing Technical Standards and Guidelines Under the MMF Regulation*, ESMA 34-49-103 (November 13, 2017).
- ¹³¹ See ESMA, Guidelines on Stress Test Scenarios Under the MMF Regulation, March 3, 2020, available at www.esma.europa.eu/sites/default/files/library/esma34-49-172_guidelines_on_mmf_stress_tests_en.pdf. On August 27, 2020, ESMA announced that these guidelines will be updated by the end of 2020 to include a modification of the risk parameters to reflect market developments related to the COVID-19 pandemic. See www.esma.europa.eu/press-news/esma-news/risk-parameters-in-esma%E2%80%99s-guidelines-stress-test-scenarios-under-money-markets.
- ¹³² On March 31, 2020, ESMA announced a delay in the date of submission of the first reports from April 2020 to September 2020. See press release at www.esma.europa.eu/press-news/esma-news/esma-announces-update-reporting-under-money-market-funds-regulation.
- ¹³³ In Ireland, the CBI has confirmed that it requires full compliance with the guidelines from May 4, 2020. See www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds/industry-communications/notice-of-intention-esma-guidelines-on-stress-test-scenarios-30-april-2020.pdf?sfvrsn=2.
- ¹³⁴ MMFR, Article 7.
- ¹³⁵ Id., Article 19 (noting that the manager must review at least annually the credit quality assessment methodologies to determine whether they remain appropriate, and communicate the review to the competent authority).
- ¹³⁶ Id., Article 36.
- ¹³⁷ Id., Article 37.
- ¹³⁸ Id., Article 35 (listing as "external support" from a third party as items such as cash injections, purchases of the fund's assets at "an inflated price," purchases of the funds' shares to provide liquidity to the fund, or "any kind of explicit or implicit guarantee" of support for the benefit of the fund, among others). In a public statement issued on July 9, 2020, which was welcomed for the certainty it provided, ESMA clarified the basis upon which such intermediation could occur in a manner consistent with the prohibition on external support. See ESMA Public Statement on Actions to Mitigate the Impact of COVID-19 on the EU Financial Markets—External Support Within the Meaning of Article 35 of the MMF Regulation (issued July 9, 2020), available at www.esma.europa.eu/sites/default/files/library/esma34-39-1096_esma_statement_mmf_art35.pdf.



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