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The Liquidity Management Working Group* of the Euro Banking Association conducted several discussions in late 2022 and 2023 with experts from its member community and several guest speakers from corporate treasurers and asset management firms. The results of this discussion are summarised in this paper.

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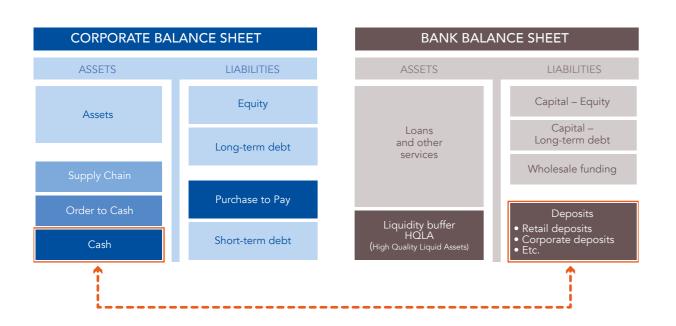
 $^{^*\} https://www.abe-eba.eu/thought-leadership-innovation/liquidity-management-working-group/$

1 Introduction

Liquidity management is at the heart of the relationship between banks and their corporate clients. Banks use the deposits of businesses and retail clients as their funding base and to manage their own balance sheets, while companies use liquidity to finance their business model (operational processes/working capital) and strategies. Previous papers published by the EBA Liquidity Management Working Group (LMWG) have explored this relationship between banks and their corporate clients. focusing on their interactions within the liquidity management ecosystem. They have covered topics such as the use and value of real-time data by corporates to optimise liquidity and improve business decision-making, liquidity strategies adopted by banks and corporate treasurers during the COVID-19 pandemic, and the impact of regulation on liquidity management.

In the post-pandemic environment, high inflation, rising interest rates, and increased geopolitical uncertainty have generated an "imperfect storm" for the liquidity management ecosystem to navigate, with the convergence of these several less-than-optimal developments bringing forth a complex set of challenges for the industry. In this context, delving into core cash management liquidity issues has become increasingly relevant for banks as they seek to effectively manage their balance sheets and best support the needs of their corporate treasurer customers. This report considers how high inflation, rising interest rates and elevated geopolitical uncertainty is impacting the liquidity management ecosystem, and provides guidance on how banks and corporates should respond.

Figure 1 The Liquidity Management Ecosystem



2 The shift to a high-interest rate paradigm

The societal disruptions that have emerged over the last few years have created an unprecedented set of challenges for liquidity management professionals. These are summarised at a highlevel below:

- High inflation in many advanced economies has led to an unexpectedly rapid pace of global central bank policy tightening.
- The ongoing geopolitical tension has resulted in extraordinary uncertainty and a global energy crisis, contributing to greater volatility in fixed income, equities, exchange rates, and commodities markets.
- Meanwhile, the persistent supply chain and labour market crises that initially emerged following the pandemic have continued to create extremely challenging conditions under which banks and companies operate.
- Coupled with the uncertainty of the ongoing global economic recovery, this adds further complexity to the already volatile business environment.

Perhaps the most salient aspect of today's environment has been the increased price of liquidity stemming from central bank interest rate hikes. Beginning in 2022, central banks

Figure 2 Central bank policy rates over the last two decades

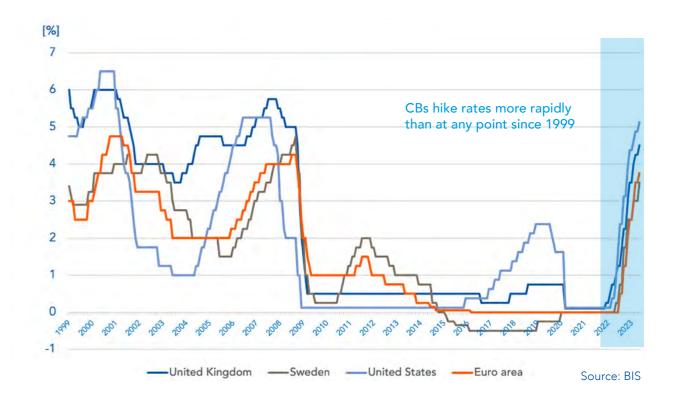
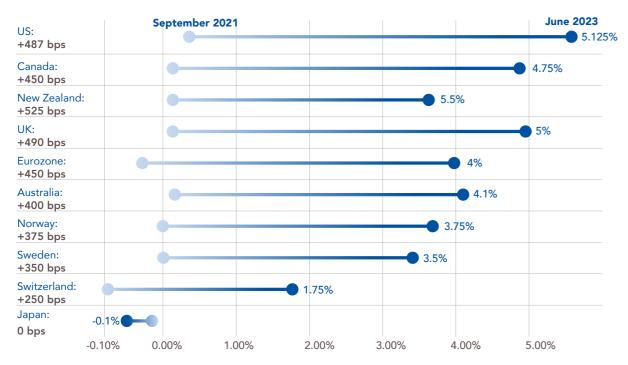


Figure 3 Comparison of CB rate hikes over the last 2 years



Source: Reuters, BIS

globally launched aggressive monetary policy tightening measures to combat inflation (of over 10 percent year-over-year in some markets) driven in part by the sanctions-induced energy crisis and recurrent supply chain problems. This marked a sudden shift compared to the prior decade, which had been characterised by zero and even negative interest rates, which made cash a more expensive asset now than at any point in the last fifteen years. Notably, the pace at which this occurred was faster than during prior tightening cycles (figure 2) and has taken place concurrently across advanced economies and emerging markets, which has not typically been the case historically.

For banks and corporate treasurers, rising interest rates have led to increases in the cost of capital, perceived risk of refinancing, and cost of external debt. For banks, there are also significant implications of rapid interest rate increases for their balance sheets, such as higher profitability resulting from potential mismatches in interest income (from assets/loans) and interest cost (from liabilities/current account balances and deposits). Unsurprisingly, there has been a sharp increase in market activity in interest rate swaps driven by financial institutions seeking to protect their balance sheet from such risks over the past year, as shown in the amount of gross notional outstanding and net notional positions in EURIBOR-based interest rate swaps (figure 3).1 There is the risk that interest rates may rise

There is the risk that interest rates may rise further or remain higher for longer to contain inflationary pressures and keep inflation expectations anchored.²

Many central banks have also indicated that they intend to reduce the supply of central bank liquidity in the form of quantitative tightening, a reversal of the large balance sheet expansions that took place during the pandemic era.3 For several years, the ECB used targeted longer-term refinancing operations (TLTROs) with the aim of providing cheap financing to banks for periods of up to four years. During the pandemic, it conducted a series of emergency TLTROs to provide liquidity support for the financial system of the euro area.4 However, the size of these refinancing operations on the ECB's balance sheet is expected to continue to decline over the medium term as the ECB increases the cost of this financing and previous TLTRO loans are repaid.5 In March 2023, the ECB began "unwinding" the asset purchases made under the Asset Purchase Programme (APP).6 Although the impact of these policies is not yet known, they are intended to reduce the supply of liquidity available to the

market, which may have an additional impact on

the cost of funding.

https://www.ecb.europa.eu/pub/financial-stability/fsr/focus/2022/html/ecb.fsrbox202211_03~b521c85b4b.en.html

² https://www.europarl.europa.eu/cmsdata/244615/2_TRENTO.pdf

https://www.europarl.europa.eu/RegData/etudes/STUD/2023/741488/IPOL_STU(2023)741488_EN.pdf

⁴ https://www.ecb.europa.eu/mopo/implement/omo/html/index.en.html

⁵ https://research-center.amundi.com/article/tltro-context-ecb-policy-normalisation

https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp230302~41273ad467.en.html

3 Reassessing corporate treasury priorities in today's environment

The new environment of higher interest rates presents new and unfamiliar challenges for banks and corporate treasurers to navigate. In addition to these, several other challenges have presented themselves, which also require a rethinking of bank and corporate treasurers' core priorities and objectives. For one, the memories of the widespread economic disruption caused by the pandemic have not yet faded, and bank failures in the US and turmoils in Europe during the first half of 2023 are another reminder of how unexpected events can create global market turbulence.

With the global economy increasingly interconnected and markets interdependent, the potential impact of highly disruptive and low probability events - also known as "black swan" events - on businesses and economies is perceived to be higher. Treasurers must therefore remain vigilant about protecting against future market disruptions and invest in solutions and strategies that can provide the quickest and easiest access to cash, affording them the ability to weather such events more easily in the future. In some cases, this may also mean holding higher liquidity buffers than was previously the case. Treasurers may also seek to develop clearer contingencies for making and receiving funds in the event of highly disruptive market events. The safest contingency in a time of crisis is to hold cash in high-quality secure assets, as even a commercial paper program is not sufficient in times of real crises.

Effectively managing liquidity amid increased geopolitical uncertainty has become an extremely important aspect of treasurers' liquidity and risk management strategies as geopolitical events can create significant knock-on effects. These include the sudden loss of customers or markets and the unexpected loss of revenues

and EBITDA.⁷ Moreover, it can result in greater valuation and legal risks stemming from sanctions, potentially leading to reduced cash flow and a negative P&L impact from exposure in certain risky markets or exotic currencies. Treasures must therefore frequently reassess their relationships with financial institutions in markets perceived to be politically risky, in addition to reducing their exposures. For banks, this may mean implementing policies requiring counterparties to take haircuts on the value of collateral pledged, e.g., less common currencies.

Treasurers also have to manage increased counterparty risk stemming from higher insolvency rates, which have increased in response to rising interest rates and a withdrawal of pandemic-related stimulus support for companies. As a result, businesses must now factor in a greater likelihood of delayed or even non-payment. To manage such risks, credit management functions within businesses should more closely monitor counterparty exposures and limits. The unexpected collapse of Silicon Valley Bank in Q1 2023 placed liquidity management under a renewed spotlight in this context. Greater market volatility due to rising interest rates can also lead to sharp and sudden changes in the value of exposures and asset collateral, underscoring the need for greater data transparency in addition to external counterparty risk management resources (e.g., money market funds, separate account managers, and credit risk agencies).

Figure 4 Changes in the external environment have forced a reassessment of treasurers' priorities



In today's environment, companies must aim to reduce their reliance on external financing for their working capital needs, lower their dependence on external funding, reduce their interest expense, and generate value as cash becomes more expensive. With lower levels of external debt, companies become more reliant on equity and retained earnings, as well as maximising working capital efficiencies. Effectively recycling cash (e.g., shifting to a greater reliance on self-financing or more quickly repaying debt) to reduce dependencies on external debt and reduce interest expense is of utmost importance.

The C-suite increasingly looks to treasurers for data-driven input on broad strategy questions impacting the organisation. This has reinforced treasurer demand for better cash visibility and control over their liquidity positions to take on this task. While the current motivations for achieving these goals are different than during the pandemic era, the need to do so has taken on a renewed sense of urgency.

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https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp230302~41273ad467.en.html

4 Strategies and tools for banks and corporates to optimise cash more effectively

The preceding long period of extremely low volatility and low interest rates has, to some extent, resulted in a gap in industry expertise on how to best utilise cash as a scarce asset. Indeed, there are many liquidity management professionals who have never or not recently operated in a rising interest rate environment. As treasury priorities and the environment evolve, it is important for treasurers to have the right tools to be able to better optimise their use of cash.

Treasurers are facing an immediate need to more effectively upstream liquidity to increase the liquidity efficiency of the organisation, to free up more liquidity and to facilitate faster debt repayment and/or interest expense reduction. It therefore becomes increasingly important for businesses to reconsider how to best use and allocate liquidity within their organisations. For example:

- Companies may shift more toward internal financing of working capital using strategies such as reducing inventory or more quickly collecting accounts receivables to avoid the higher costs of short-term external financing.
- Other corporates may seek to reconsider their organisational setup through the creation of an in-house bank to better manage the recycling of cash.8
- Treasurers are well-positioned to drive conversations within their organisations on how to balance key performance indicators (KPIs), how to effectively make use of consolidated liquidity positions and allocation, and reassessing terms of trade.

Cash pooling solutions, which many treasurers consider as the cornerstone of their cash management operations, allow for a more efficient redistribution of cash across different legal entities. For treasurers looking to leverage internal financing options to reduce the level of debt and the interest expense of external funding, solutions such as cash concentration/cash pooling, real-time settlement/payments, and virtual account structures can be used to achieve a consolidated liquidity position that provides a natural offset of debt and credit balances. These structures enable greater use of internal cash for working capital and debt repayment needs and reduced costs associated with the use of overdraft facilities and short-term borrowing. The centralisation of cash that virtual accounts offer helps to reduce the time and resources needed to manage treasury operations, lowering operational costs, and facilitating more efficient use of and access to cash. Real-time payments and their immediate finality of settlement allow for greater control of cash with the ability to make an increasing number of "just-in-time" payments for certain business models. However, corporate treasurers have highlighted that the benefits come not only from the real-time processing of payments but also the processes around it, with the streamlining of AML processes and sanctions screening prior to payment execution posing a particular challenge.

Moreover, leveraging tools such as multicurrency cash pools across global operations is similarly important. For one, the cost of having surplus cash in one market and relying on an overdraft facility to fund operations in another market has increased. As such, tools to automatically repatriate unused cash or solutions for trapped cash help to minimise the

Figure 5 Liquidity management strategies applicable to the new liquidity environment



Figure 6 Benefits of various strategies and tools for banks and corporates to optimise cash more effectively

Objective	Strategies and tools	Benefits
Achieve greater working capital efficiencies	 Greater reliance on self-financing Driving broader conversationsabout the use and awareness of cash across the organisation Reassessing terms of trade and KPIs 	Greater liquidity efficiency Faster debt repayment and interest expense reduction Reduced dependence on external funding sources
Enhance cash visibility, automation, and control	 Set up treasury function as an in-house bank Cash flow forecasting Use of cash pooling solutions Real-time payments 	Understand dynamics of the firms future cash flows and netting opportunities Achieving consolidated liquidity positions Reduced costs of overdraft facilities and borrowing Lowering operational costs in treasury operations Facilitating "just-in-time" liquidity
Maximise the use of multi currency cash	 Multi-currency cash pools Reducing short-term debt facility usage Reassessment of FX hedging strategies Trapped cash solutions Leveraging FX swaps for multi-currency liquidity 	 Improved multi-currency liquidity efficiency More efficient repatriation of unused cash Reduced FX hedging costs Enhanced visibility across the organisation
Generate yield on excess cash	Money market funds/ investments Other alternative short-term investments	Opportunity to generate yield on excess cash without increasing the risk Greater diversification Quick and easy access to liquidity Ensures security of principal Source: ERA Applicit

Source: EBA Analysis

⁸ In an in-house banking model, funds are pooled into a single account/legal entity from which the treasury can issue transfers and loans as a contractual relationship. Not only can such a setup allow for more effective streamlining of cash, but it can also generate better investment returns and self-financing opportunities compared to having a decentralised model with subsidiary

use of short-term debt facilities to finance multicurrency working capital. Moreover, given the increased FX volatility (figure 7), a reassessment of FX hedging strategies is necessary to safeguard the EBITDA margin of the company. Companies may seek to adopt new strategies such as hedging larger percentages of individual in-and-out-flows or looking more carefully for netting opportunities over a longer duration to benefit from natural hedges. Additionally, there is a need for companies to balance out short and long positions in different currencies over time using FX swaps to reduce interest expenses. In the meantime, FX swaps can be leveraged to make the best use of multi-currency liquidity.

To achieve clearer and more effective FX hedging and liquidity policies, large, multinational corporates are increasingly moving towards a model where treasury acts as an in-house bank. This allows them a much more detailed and accurate understanding of future multicurrency cash flows, which are provided by the business through clear and transparent cash flow forecasting processes. Such a set-up can provide an improved understanding of companies' multi-currency liquidity dynamics and provide an increased efficiency and greater visibility across the organisation.

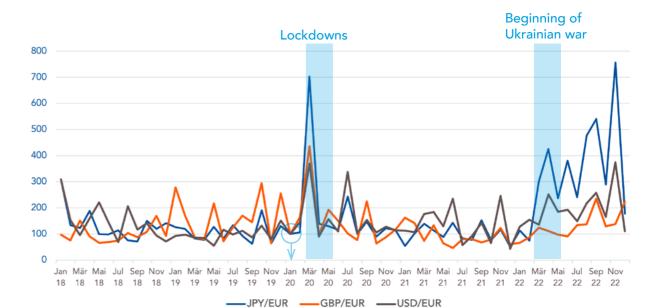
Last, with market yields increasing sharply, there is naturally greater demand among bank and corporate treasurers to deploy on-balance sheet cash into higher-yielding, alternative investments. This trend is the exact opposite of what happened over the past decade in which the opportunity cost of leaving cash uninvested was negligible and many treasurers parked surplus cash into bank deposits without much consideration. At the same time, the perceived higher impact from black swan events has led to an increase in the attractiveness of safe, highly

liquid alternative investments that can provide an absorption cushion while still achieving a reasonable return.

Security of the principal amount invested and liquidity remain key priorities for treasurers in reassessing their off-balance sheet investment strategies. Alternative investments such as highly rated money market mutual funds (MMF) are well suited for this purpose, as their primary investment objectives are to invest in highly liquid, short-term, and low-risk assets such as cash equivalent instruments (e.g., repo) and highly rated short-term debt securities.9 Moreover, they provide benefits such as offering greater diversity of exposure, market-driven yield, and more active management of the underlying investments. Treasurers are also evaluating the appropriate term of their investments vis-à-vis their working capital needs, with a greater bias toward shorter maturity investments in anticipation of future rate hikes. Not only is short-term cash likely to be deployed more readily into off-balance sheet investments but also other longer-term cash that may have otherwise gone into longer-term, riskier investments in the pre-pandemic era. This can be seen as a manifestation of treasurers placing increased value on quick and easy access to liquidity to be more prepared to respond to future black swan events.

Figure 7 Monthly exchange rate volatility of major currency pairs (Jan 2020 = 100)

Note: Exchange rate volatility computed using monthly standard deviations. Source: EBA analysis (using FRED exchange rate data)





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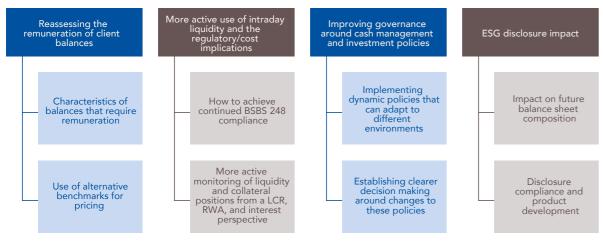
⁹ https://www.immfa.org/

5 Considerations for the ecosystem over the medium term

Looking ahead, both banks and corporates must adopt strategies that will work not just for the present, but also for the future. After years of low and negative interest rates, banks are finally now able to remunerate client balances. However, this will require a strategic reassessment of the characteristics of balances that should receive remuneration and how such balances can be transformed into longer maturity accounts (e.g., term accounts or term deposits). Which interest rate benchmark to use for pricing, e.g., internally derived or external benchmarks (including risk-free rates benchmarks), is another aspect to be considered in this reassessment. Similarly,

during the period of low-interest rates, many institutions took on a more passive approach to the management of intraday liquidity given the excess liquidity held by banks. In the current environment and over the medium term, however, a more active approach to intraday liquidity is likely to become more relevant for institutions to consider. This is important not only for continued Basel Committee on Banking Supervision (BCBS) 248 compliance but also given the increased cost of liquidity from an liquidity coverage ratio (LCR), risk-weighted assets (RWA) and interest perspective.

Figure 8 Medium-term strategic considerations for banks



Source: EBA Analysis

Another key consideration for treasurers to think about over the medium term is improving the governance of their cash management and investment policies to also allow for more dynamic policies that can adjust to different market environments. For example, they could include provisions for achieving a greater diversification of counterparty risk or during periods of higher market volatility. However, making such changes requires creating much better governance around cash management and investment than has been the case historically (i.e., simply re-evaluating them on an annual basis) to enable greater clarity regarding what the policies cover, how they are monitored, what variables are used, and what the decisionmaking process is for changing them.

Increasingly, off-balance sheet investments also have Environment, Social, and Governance (ESG) benefits and impact, by promoting socially responsible and/or sustainable investments.12 The topic of ESG has become highly relevant for both European corporates, investors, and banks. Most investment funds in Europe are now integrating requirements of the EU's Sustainable Financial Disclosure Regulation (SFDR), a new regulation that aims to foster the integration of ESG factors into the investment and advisory processes and to make investment products more transparent.¹³ Large companies in the EU that fall within the scope of the Regulation will be obligated to disclose detailed information regarding the sustainability impact of their activities beginning in 2024, and all companies will be required to do so as of 2028.14 Banks need this data to understand the ESG impact of their loan book; it is only a matter of time before

banks will begin to consider the sustainability of their funding sources on the liability side of their balance sheet as well.

Last, as interest rates continue to increase and banks' existing liquidity offerings become more profitable, there may be reduced demand to invest in enhancing their liquidity value propositions further. However, higher net interest income does not negate the need for banks to continue to think more strategically about how to manage their balance sheets, which tools such as cash concentration structures and virtual accounts can facilitate. Additionally, increased adoption of real-time payments by corporate treasurers will in turn increase demand for realtime liquidity solutions and data, which banks must continue to invest in to best serve the needs of their clients. The quest for valuable liquidity from clients is increasingly relevant in this highinterest rate environment, as it is the funding mechanism for banks. For corporate treasurers, the push to move toward single account and multi-currency solutions is also likely to increase over the medium term to achieve the required real-time visibility and transparency into cash flows occurring through internal and external (bank-provided) systems. In the meantime, the use of more sophisticated cash forecasting tools based on artificial intelligence and machine learning is likely to provide more accurate insight into likely end-of-day cash balances.

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https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2018/june/Intraday%20Liquidity%20Final%20Report. pdf

To help banks better manage their intraday liquidity, the Basel Committee on Banking Supervision (BCBS) developed the 'Intraday Liquidity Monitoring Tools', also known as BCBS 248, in 2013 (https://bis.org/publ/bcbs248.pdf). See the previous paper of the LMWG for more information on this topic (Impact.org/publ/bcbs248.pdf). See the previous paper of the LMWG for more information on this topic (Impact.org/publ/bcbs248.pdf). See the previous paper of the LMWG for more information on this topic (Impact.org/publ/bcbs248.pdf). See the previous paper of the LMWG for more information on this topic (Impact.org/publ/bcbs248.pdf). See the previous paper of the LMWG for more information on this topic (Impact.org/publ/bcbs248.pdf). See the previous paper of the LMWG for more information on this topic (Impact.org/publ/bcbs248.pdf).

¹² https://www.pwc.de/en/finanzdienstleistungen/sustainable-funds-in-the-ascendant.html

¹³ https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R2088&from=EN

¹⁴ https://www.europarl.europa.eu/news/en/press-room/20221107IPR49611/ sustainable-economy-parliament-adopts-new-reporting-rules-for-multinationals

6 Conclusion

The current interest rate and macro-economic environment represent a significant paradigm shift for the liquidity management ecosystem. As detailed in this paper, it requires developing an effective treasury strategy that is not only suited for a low-interest rate environment or a rising rate environment but any rate environment. It requires a repositioning of available solutions such as real-time payments and cash pooling solutions to achieve greater cash visibility, automation, and control and the adoption of innovative tools and technologies to maximise working capital efficiency to effectively recycle cash.

In the future, holding liquidity for payments and granting credit lines is likely to come at a higher cost, and banks will need to look more carefully at how to manage this. A reassessment of bank failures in the US may lead to stricter

liquidity requirements by US and European regulators. At the same time, new opportunities will also emerge. These will vary for banks and will depend on their geographic footprint, balance sheet composition, target customer segments, risk appetite and modeling, as well as their own operating model. In the prevailing rising rate environment, higher liquidity costs for banks could be transferred to their corporate customers, thereby resulting in a higher cost of capital. Above all, it is important for banks to not get too used to the status quo and remain agile in their response to their environments and how they may evolve. Going forward, becoming agile will be paramount for banks, as they should avoid becoming accustomed to the existing state of affairs and instead be prepared to respond promptly to the ever-changing conditions.