

# Managing liquidity risk

## *Collaborative solutions to improve position management and analytics*



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#### Executive Summary

A number of critical data management issues continue to impede the successful development of effective liquidity risk management strategies – and these issues can only be resolved through collaborative solutions. Resolving them is essential to enable you to comply with emerging regulatory requirements and to maximise the potential of your business in today's challenging environment.

These are among the key findings of SWIFT's latest in-depth market survey among cash, liquidity and liquidity risk managers at financial institutions around the world. This paper sets out those findings, and explores how the industry can best address shortcomings in the area of liquidity risk management. We invite your feedback on the research, this paper and the collaborative solutions being proposed to fill the liquidity risk gap.

#### Why is liquidity risk management so important?

During the recent financial crisis, although many banks had posted adequate levels of capital, they still experienced difficulties because they failed to manage their liquidity properly. Post-crisis, the higher cost of liquidity, larger funding spreads, higher volatility and reduced market confidence are driving financial institutions to allocate more resources to improving their liquidity risk management capabilities.

There is also a powerful regulatory imperative: liquidity risk is now included in the scope of Pillar II ICAAP (Internal Capital Adequacy Assessment Process), and it requires quantitative measures and reporting, complemented by improved monitoring and controls.

#### What does effective liquidity risk management look like?

Effective liquidity risk management requires both a top-down and a bottom-up approach. Strategy, principles and objectives are set at board and management levels. The data necessary to feed the risk dashboard and analytics has to be obtained at the operational level. In particular, intraday liquidity management is an integral part of an improved liquidity risk management.

These requirements were identified and explored in our white paper of March 2010 and in our subsequent market survey in June 2010<sup>1</sup>. However, in the follow-up, in-depth market survey we carried out during April 2011 among 40 cash, liquidity and liquidity risk managers from financial institutions globally, we established that these requirements have still not been fully met.

#### What are the challenges?

Our survey identified six key data management issues. The percentage shown indicates the proportion of respondents identifying each as of high or medium importance.

There is a lack of:

- A view on intraday cash position across currencies (93%)
- Ready-made liquidity risk analytics and business intelligence (91%)
- Advanced interactive cash and collateral management functionalities within payments infrastructures (89%)
- An ability to build predictive positions (88%)
- An intraday view of unencumbered collateral positions including margin calls (88%)
- An ability to manage and report liquidity positions at a firm-wide level (82%)

#### What are the solutions?

Our survey identifies five top-priority collaborative developments that will address these challenges. They are:

- Industry best practice for intraday cash reporting
- Common reporting standards and liquidity monitoring and control standards for use across high-value payments systems
- A standard margin call solution to support the implementation of intraday feeds in liquidity management applications
- Industry best practice for collateral reporting for liquidity management purposes
- A central “payment tracker/adviser” platform providing transactional statuses

#### What should be your next steps?

New regulation and the imperative to reduce costs are driving you to improve operational liquidity management. The transaction division of your bank have a key role to play in building the required ‘liquidity dashboard’ solutions. To feed these, you need integration between your internal applications and systems. You also need adequate external reporting and analytics capabilities – which today many banks lack. These can be created only through industry collaboration on standards and best practices.

There are already some collaborative initiatives under way, like the Liquidity Implementation Task Force in which 19 banks are participating. Get involved, either through participation in the current groups or by initiating new efforts in your own marketplaces. We are here to support our industry in improving liquidity risk management.

We also invite you to examine the findings of this paper and to contact us with any feedback, opinions and ideas for new initiatives you may have. We look forward to hearing from you soon.

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*SWIFT*

### Drivers to improve operational liquidity management

The failure of a number of leading banks in 2008 highlighted serious inadequacies in funding and liquidity risk management. The result is regulation that will cost firms hundreds of millions of Euros in additional funding costs during the next five to 10 years – and require them to transform their approaches to liquidity risk management.

The events that unfolded during the worst days of the crisis showed the importance of effective short-term operational liquidity management. They also demonstrated the value of investing in such a capability – since those firms that had invested in systems and processes around the day-to-day management of liquidity benefited greatly from their earlier spend.

Institutions have increased their liquidity reserves in order to protect themselves against the impact of liquidity crises. Understanding the minimum level of reserve required to protect a business against liquidity events requires the running of regular liquidity stress tests. To be effective, these require increasingly granular assumptions to be made about cash flows likely to occur across different products under stress. They also require the creation of the systems and data linkages needed to enable scenarios to be run on a daily basis when necessary.

Basel III puts in place quantitative standards around the size of these reserves. It also imposes rules on the liquidity value attributed to different classes of assets and liabilities. In addition, the new framework includes qualitative standards that will push firms to improve the governance and control frameworks around the management of liquidity. Banks will also need to improve the management and control of liquidity across various dimensions including the management of cross-currency risk, intra-group liquidity flows between legal entities and also the processes and controls around the intraday management of liquidity.

.....  
“The standards should be a key component of the supervisory approach to liquidity risk but must be supplemented by detailed supervisory assessments of other aspects of the bank’s liquidity risk management framework in line with the Sound principles.”

— Basel III - International Framework for liquidity risk measurement, standards and monitoring - December 2010.  
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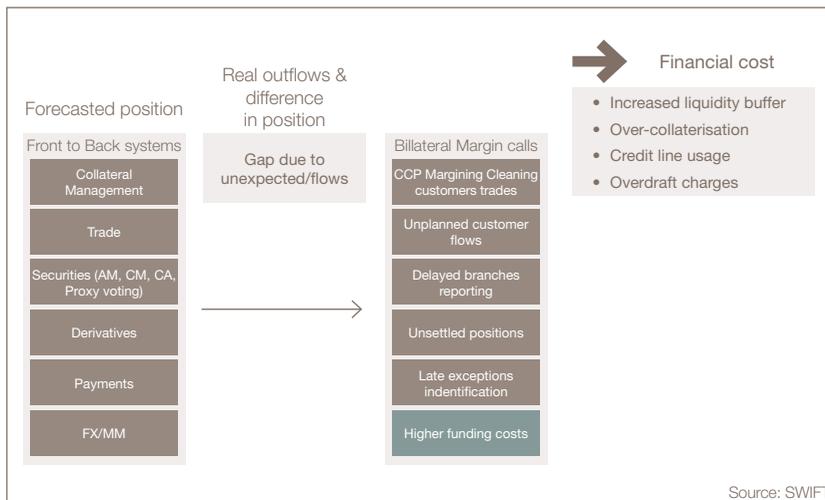
.....  
“A bank should actively manage its intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis under both normal and stressed conditions.”

— Principles for Sound Liquidity Risk Management and Supervision - September 2008  
.....

In the intraday context, the distinctions between liquidity management, funding management and cash management become blurred. Each day, a bank must:

- Forecast how much cash to lend or borrow to flatten its books (cash management);
- Know which businesses require this cash, how they will get the funds and at what cost (funding management); and
- Ensure that payments and receipts flows are smoothed through the day within limits (liquidity management).

Traditionally, intraday liquidity management has been a dark art within banks, heavily reliant on experience and individual expertise. Members of staff draw upon central bank GUIs and payment systems and talk to traders – in short they do anything that will give them a view on material cash flows that will impact the intraday position. As in so many other parts of banks’ operations, the crisis demonstrated that this is no longer an option: operational liquidity management has had to improve.



Gaining real-time visibility over liquidity has been the focus of perhaps the heaviest investment. Beyond internal challenges, the lack of frequency, timeliness and structure of the advices and confirmations received from customers, counterparties and clearing and settlement systems prevent many firms from further streamlining their liquidity operations.

There is also a lack of integration, because some underlying processes rely on unstructured and inadequate data, or there is a lack of data interoperability along the transaction lifecycle.

These challenges span both cash and collateral management, and result in the rather late identification of gaps between forecasted and real inflows, outflows and positions.

Financial costs can be substantial as a result of over-collateralisation, intraday credit line costs, higher funding costs, overdraft charges and higher liquidity buffers.

Improved management and monitoring of intraday positions across accounts and currencies should reduce the need for intraday credit lines. Derived detailed analytics should support a review of market-wide stress test scenarios and reduce liquidity buffers required to cover intraday liquidity shortfalls.

So the business case to invest in real-time management of liquidity goes beyond even regulatory compliance and risk mitigation – it can save a bank real money.

Rather than waiting until towards the end of the trading day to flatten the bank's position – and be at the mercy of wider spreads and tightening market liquidity –

dealers can trade with confidence much earlier in the day.

### Building a liquidity dashboard requires access to data

Beyond the process and organisational improvements required, implementing a liquidity risk strategy also poses a data management challenge at multiple levels of aggregation: at the transactional, product, business line, legal entity and firm-wide levels.

More and more financial institutions understand that intraday liquidity is an integral part of an improved liquidity risk management capability. Foundational data will be generated at the operational level for further use in an aggregated format to support tactical liquidity risk metrics.

The intraday dimension is also where payments and settlements materialise,

thus representing unique challenges for banks, in normal times as well as in crisis situations. Management of flows and events at this level might have an immediate effect on the first maturity bucket of the maturity mismatch analysis and potentially on the stress test scenarios.

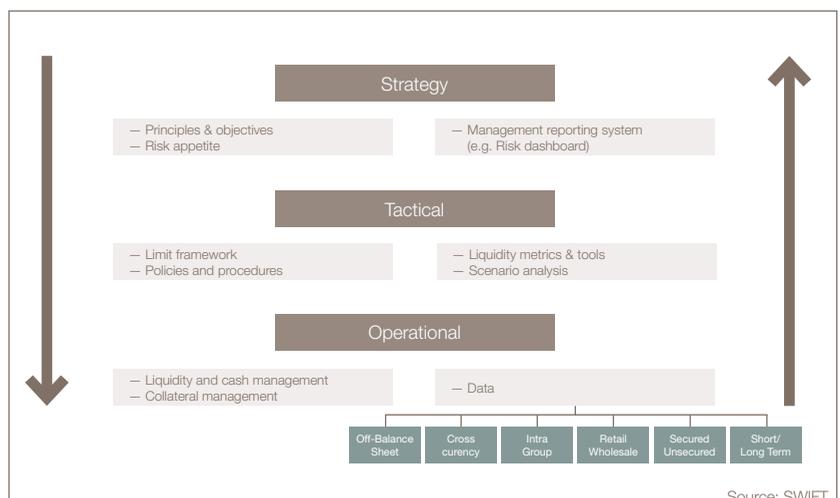
Overcoming the data challenge is a prerequisite for the successful implementation of a sound liquidity risk framework. Risk monitoring and decisions should be based on accurate, comprehensive and timely information.

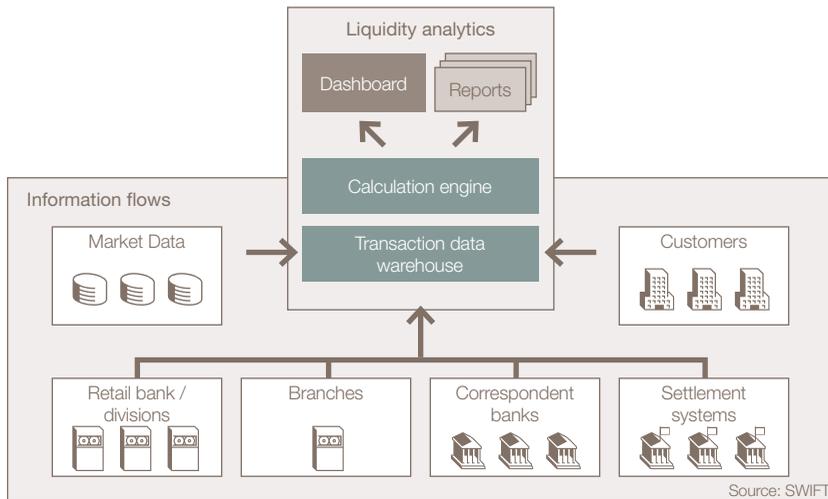
While the “executive risk dashboard” will be defined with senior management in support of the liquidity risk strategy, it will need to be fed with data obtained at the operational level.

The ‘liquidity risk dash board’ should provide a unique and aggregated view of liquidity risk that perfectly matches compliance and management needs at the strategic level.

Implementation has to start at the level of business lines and liquidity operations – from where the fundamental data needs to be collected. This will not be achieved through a large number of reports produced by numerous departments in silos, but rather through a central definition of data requirements starting with common data definition and modelling.

The transaction banking department has a key role to play in building such a central liquidity dashboard to better monitor positions and fulfil the need for historical data modelling.





This will enable banks to develop advanced analytics, support predictive liquidity management and connect business and risk intelligence. It should also help them feed their customers with reports on intraday liquidity usage needed for their own compliance. Furthermore, this could improve their ability to correctly price product and services according to their respective liquidity profiles.

Collecting data across a transaction's lifecycle requires information feeds from numerous front to back office systems, as well as data received from multiple counterparties, branches and settlement systems through various channels.

Monitoring current and predictive positions in order to comply with new regulatory frameworks will involve the development of a real-time information exchange capability between liquidity management systems, payments applications and reference data platforms.

It must also enable instant rerouting of the flows (for example, payments flow control) and real-time change and communication of the standing settlement instructions (SSIs), particularly important for managing counterparty risk situations.

### Lack of adequate reporting and analytics

Our June 2010 survey showed that 66% of respondents had started a liquidity risk project, making investments at the foundational level of liquidity operations.

Our April 2011 survey demonstrated, however, that many of those projects have not yet been finished, and that financial institutions still face a number of issues.

### Intraday cash positions

Respondents still face difficulties in assessing their intraday settled and predictive positions in a reliable and timely manner. They also have problems in assessing their customers' positions.

93% of respondents declare they have "a lack of view on the intraday cash position across currencies to meet payments and settlement obligations".

Internal cash projections based on payment flows are not sufficiently accurate and the share of transactions reported on the same day by Nostro agents is quite low. Certain types of transactions – like book transfers, cheques and deposits – are simply not reported.

Timeliness of reporting is the biggest challenge on the agenda (rated as of medium or high importance by 92% of respondents). Debit and credit confirmations are sometimes sent hours after transactions have been booked on the account, which can create settlement

issues. For service providers looking into pricing intraday liquidity usage, time-stamping for the booking on the account is key information to be reported.

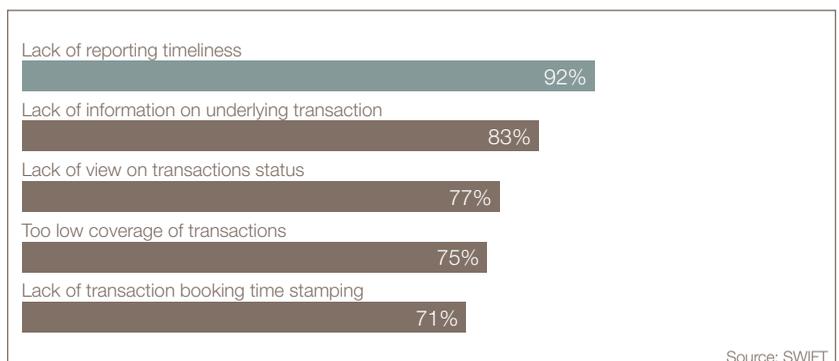
When building a liquidity dashboard, the focus is on transactional data rather than on balance information. With an opening balance and confirmations of in and outflows received during the day, firms should be able to calculate their balances and would just need to reconcile their derived balances with their closing balances.

The condition is, however, that reporting covers the largest portion of the liquidity. Broker/dealers, with the largest portion of high value payments, want 100% transactions reported. Information provided in the reporting should allow for automated reconciliation with internal projections.

In another finding, 83% of respondents declare they lack information on underlying transaction and parties.

### Predictive positions

On the predictive side, firms are building integration between their front, middle and back office systems to improve monitoring of all commitments made across business lines. However, in many cases treasurers don't have a view on the customer's transactions that have not been originated by their front offices and which could have an important impact on their liquidity. There is little or no business practice around the usage of advice and alert messages such as customer payment advices to help evaluate the short-term funding needs of firms.



▲ % of respondents - intra-day cash reporting issues to be addressed with a high priority

Lack of customer's advices on important liquidity transactional/liquidity flows affects ability to build predictive position

88%

Lack of large customer's payment advice can impact bank's position for a specific clearing channel

87%

Source: SWIFT

▲ % respondents - the lack of advice messages to support predictive liquidity is a high priority issue

88% of respondents declare that they "lack customer's advice messages for important liquidity flows and that this is affecting their ability to build their firm's predictive position."

### Advanced liquidity management and reporting from market infrastructures

The growth in volume and value of transactions settled through market infrastructures such as high value payments systems is having an increasing impact on member banks' liquidity. This has prompted some infrastructures to develop liquidity savings mechanisms without impacting the related liquidity risk. For example, the enhancement of gridlock functionality is instrumental in optimising liquidity usage in respect of payment priority.

Besides Target 2, only a small number of infrastructures have deployed these functionalities, and complemented their proprietary web-based solutions with integrated real-time capabilities such as payments queues and accounts management, collateral substitution, payments suspension or cancellation functionality, to aid in improved monitoring and management of liquidity flows and positions.

89% of respondents recognise the issue of a "lack of advanced interactive cash and collateral management functionality from payments infrastructures."

As the industry prepares for sweeping regulatory and market infrastructure changes, the banks must ask themselves how this will impact their operational liquidity management.

The extension of CCP clearing into ever more products will create substantial intraday liquidity demands for banks – a challenge that will make effective intraday visibility even more key. The increased pressure to move more towards central clearing, especially for derivatives, also

risks making the operational process overly complex, due to a multiplicity of CCPs and proliferation of the communication standards.

There is little or no business practice around the usage of trade notification messages that would enable clearing members to better predict their funding needs for the clearing of their customer's trading activity over the course of the day.

### Intraday collateral position management

Actively managing collateral positions should be an integral part of every firm's liquidity risk programme. A financial institution must be able to meet both expected and unexpected current and future collateral needs arising from different activities. Collateral is required to cover the margining requirements of a financial institution arising from its activities in various markets.

88% of respondents however declare they lack "an intra-day view of the unencumbered collateral positions that could be mobilised in a timely manner."

New regulatory frameworks introduce the requirement for more metrics and reporting on the quantity and on key characteristics of banks' available unencumbered assets that could be used as collateral to raise additional secured funding should it become necessary.

On an intraday basis this implies that the firm should calculate all of its collateral positions and more specifically the amount of unencumbered assets available and have the ability to mobilise it in a timely manner. Institutions should also assess the eligibility of each major asset class they hold for central bank collateralisation and the acceptability of their assets to major counterparties and providers of funds in secured funding markets.

Many firms experience difficulties in monitoring the impact of the terms of funding or trading arrangements on their ability to mobilise collateral on an intraday basis.

Depending on the business line and market practices, collateralisation and margining could represent a large volume of agreements which could in turn tie up significant amounts of cash. Firms are still experiencing operational issues in the management of margining activity which is largely manual – and done through email, fax and phone.

Institutions that have invested in automation suffer as a result of a lack of market practice and message standards. Furthermore, there is currently no central infrastructure to facilitate communication with counterparties/clients and to manage interoperability on a secure and reliable basis. This is preventing many firms from monitoring and reporting on an intraday basis the impact of their margining activity on their present and predictive collateral positions.

A significant 86% of respondents recognise that the "lack of an automated margin calls process for OTC trading activity has an effect on the intraday view of the unencumbered collateral portfolio."

### A firm-wide view of liquidity positions

New regulations require financial institutions to manage their liquidity positions and report at a firm-wide level, including their branches and subsidiaries. Many banks are therefore centralising their treasury management and improving their global liquidity risk management.

They are looking to answer critical questions such as:

- How can I optimise liquidity across entities and reduce the need for local buffers?
- What should the liquidity transfer pricing be for my entities, given their status as providers or users of liquidity?

However, as the rules of Basel III will be implemented globally, local regulators might require significant amounts of liquidity to be held in their jurisdictions. This would obviously disrupt the implementation of these liquidity optimisation systems, as it would lead to trapped pools of liquidity in the countries where the firm operates.

Lack of view on branches/subsidiaries positions to optimise liquidity across entities/reduce the need for local buffers

82%

Lack of ability to manage/report liquidity position at a firm-wide level on a daily basis

82%

Local restrictive data privacy regulations prevent centralisation of liquidity data management

77%

Source: SWIFT

Ⓐ % of respondents - issues related to a firm-wide view of liquidity positions to be addressed with a high priority

It would also increase the data management challenge as it would require the collection of more granular data to set up close measurement and monitoring of flows and positions for each of the entities of the group.

Collecting accurate and timely information on branches can be challenging. Creating a centralised and integrated system can be a long and costly project for banks holding accounts in numerous currencies. It may also raise issues for countries with restrictive regulation on data privacy.

It is therefore not surprising that a large portion of the survey's respondents recognise the difficulty in getting this global view.

82% of respondents recognise "a lack of ability to manage and report the liquidity position at a firm-wide level on a daily basis."

### Analytics and business intelligence

Analytics and business intelligence on a daily and historical basis are the cornerstone of liquidity or business decisions, risk monitoring and regulatory reporting. Very few institutions have already developed a "one click" capability to run these analyses at both group and individual entity levels across or by type of currency.

91% of respondents indicated they have a "lack of ready-made liquidity risk analytics and business intelligence" and they would need at least one of the proposed "ready-made" liquidity (risk) reports as an alternative to or to complement integration processes.

The scope of requirements is very broad, ranging from a concentration analysis of liquidity exposures to a view on the average daily peak of liquidity usage – or an historical view on liquidity flows to help monitor deviations and define alerts based on defined thresholds. Liquidity services on their side will underpin their business plans with benchmarking and market share evolution analyses.

### Industry collaboration

Comparison between the 2010 and 2011 survey findings demonstrate there has been no fundamental progress in resolving data management issues.

Many of these issues relate to a lack of common standards and industry practice and cannot be solved by

In/out flows trend analysis

91%

Top counterparties concentration analysis

88%

Top counterparties reciprocity/exposure analysis

82%

Liquidity flows evolution benchmark analysis

70%

Average counterparties liquidity flows timing analysis

50%

Source: SWIFT

Ⓐ % of respondents - Liquidity (risk) insights with the highest priority

Industry practice for intra-day reporting

96%

Common reporting standards across High Value Payments systems

96%

Common liquidity monitoring/control standards across High Value Payments systems

96%

Industry practice for collateral reporting for liquidity management purpose

95%

Standard margin call solution to support an intra-day data feed in the liquidity management application

95%

A central "payment tracker/adviser" platform providing transactional status

95%

Industry practice for the usage of advice messages in support of the predictive liquidity management

90%

Standard ready-made liquidity/liquidity risk insights/reports

90%

Copy solution from branches cash and collateral flows to central cash/treasury application

89%

Source: SWIFT

Ⓐ % of respondents who recognise the need for an industry solution

banks in isolation. This explains why many respondents believe collaborative solutions are needed.

Most respondents see intraday cash reporting and common liquidity standards across high value payments systems as the industry solutions on which to focus to achieve the most significant improvements.

Banks will keep on working on their internal projects. In parallel, several industry initiatives have been created to address liquidity-related data management issues on a collaborative basis.

- A “Liquidity Implementation Task Force” joined by 19 banks worldwide is aiming to provide a forum in which common requirements arising from regulatory changes can be identified and agreed, and appropriate responses identified – leveraging existing SWIFT services. It is also looking at identifying opportunities to enhance, amend or supplement existing SWIFT products and services to help members meet their liquidity risk management requirements. Finally the group is also dedicated to encouraging a consistent and standardised global implementation of liquidity management services, for example the provision of historical transaction and liquidity usage data by RTGS systems, thereby reducing implementation costs and complexity for international banking groups. The first deliverable agreed by the group is the development of best practices for the usage of the intraday cash reporting messages.
- A similar initiative has been started by 9 brokers in the UK, with the objective of developing an industry practice around real-time cash reporting in collaboration with SWIFT.

The work done with the two groups indicates that key current issues and requirements are common to both bankers and brokers, even if technical issues may differ from one firm to another. Development and adoption of a community standard and best business practice should therefore be possible.

## Conclusion – industry-wide problems require collaborative solutions

New liquidity regulations and policies will substantially impact banks across their business lines and geographies. A lack of fundamental underlying information is a key issue in the overall liquidity chain that is preventing payments, treasury and liquidity risk managers from reaching their goals.

An industry-wide collaborative approach to developing better business practices around intraday cash positions in particular can complement the work at an individual bank level and ensure more consistency in implementation – reducing costs and improving efficiencies.

Banks are looking to SWIFT to facilitate this industry dialogue and build upon existing liquidity standards and informational risk services, in order to feed their transactional databases and liquidity dashboards. SWIFT is ready to provide further support.

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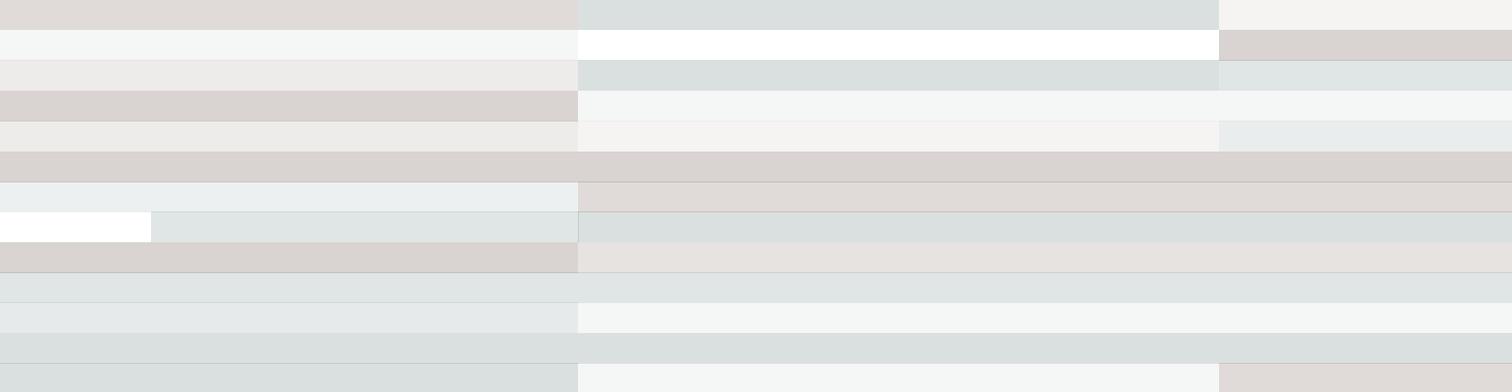
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