



Directive 20—Liquidity Risk in a Controlled Payment System and a Designated Controlled Payment System

1. Introduction

In accordance with Section 8 of the Payment Systems Law, 5768-2008 (hereinafter: “the Payment Systems Law”), an operator of a controlled payment system shall formulate rules that will ensure the stability, efficiency, and sound functioning of the system.

In accordance with Principle 7 of the Principles for Financial Market Infrastructures (PFMI), published in 2012 by the Committee on Payment and Settlement Systems of the BIS (CPSS) and the International Organization of Securities Commissions (IOSCO), a financial-service infrastructure (FMI) should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquidity resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios.

This Directive regulates the requirement of controlled payment systems and designated controlled payment systems to maintain a valid liquidity-risk management framework.

2. Definitions

“Payment system”, “controlled system”
 , “designated controlled system”,
 “payment-system operator” -

As defined in the Payment Systems Law;

“Payment-system operator” or
 “system operator” -

Operator of a controlled payment system or a designated controlled payment system;



“Payment Systems Oversight” or “Oversight”-	The oversight unit for payment systems at the Payment and Settlement Systems Division of the Bank of Israel;
“Participant in a payment system”-	One who is defined as a participant under the system rules;
“System rules”-	the rules by which the payment system operates;
“Liquidity risk”-	the risk that a counterparty, be it a participant or another entity, will not have sufficient funds on hand to cover its financial obligations in the expected form and time, although it may be able to do so in the future;
“Haircut”-	a risk-control measure applied to underlying assets, in which the value of said assets is calculated as the market value of the assets net of a certain percent (the “haircut”). Collateral takers use haircuts to protect themselves against losses from a decline in market value of a security in the event that they need to liquidate said collateral;
“DNS” ¹ -	a net settlement system that settles on a net basis at the end of each predetermined settlement cycle;

¹ Deferred net settlement.



"Stress test"-	an assessment of credit and liquidity exposures occasioned by extreme price changes;
"Reverse stress tests"-	tests that identify the extent to which a payment system's liquidity resources are covered in the event of grave extreme conditions;
"Unwind"-	a process used to recalculate obligations in a net settlement system when transfers among participants' accounts are temporary until all participants meet their settlement obligations. If a certain participant fails to settle, some or all of the temporary transfers associated with the participant are deleted from the system and the other participants' settlement obligations are recalculated.

3. Incidence

- 3.1 This Directive shall apply to the operator of every payment system that the Governor has declared a controlled payment system or a designated controlled payment system.
- 3.2 The Bank of Israel may, as circumstances shall indicate, absolve or exempt a payment-system operator from the incidence of certain sections of this Directive and may rescind said exemption.



4. Sources of liquidity risk

- 4.1 The system operator shall clearly identify sources of liquidity risk and estimate current and potential future liquidity needs on a daily basis.
- 4.2 When identifying the sources of liquidity risk, the system operator shall bear in mind the following cases, *inter alia*:
 - 4.2.1 liquidity risk occasioned by participant default;
 - 4.2.2 liquidity risk originating in existing relations with settlement banks, nostro agents, custodian banks, liquidity providers, linked financial-service infrastructures, and service providers.
 - 4.2.3 additional risk from entities that play multiple roles in the financial-service infrastructure (e.g., a participant that also serves as a settlement bank or a liquidity provider).

5. Measuring and monitoring liquidity risk

- 5.1 The system operator shall possess effective operational and analytical tools with which, regularly and when necessary, she or he may identify, measure, and monitor flows used for funding, including intraday use of liquidity.
- 5.2 The system operator shall understand and estimate the value and concentration of funding flows that take place via settlement banks, nostro agents, and other intermediators.
- 5.3 The system operator shall monitor, on a daily basis, the level of liquid assets (e.g., cash, securities, other assets held in custody, and investments) held by the system.
- 5.4 The system operator shall know how to determine the value of liquid assets that are available in consideration of the haircuts applying to said assets.
- 5.5 In a DNS system, the system operator shall provide participants with information and analytical tools in order to help them manage and monitor their liquidity risks in the system.



- 5.6 A system operator that maintains prearranged funding arrangements shall identify, measure, and monitor the liquidity risk that originates in the providers of liquidity for said arrangements.
- 5.7 The system operator shall attain a high level of confidence by performing painstaking adequacy checks of every liquidity supplier, be it a participant in the system or not, for its ability to discharge its duties as required in the liquidity arrangements and its being subject to adequate regulation or oversight concerning the requirements that apply to it in managing liquidity risk.²

6. Managing liquidity risk

- 6.1 The system operator shall regularly review the structure of the system and its operations for the purpose of managing the system's liquidity risk.
- 6.2 A system operator who uses a DNS (deferred net settlement) system shall consider mitigating the liquidity risk of the system or of its participants by using alternative settlement mechanisms such as continuous, batch, or high-frequency settlement.
- 6.3 The system operator may reduce participants' liquidity demands by giving them adequate information or control systems that will help them to manage their liquidity needs and risks.
- 6.4 The system operator shall perform operational groundwork for management of liquidity risk caused by participants' or other entities' financial or operational problems.
- 6.5 The system operator shall consider using additional tools to manage the liquidity risk of the system or of its participants, for example:
 - 6.5.1 To manage liquidity risk that originates in participant default, the system manager may consider imposing limits on exposure and/or demanding collateral and/or pre-funded default arrangements.

² Where relevant for assessing the reliability of a liquidity provider's performance in relation to a given currency, the liquidity provider's potential access to credit from the relevant central bank that issues the currency may be taken into account.



- 6.5.2 To manage liquidity risk originating in presentation of payment instructions late in the day, the system manager may consider making rules or providing financial incentives for timely presentation of payment instructions.
- 6.5.3 To manage a liquidity risk that originates in a linked service or financial-service-infrastructure provider, the system manager may consider adopting selection criteria and/or limits on exposure or concentration and/or collateral requirements.³

7. Adequacy of liquidity resources in the payment system

- 7.1 The system operator shall make sure that the system has adequate liquidity resources, as determined via regular strict stress tests, to complete the settlement of payment obligations at a high level of certainty under a broad wide range of possible extreme scenarios.
- 7.2 The system operator shall hold adequate liquidity resources in all relevant currencies to complete the settlement of payment obligations of that day and, in relevant cases, intraday or multiple-day, at a high level of certainty under a wide range of potential extreme scenarios.⁴

8. Liquidity resources for compliance with minimum requirement

- 8.1 The system operator shall ensure that the qualifying liquidity resources of the payment system, in every relevant currency, do not deviate from the following list: cash with the central bank and with creditworthy commercial banks, binding credit lines, binding forex swap transactions and binding repo transactions, highly tradable collateral held in

³ For example, the system should aspire to manage and diversify its liquidity resources so as not to rely on a single liquidity provider.

⁴ These scenarios include, inter alia, a participant default that may create the largest cumulative payment obligation under extreme but plausible market conditions.



custody, and investments available and convertible into cash that are bundled with reliable and prearranged funding arrangements, including under extreme but plausible market conditions.

- 8.2 Insofar as the payment system has access to central-bank credit, the system operator may rely on said access as part of the minimum requirement insofar as the system has collateral that qualifies for deposit (or for the performance of other suitable transactions) with the central bank. Said access does not obviate the need for appropriate risk-management practices and adequate system access to liquidity resources from the private sector.
- 8.3 The system operator shall ensure the availability of said sources when needed.

9. Other liquidity resources

- 9.1 The system operator may supplement qualifying liquidity resources with other forms of liquidity resources provided said liquidity resources are expected to be sold with high probability or are accepted as collateral for lines of credit, swap transactions, or repo transactions after default.⁵
- 9.2 The system operator may consider using said resources within the system's risk-management framework before, or in addition to, using qualifying liquidity resources. The considerations may relate to situations in which:
 - 9.2.1 liquidity needs exceed the level of qualifying liquidity resources;
 - 9.2.2 qualifying liquidity resources may be held in reserve in order to cover a future default;
 - 9.2.3 use of other liquidity resources will cause less liquidity disturbance for system participants and the financial system at large.

⁵ Including cases in which the matter cannot be reliably regulated beforehand or secured under extreme market conditions.



- 9.3 When determining the types of collateral that the system shall accept, the system operator shall give thought to types of collateral that the central bank routinely accepts even if the system has no access to central-bank credit.
- 9.4 As part of the liquidity plan, the system operator shall not assume that the central bank will make credit available to the system in states of emergency.

10. Assessment of liquidity providers

- 10.1 Insofar as the system has prearranged funding arrangements, the system operator shall attain a high level of confidence, via strict adequacy checking, that each provider of qualified liquidity resources that must attain a minimum level, be said supplier a participant in the system or an outside player, is knowledgeable enough to understand and manage the related liquidity risks and is able to meet its obligations as required.
- 10.2 The system operator shall bear in mind the potential access of the liquidity supplier to central-bank credit, where relevant, in assessing the reliability of the liquidity supplier's performance.
- 10.3 The system operator shall perform appropriate groundwork for the renewal of prearranged funding arrangements with liquidity suppliers before existing arrangements expire.

11. Procedures for use of liquidity resources

- 11.1 The system operator shall maintain clear procedures for use of its liquidity resources for completion of settlement in the course of a liquidity shortfall. Said procedures shall:
- 11.1.1 clearly document the order in which each type of liquidity resource shall be used (e.g., use of certain assets before use of prearranged funding arrangements);



- 11.1.2 include instructions relating to access to cash deposits or overnight investments of cash deposits, same-day transactions in the market, or drawing on prearranged lines of liquidity.
- 11.2 The system operator shall regularly review the procedures relating to access to a liquidity provider's liquidity resources, including by activating and drawing on sums from binding lines of credit for checks and by checking the operational procedures for intraday repo transactions.

12. Central-bank services

- 12.1 The operator of a system that has access to accounts with the central bank, payment services, securities services, or collateral-management services, shall use said services where practical and where compliant with the legal framework, the policy, and the discretion of the central bank in order to improve system liquidity management.

13. Stress tests for liquidity and liquidity resources

- 13.1 The system operator shall determine the level of liquidity resources and shall regularly examine whether an adequate level of such sources is available to the system by applying strict stress tests.
- 13.2 The system operator shall formulate clear procedures for reporting the outcomes of said stress tests to the appropriate decision-makers and shall establish procedures for the use of these results to assess and adjust the risk-management framework.
- 13.3 When managing the stress tests, the system operator shall examine a wide range of relevant scenarios.
 - 13.3.1 The scenarios shall include historical and relevant peak levels of price volatility, changes in other market factors such as those that affect prices and yield curves, multiple defaults across different time horizons, concurrent pressures in funding



and asset markets; and a broad ambit of extreme prospective scenarios within a range of extreme but plausible market condition;

- 13.3.2 The scenarios shall also take account of the characteristics of system structure and operation; shall include all entities that may pose material liquidity risks to the system (e.g., settlement banks, nostro agents, custodian banks, liquidity providers, and linked financial-service infrastructures); and, where appropriate, shall cover a period longer than one day.
- 13.4 The system operator shall bear in mind strong linkage relations or exposures between participants and multiple roles that users may play in regard to managing the system's risks.
- 13.5 The system operator shall assess the probability of multiple defaults and their contagion effect on its participants.
- 13.6 The system operator shall, where appropriate, conduct reverse stress tests to identify extreme default scenarios and extreme market conditions in which its liquidity resources would be found deficient.
- 13.7 The system operator shall conduct liquidity stress tests on a daily basis, using standard parameters and assumptions determined ex ante.
- 13.8 The system operator shall carry out, on a quarterly basis at least, a comprehensive and thorough analysis of the stress test, the models, the parameters, and the basic assumptions used, and shall ascertain that they are suited to the attainment of liquidity needs and liquidity resources in view of current and evolving market conditions,.
- 13.9 The system operator shall carry out more frequent stress tests when the markets are typified by aberrant volatility, when they become less liquid, or when the size or concentration of its participants' positions increase markedly.
- 13.10 The system operator shall perform full validation of the risk-management model at least once per year.



14. Emergency planning in the event of uncovered liquidity shortfalls

14.1 Under certain extreme circumstances, the liquidity resources of the system or of its participants may be too small to meet payment obligations. In response to these cases, the system operator shall establish rules and procedures that will:

14.1.1 facilitate same-day and, where necessary, intraday and multiday settlement of payment obligations when due after individual or aggregate participant default takes place;

14.1.2 deal with unforeseen liquidity shortfalls that may be uncovered and strive to avoid unwinding, revoking, or delaying intraday settlement of payment obligations;

14.1.3 note the process that the system uses to replenish liquidity resources on which it may draw during an extreme event, so that it may continue to operate safely and efficiently.

14.2 In a case where the system operator allocates possibly uncovered liquidity shortfalls among system participants, she or she shall establish clear and transparent rules for said allocation, as follows:

14.2.1 bundling said procedures with a funding arrangement between the system's operator and its participants;

14.2.2 mutualizing the shortfalls among participants on the basis of a clear and transparent formula, or;

14.2.3 liquidity rationing (e.g., lowering recompense payments to participants).

14.2.4 The system operator shall divulge to participants every benchmark rule or procedure and shall discuss benchmark rules with them thoroughly.

14.2.5 The system operator shall ensure that the benchmark rules are consistent with regulatory requirements incumbent upon each participant as to liquidity-risk management.

14.2.6 The system operator shall review and validate, via simulations and other techniques and via discussion with each participant, the possible impact of said



allocation of the day's liquidity risk on every participant and each participant's ability to tolerate the proposed liquidity allocations.

15. Information reported and frequency of reportage

15.1 When this Directive goes into effect and by March 1 of each year, the system operator shall submit the following documents to Oversight:

- 15.1.1 sources of liquidity risk identified by the system operator;
- 15.1.2 current and potential future liquidity needs;
- 15.1.3 a list of operational and analytical tools that are invoked to identify, measure, monitor, and manage flows used for settlement and funding;
- 15.1.4 the system's funding arrangements;
- 15.1.5 stress tests performed to examine liquidity needs and level of liquidity sources;
- 15.1.6 reverse stress tests performed;
- 15.1.7 a list of types of qualifying liquidity sources (see list of types in Section 8.1);
- 15.1.8 a list of other types of liquidity sources and their compliance with the requirements in Section 9;
- 15.1.9 adequacy checks performed vis-à-vis liquidity providers;
- 15.1.10 procedures established for use of liquidity sources to complete settlement in the course of a liquidity shortfall;
- 15.1.11 procedures in effect for reporting stress-test outcomes to appropriate decision-makers;
- 15.1.12 procedures in effect for using stress-test outcomes to assess and adjust the risk-management framework;
- 15.1.13 quarterly review of stress tests, as stated in Section 13.8;
- 15.1.14 rules and procedures in effect for responding to an uncovered liquidity shortfall event;
- 15.1.15 rules and procedures in effect for allocating liquidity shortfalls among system participants, where relevant.



15.2 The payment-system operator shall present Oversight with the information specified in Section 15.1 above after any material revision, in a clean copy and in a “track changes” copy, one month before it goes into effect. Insofar as the system needs adjustments on account of said revisions, said reportage shall include the requisite adjustments and relevant schedules for their implementation.

16. Forwarding information to the Bank of Israel

16.1 A payment-system operator shall forward the information under this Directive by means of secured communication (the Kasefet application). Said application shall be used after prior coordination with Oversight. Oversight may allow the information to be forwarded in other ways.

16.2 The information under this Directive shall be forwarded by the system operator to the contact persons whom Oversight shall appoint for this purpose.

16.3 A payment-system operator who forwards information under this Directive shall ascertain by telephone that the contact persons specified in Subsection 16.2 received the information.

16.4 A payment-system operator who sits within a Bank of Israel structure and makes use of Bank of Israel systems shall forward the information under this Directive by means of the internal electronic-mail system of the Bank of Israel.

16.5 Information under this Directive shall be presented to Oversight in digital form.

16.6 Reportage shall be carried out in accordance with the deadlines established in this Directive. Insofar as a payment-system operator believes that a given report will not be presented by the specified deadline, he or she shall present Oversight, by electronic mail, with a written request to revise the deadline for the presentation of the report. Said request shall include, *inter alia*, the actions taken up to said request for revision, the reasons for requesting the revision of the reporting deadline, and the requested target date for the presentation of the report in question. A reporting deadline for which



revision is not approved by Oversight shall be presented by the deadline established for said report.

17. Promulgation and update of Directive

Date of promulgation	Essence of update
December 22, 2019	Promulgation of directive

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