The mechanism of intraday liquidity provision in Mexico

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EXTENDED ABSTRACT

The worldwide economic crisis has revealed that liquidity problems of (large) banks can occur suddenly, and with serious consequences for the financial stability. The most recent and widely referred to example is the collapse of Lehman Brothers. The interest in intraday liquidity management has gained momentum since then, and expressed both by academics and by financial authorities (such as central banks). Studying intraday liquidity flows, gives valuable insight to 1) the provision of liquidity and the level of efficient use, 2) potential liquidity risks in settling payment obligations and 3) the degree of interdependencies between financial market infrastructures (FMIs) in terms of liquidity, in particular between the large value payment and securities settlement systems. This insight can be used by central banks and authorities to improve the robustness of these FMIs, reduce risks between interdependent FMIs and improve the frameworks that implement the liquidity provision into FMIs.

In order to guaranty stability and the smooth settlement of transactions in the FMIs, central banks provide liquidity. These funds together with other financial institutions' assets flow through different FMIs and are redistributed among participants either as funds transfers, payment obligations or secured/unsecured lending/borrowing among them. Therefore the adequate level (on aggregated and on individual perspective) and price of the liquidity provided by the central bank are required conditions to archive efficiency. To that end central bank authorities must have good knowledge of two aspects of the financial system. The first is the emerging network among participants, which reveals the structure of the interdependency among financial institutions. Whereas the second is the behavior of the participants related to the intraday liquidity management, i.e. the decision on a daily bases with respect to the number/volume of payment obligations. We have identified three factors for the decision of how many payment orders should be sent for settlement per participants in a day. Those factors are: 1) the access the participant has to the central bank liquidity provision, 2) the level of lending the institution can obtain from other participants, if required and 3) the volume of payments received due to existing obligations either towards the participant or to its clients.

The cost of the first and the second factors vary across jurisdictions, and the third is free of charge. Usually, for specific currency the price of central bank money is equal for institutions that have access to it, whereas private lending among participants is heterogeneous and integrates the risk factor of the borrowing institution.

In this paper a methodological approach is proposed to study the participants' behavior observed in Large Value Payment Systems (LVPS) related to the management of external funds, i.e. funds transfer from other FMIs, or provided by a central bank (first factor, above), and the reuse of incoming payments (the second and third factors above). To that end an algorithm is developed to distinguish to what extend incoming payments are used to cover obligations based on the transactional data. The approach is applied to study the flow of intraday liquidity under the framework of liquidity provision in the Mexican FMIs. Three systems are involved in this process: (i) SPEI® - the Mexican Large Value Payment System (LVPS), (ii) SIAC - a system that provides liquidity to credit institutions, and (iii) DALÍ (the Security Settlement System). SPEI® and SIAC are administrated by the central bank, whereas DALÍ is administrated by the private institution S.D. INDEVAL.[i]

The aim of this study is to evaluate the impact of the intraday liquidity provision mechanism, and to understand how the liquidity is transmitted to participants in SPEI® that do not have direct access to central bank money, i.e. do not have a SIAC account. Currently, there are ninety-eight direct participants in SPEI® identified under four categories: (i) private multiple purpose banks (commercial banks or CB), (ii) public development banks (DB), [ii] (iii) brokerages (B), and (iv) other non bank financial institutions (NBFI). The instrumentation of liquidity provision into the FMIs is performed through two channels. The first channel involves overdrafts granted as direct deposits in the BdM. The second uses intraday repos on sovereign debt. Overdrafts are allowed to credit institutions (CB and DB) that have current accounts in SIAC. Intraday repos are executed in DALÍ by credit institution[iii] and by brokerages[iv]. There is a limit to the total value of repo operations a financial institution can perform, depending on its capital. There are fifty direct participants in SIAC, and forty-four of them are private banks, whereas six are public banks.

Individual transactions in SPEI® for the year of 2013 are used to calculate to what extent incoming payments cover participants obligations, which are refer to as recycled. In the case of SPEI®, incoming payments could be either obligations received from other parties or unsecured lending between participants. It is assumed that the rest of the payments are covered with funds coming from different systems. Further, given the same time period, we calculate on an aggregated level, the overdraft registered in SIAC, and the Banco de Mexico (BdM) intraday repos performed in DALÍ. We compare on a daily basis and per hour, the calculated funded payments vs the real amount of overdrafts and repos provided into the system.

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[i] S.D. INDEVAL, Institución para el Depósito de Valores, S.A. de C.V.

[ii] The legal framework of the commercial and development banks is established by the Credit Institutions Act.

[iii] Numeral M.73 of Circular 2019/95 establishes the rules regarded to multipurpose commercial banks, whereas numeral BD.51 of Circular 1/2006 refers to public development banks.

[iv] Numeral CB.2 of Circular 115/2002 establishes the rules regarded to broker houses.