

## Liquidity Management: A Self Study Guide

### Extended course

#### Lesson 7:

### Instruments of Active Liquidity Management

#### Learning Objectives

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When you have studied this lesson you should be able to:

- distinguish active liquidity management from passive liquidity measurement,
- decide which types of liquid assets might be suitable instruments for holding your institution's liquidity stock,
- develop a strategy for reducing the opportunity cost of stored liquidity,
- name the properties of securities that characterize suitable liquid assets,
- develop strategies for raising cash from non-liquid assets,
- explain the liquidity consequences of strategic funding decisions concerning equity, bonds, long-term loans and deposits,
- describe how savings product design, bank reputation and convenience influence the development of the deposit base,
- distinguish purchased funds from retail deposits,
- develop a short-term borrowing strategy for your institution,
- discuss advantages and problems of inter-MFI liquidity pools and so-called apex institutions,
- assess different funding options in the four dimensions of direct and indirect financial costs, administrative costs and liquidity risk.

#### Pre-Test (Solutions are at the end of the lesson)

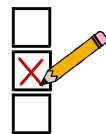
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P1 Which of the following is not a suitable liquid asset from the perspective of liquidity management?

- A) Long-term government bonds
- B) Vault cash
- C) Money market deposits with other banks
- D) Transaction deposits with correspondent banks

P2 A sale-and-lease back transaction is

- A) a way for street vendors to improve their sales volume
- B) an instrument for extracting cash from fixed assets
- C) a way to get back a loan that was not repaid on time



**P3** Which of the following represent indirect financial costs?

- a) Collecting retail customer deposits requires a higher capital base.
- b) 5% of all savings deposits must be held as minimum reserve.
- c) A MFI with more than \$5million in customer deposits must prepare detailed, regular reports to the central bank.

Choose

- A) all of the above
- B) a) and b)
- C) b) only

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### Action Variables of Liquidity Management

So far our objective has been mainly to measure the current and future liquidity position resulting from the primary operations of a MFI. We have ventured briefly into active liquidity management already, when we recorded the effects of short-term investment and borrowing in our cash flow charts.

This lesson will expand on the action variables of liquidity management. The goal is to reduce liquidity risk and improve the profitability of the MFI. On the liability side, we will look at ways to gain access to additional funds and to diversify funding sources, thereby reducing the volatility of the funding base. On the asset side, we will consider strategies for minimizing the opportunity cost of liquidity by investing in the inter-bank market or by holding low-risk, short-term securities. We will also discuss approaches for covering liquidity needs in a crisis scenario. These include access to emergency borrowing from a liquidity pool as well as strategies for mobilizing cash from non-liquid assets.

#### 7.1 Asset Side Liquidity Management



Ordinary-  
Operations-  
Workbench

##### A. Managing "Traditional" Liquid Assets

The asset side of the balance sheet is where the bank stores its liquidity. As we have already discussed, this liquidity stock can be held in any of the following forms: vault cash, demand balances or short-duration time deposits with other banks, and highly liquid investments. Vault cash is the most expensive form of liquidity to hold, while short-term investments offer the smallest loss of income when compared to typical earning assets, such as micro loans.

The key to minimizing the cost of liquidity is to cultivate highly liquid, short-term investment opportunities. As a first step, a small MFI could simply try to negotiate interest to be paid on the balances that it holds at formal commercial banks. If there is resistance to paying interest on ordinary demand deposits the MFI can try to keep only a small base of transaction balances while frequently "sweeping" any excess into an interest earning savings account. These savings could be transferred back into the transaction account as needed on a daily basis.

### ***Time Deposits***

The next step might be to invest demand balances that are not immediately needed in higher-interest earning time deposits at the MFI's main correspondent bank. Since this money represents liquidity that should be available to cover transaction needs at any time, it would be wise to arrange for an overdraft borrowing facility with the time deposit as collateral. This type of arrangement is particularly useful for covering unanticipated peaks in cash demand that last only a few days. Instead of breaking the time deposit and possibly paying a penalty, the MFI would briefly carry a deposit and a short-term debt in parallel.

The important point is that these liquidity instruments have to be negotiated ahead of time. The MFI needs to make its case with the commercial bank by providing financial statements and other background about the size and the quality of its operations. The following should be agreed upon well before the immediate need for cash materializes:

- credit limits,
- collateral requirements,
- interest rate level,
- communication channels.

#### **Box 7.1: Short-term inter-bank operations at Rural Bank of Panabo (RBP), Philippines**

Rural Bank of Panabo is a small, privately-owned, savings and loan institution serving a diverse clientele of low-income farmers, fishermen, market vendors and other small businesses in the Panabo area.

The basic instrument for RBP's liquidity reserve is the fund-monitoring function in the computerized management information system. The fund-monitoring sheet presents the deposit liabilities of the bank and the required liquidity (RBP's liquidity preference is 20% for both time and regular savings accounts). Cash funds and required liquidity are compared to calculate the excess or deficit of funds. The monitoring sheet is prepared each morning by the chief accountant and submitted to the general manager. Depending on the balance, investments will be adjusted to either lower or raise cash levels.

In case of urgent liquidity needs, RBP will first withdraw its funds from various commercial and government banks in the region. In addition, the bank has access to credit lines with various banks and financing agencies. The total available credit lines amount to US\$4 million, of which RBP used US\$1.5 million in 1996. Despite these credit lines, the bank does not yet have immediate access to liquidity pools where funds would be available on very short notice for overnight purposes.

*Source: Ulrich Wehnert in: Challenges of Microsavings Mobilization. A. Hannig / S. Wisniewski (eds), 1999.*

### ***Money Market Deposits***

The next step up for a MFI with sizable cash reserves is to place large overnight or time deposits in the inter-bank money market. These deposits are usually handled by money market traders in standardized lots with rather large minimum amounts (say \$500,000). The term "inter-bank money market" may make one think of a computerized trading room with direct lines to all the major banks in the world. Again, a MFI will have to start small.

The logical first step is to place money market deposits with your main correspondent, who knows your business and will be more flexible when it comes to minimum lots and the possibility of early withdrawal in the case of an acute liquidity shortfall. As soon as placement volumes allow, a MFI would be well advised to open correspondent accounts and begin money market relationships with one or two additional commercial banks. Having more than one established outlet for placing money market deposits will allow the MFI to shop around for the highest interest rates. Regular dealings with the traders at the correspondent banks will also provide an opportunity to establish a name for your MFI and credibility in the money market. The reputation as a reliable business partner and the personal relationships that your MFI builds in this process are essential if you desire not only to place deposits in the market but also want to take in funds from commercial banks at a later date.

### Comprehension Check

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*(Please refer to the text to find the answers)*

- i. What is the most expensive form of liquidity to hold?
- ii. How can you make sure that time deposits are still available to cover sudden cash needs?
- iii. Name some of the details that must be clarified before you can pick up the phone and place a money market deposit.
- iv. Why might a MFI establish money market relationships with several banks instead of concentrating all its deposits with the main commercial correspondent bank?

## B Investing in Short-Term Securities

Most large commercial banks store a significant portion of their liquidity in readily saleable, short-term securities. Again, the motivation is to earn as much interest on the liquidity reserve as possible, while still having access to the funds on a moment's notice.

### *Eligible Securities for Storing Liquidity*

Investing in liquid securities may not be an option for every MFI. Many micro-finance organizations are still far from the required minimum investment volumes, while others may find that the financial markets in their country are not developed enough to offer the appropriate instruments. However, it is important for MFI management to at least be aware of short-term investments as a future option for enhancing their liquidity management. For this purpose, we will briefly discuss a "check-list" of properties that characterize suitable short-term security investments. The criteria that should be met are the following:

- fixed income (debt) security,
- negligible credit risk,
- short time until maturity,
- active secondary market,
- low transaction costs and rapid execution of trades,
- no exposure to foreign exchange risk.

Short-term investments for liquidity purposes should not be speculative and expose the bank to significant price risk. This rules out any equity security, such as common stock, the value of which changes daily as a function of the profit outlook of the company. Liquid short-term investments should only be in debt obligations that require the debtor to pay a fixed amount of interest in addition to the full principal. Such obligations are also often referred to as fixed-income securities.

Even though a fixed-income security offers set payments at precisely defined times, there is still the default risk of the borrower to consider. Unless the fixed-income security comes with additional guarantees or collateral, the debt might not be paid back if the borrower goes bankrupt or experiences financial difficulty. This credit risk should be minimized for liquidity investments. Most banks only hold paper in their liquidity reserve from either government entities or first-rate, private borrowers.

Debt securities that are eligible for the liquidity reserve should not have maturities longer than a year, typically even less than six months. Maturity is another word for the time left until the borrower has to repay the principal of the loan. Intuitively, you might think that the reason for the short maturity is the desire to get your investment back quickly when you need the liquidity. This is not the main motivation, however, because six months is still a long time to wait for the borrower to pay, if you are running out of cash in the vault. Rather, you would sell the security right away.

The real reason for the short maturity is that the price of a debt security changes depending on the current interest rates in the financial markets. This is easy to understand if you consider holding a 10-year bond that pays 10% interest on its face value every year and still has 8 years until the principal must be repaid. If the market interest rate has changed to 15% for newly issued bonds in the meantime, buying a 10% bond is not

an attractive investment. A reasonable investor would only offer less than the face value for the old bond. In fact, the old bond would be bid down to a level where the fixed 10% interest on the face value equals 15% compared to the price offered for it now. This argument is summarized in figure 7.1.

Figure 7.1: Bond Price as a Function of Market Interest

Nominal Interest	Market Interest	Market Price
10%	10%	100
10%	15%	77.6

Figure 7.1 shows how the market value of fixed income securities varies depending on subsequent changes in interest rates. This is important for the liquidity manager to consider, because the MFI may be forced to sell the security before its maturity in order to raise cash. Now, the reason for preferring short maturities for liquidity purposes is that the price risk from changes in the interest rate grows with the time until maturity. This can be explained by the fact that, the longer they are "stuck" with a 10% bond in a 15% market, the more investors will bid down that bond. Likewise, they will benefit more holding a 10% bond in a 7% market, the longer the debtor has to pay the higher rate.

We already mentioned that it is not the eventual repayment of the debt that makes the short-term securities liquid enough to hold as a cash reserve. The liquidity comes from being able to quickly sell the security to another investor before the repayment is due. For this to be possible there must be an active professional trading market in those securities. If the market is too "narrow", it might be difficult to find a buyer on the day that you need to sell. Or, you might be compelled to offer a large price discount, before someone will take the securities off your hands.

For these securities operations to be worth the effort, transaction costs should be reasonable compared to your investment volumes. One has to carefully weigh broker commissions and possible taxes against the interest earned on the investments. In addition to the cost, the MFI has to be concerned about the speed and the ease of executing a transaction. If it takes several days to place an order over the telephone and receive the proceeds in the MFI's transaction account, then the additional interest earned on the investment might not justify the liquidity risk from delayed access to the funds.

Finally, it is important to consider potential foreign exchange risks that might arise from short-term investments in securities. A MFI might be faced with a situation where suitable short-term securities are only available in US dollars, but the liquidity requirement from the MFI's operations is in local currency. This introduces an additional dimension of foreign exchange risk into the liquidity plan, because the value of the US dollar investment might fluctuate drastically when measured in local currency. MFIs should avoid mismatching the currency of their liquidity reserve and the currency in which the use of liquidity occurs. Such foreign exchange exposure should only be taken on, if the MFI has a comprehensive system for professionally monitoring and managing its liquidity across several currencies. The basic features of such a system will be introduced in lesson 8 and developed in lesson 9.

## Comprehension Check

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*(Please refer to the text to find the answers)*

- What is the motivation for holding security investments instead of demand balances as a liquidity store?
- Why does common stock not qualify as a liquid investment?
- What are the risks associated with fixed-income securities?
- Why should only short-term securities be held in the liquidity reserve, even though long-term bonds can also be sold at a moment's notice?
- Would a six-month promissory note from a small micro-lending institution qualify as a liquid investment for another MFI?

## C Raising Cash from Non-Liquid Assets

What are the options for a MFI whose projected liquidity requirements exceed the forecasted development of its liquidity position? There are two basic ways to go about improving liquidity:

- (1) raise more cash by borrowing and/or increasing capital,
- (2) rearrange the assets in order to increase liquid assets at the expense of loans and other non-liquid assets.

We will first cover the asset-restructuring option, before going on to discuss raising additional funds from the liability side in the next chapter.

The most obvious time for a MFI to restructure and liquidate loans or fixed assets would be during a financial crisis, when it would be difficult to borrow funds from commercial sources and when depositors tend to draw down their savings. However, the same strategies can be used for fine-tuning the size of the loan portfolio or for unloading unwanted fixed assets in order to dedicate more of the bank's resources to its primary operating goals.

### ***Mobilize Liquidity from Loans***

Imagine a MFI that is almost fully loaned up and has only enough liquidity to cover its ongoing operational needs. Additional donor equity or long-term loans are not available and deposits are growing steadily but much more slowly than the market for profitable micro loans. Limiting its loan operations would mean foregoing the opportunity to reach out to more of the poor target clientele. Instead, the MFI could make those loans, service them administratively and then combine many small loans into a package of claims that can be sold for cash to commercial investors. This is a very widespread practice in the commercial banking world. A bank that invests heavily in marketing and maintains retail branches will often have the opportunity to "originate" more loans than it has funds for or wants to hold on its balance sheet. Retail banks therefore sell individual loans or entire bundles of similar, standardized loans for cash. They may also offer other arrangements for banks and investors to participate in their loan portfolio.

The exact contractual details and market conventions of these instruments of mobilizing funds from the loans go beyond the immediate scope of liquidity management. Some of the "buzz words" in this field are securitization, factoring, program loans etc.

### **Box 7.2 Securitization of the Loan Portfolio**

Securitization links micro-finance institutions to capital markets by issuing corporate bonds backed and serviced by the MFI's loan portfolio. The structure requires the creation of a single-purpose corporation that acquires micro-enterprise loan portfolios without taking on any other risks. The equity of the single-purpose corporation comes from the MFI and its partners. The single-purpose corporation uses its funds to purchase the portfolio from a MFI at a discount to its face value. The amount of the discount is based on the quality of the portfolio and should protect the corporation from loan losses. In addition, the single-purpose corporation has substantial equity, so that its bonds can be considered a very safe investment. The single-purpose corporation then sells bonds and short-term commercial paper to investors through a brokerage firm. For the securitization to succeed, the broker must be a highly reputed organization with a well-established network of investors. The broker receives a management fee and an underwriting fee.

*Source: Joanna Ledgerwood, Microfinance Handbook, World Bank, 1998.*



***How Can a MFI Mobilize Cash from Loans?***

Admittedly, securitization is a quite sophisticated procedure with an air of high-finance rather than microfinance about it. Yet there is no reason why a well-managed MFI should not be able to use a certain part of its loan base as collateral for short-term funding or arrange an outright sale of loans to a commercial bank or factoring company. Let's look at the basic principles of how these instruments might work for a MFI.

Since individual loans in a MFI are so small, many loans have to be combined in a collateral pool to provide enough backing for commercial funding. The commercial lender will probably require that a certain amount of micro loans, say 140% of the secured debt, is separated out and tracked as designated collateral. One could imagine certain stipulations such that only loans to repeat customers (low credit risk) with a certain maximum time left until maturity can be included in the pool. This collateral pool has to be replenished with other acceptable loans on a revolving basis as individual loans are repaid to the MFI and taken off the books.

***Factoring***

Factoring is different from collateralizing the loan portfolio in that it actually constitutes an effective sale of the loan claims for cash. The factor withholds a discount from the face value of the loans and only pays out, for example, 95%. The difference represents interest for the cash advance and an allowance for loan losses. In its usual form, factoring requires the notification of the individual debtors, instructing them to pay the factor instead of the MFI. This would be difficult administratively and also harmful to the reputation of the MFI. For factoring to be a realistic option, one would have to look for ways to transfer ownership of the micro loans discretely. This could be achieved without disrupting the customer relationship if the loans were sold to the same commercial bank that already handles the disbursement and collection of loans for the MFI. You will recall the example of Alexandria Business Association, which does not deal in vault cash and conducts its lending business via the branch network of a commercial bank. In such a situation, the customer would never have to find out that he was actually paying back a loan not to the MFI but to the commercial bank that now owns it.

***Mobilizing Cash during a Liquidity Crisis***

It is possible that in the normal course of business loan collateralization and factoring are too cumbersome or too expensive in terms of interest cost. Despite these limitations, it will still be worthwhile making the necessary prior arrangements so that this source of liquidity can be activated in an unforeseen liquidity crunch.

The next logical place to look for opportunities to mobilize cash from assets is the fixed asset base of the MFI. Typical fixed assets include land, buildings, vehicles and computer equipment. Again, the two basic approaches to extracting cash out of these "dead" assets are either an outright sale or a pledge of the assets against a commercial loan.

***Sale-and-Lease-Back of Fixed Assets***

For the most part, these fixed assets are essential requirements for the MFI's operation. So, the key to the sale strategy is to retain the use of the asset despite the transfer of ownership. In commercial banking language, this type of arrangement is called a sale-and-lease-back. In essence, the MFI exchanges a cash inflow from the sale against future rent payments that include an appropriate interest incentive for the investor, who is willing to buy the building and lease it to the MFI.

***Fixed Assets as Collateral***

The obvious alternative to a sale-and-lease-back is to retain formal ownership of the assets and to simply offer them as collateral for additional loan funding. Of course, this is only an option if the property is not already pledged as collateral under the original acquisition financing. Even if the MFI has significant unencumbered assets, one should use this funding instrument sparingly. Pledging the most valuable assets of the MFI to new lenders will put existing unsecured creditors at a disadvantage. If you overuse the collateralized borrowing option, other lenders will cut back their credit lines or refuse to extend new unsecured short-term finance.

**Box 7.3: ACCION International - Helping MFIs to Access Capital Markets**

Recognizing that international capital markets are the only source of funds large enough to make a real impact on world poverty, ACCION International plays a leading role in helping MFIs develop the capacity to access them. ACCION is now working to design and implement financial instruments that can be issued into the capital markets, including the securitization of loan portfolios.

More and more MFIs are accessing commercial funds in the form of bank loans, both internationally and domestically, to on-lend to their clients. Far fewer have been able to tap into the capital markets through the issuance of their own debt instruments, most typically as certificates of deposit or as bonds. To tap into the capital markets, micro lending institutions must become commercially viable, covering both operating and financial costs with interest income and fees. Perhaps 50 of the estimated 7,000 to 10,000 micro lenders worldwide have achieved this.

Some ACCION affiliates have not only reached commercial viability but have subsequently been incorporated into their country's financial system as regulated institutions. This allows them to also offer savings and other financial services to their microenterprise clients. Examples include BancoSol in Bolivia, Finamérica and Cooperativa Emprender in Colombia, Mibanco in Peru, Banco Solidario in Ecuador and MultiCredit Bank in Panama.

Source: ACCION International Press Kit, [www.accion.org](http://www.accion.org).

## Comprehension Check

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*(Please refer to the text to find the answers)*

- i. Is asset liquidation only a strategy for coping with a liquidity crisis?
- ii. How can a MFI with a large branch network benefit from liquidating part of its loan portfolio?
- iii. What is the difference between securitizing and collateralizing loans?
- iv. How can cash be mobilized from fixed assets that are essential for the MFI's operation?
- v. Explain how a sale-and-lease-back of a MFI office building might work.

## 7.2 Liability Side Liquidity Management

The logic of liability side liquidity management is obvious: if you don't have the liquidity in your assets, you might be able to borrow it instead. The liability side of the balance sheet provides an inventory of all possible funding sources available to the MFI, ranging from equity to money market liabilities. We will briefly cover equity, long-term funding and customer deposits here, but it is important to remember that these funding sources are not variables of liquidity management. You will recall that we distinguished between the strategic decisions governing equity, long-term loans and the deposit base on one side, and the short-term instruments that constitute active liquidity management on the other.

The strategic funding transactions below are captured in the cash flow plan as "Cash Flows from Long-Term Financing" (see lesson 4, section 4.6). These instruments are of interest because they play an important part in determining the size of the operative liquidity requirements, which the liquidity manager must cover with short-term funding and investment instruments.



Input-Long-  
Term-Flows

### A Overview of "Strategic" Funding Sources

Equity by definition is the most stable funding source. Equity is provided without a time limitation and can only be paid back either at the time of liquidation, after all other claims have been satisfied, or in a strictly regulated process of capital reduction. The problem thus is not keeping the equity, but getting more of it. Most MFIs rely primarily on equity from international donor organizations. Additional donor equity is difficult to mobilize because these organizations tend to ration their funds based on political priorities. MFIs that consider raising equity capital not from donors but from ordinary, profit-driven investors will have to take into account that equity is not only the most stable funding source but also the most expensive one. An investment in a MFI will generally be seen as rather high risk, depending on the history and track record of the individual organization. Therefore, the MFI must be able to credibly promise a high return on capital. If the intention is to raise equity from *international* agencies or investors, then the overall country risk of the MFI domicile must be taken into account. Very often, investors attach a very high risk premium to developing countries, regardless of the individual standing of the organization.

### ***Socially Responsible Mutual Funds***

An attractive compromise between traditional, subsidized donor equity and entirely profit-driven, mainstream investors could be an equity stake from a socially responsible mutual fund. Such funds also insist on financial viability, but are willing to compromise on the amount of profit, as long as their investment makes a difference in the lives of poor people in the developing world.

### ***Long-Term Loans***

Only if the MFI has secured an adequate equity base as guarantee capital, it is feasible to think about obtaining debt capital. Access to loans other than politically motivated soft loans from donor organizations (quasi equity) is only an option for MFIs that have an established track record, a professional organization and independently audited financial statements. In order to get a loan, a MFI must demonstrate its financial self-sufficiency, at least insofar as being able to cover the operating costs and the debt service from its own revenue.

#### **Box 7.4: Pro Fund - an Equity Investment Fund for Latin America**

ProFund is the world's first private equity fund solely dedicated to microfinance investment. Based in San Jose, Costa Rica, ProFund's strategy is to achieve superior financial returns through the purchase of debt and equity in regulated financial institutions dedicated to serving small businesses and microenterprises in Latin America and the Caribbean.

At the end of 1997, ProFund was capitalized by a group of 16 investors who subscribed a total of more than \$22 million with 63 percent of the capital paid in at the time. ProFund's founding investors are Calmeadow, ACCION International, the Swiss FUNDES foundation and SIDI, a French NGO consortium. Other investors include the International Finance Corporation, the Inter-American Development Bank's Multilateral Investment Fund and the Rockefeller Foundation.

By 1997, ProFund had made seven investments with total commitments of \$12.2 million. Beneficiary MFIs include: Accion Comunitaria del Peru, Banco Empresarial, Guatemala, BancoSol, Bolivia, Banco Solidario, Ecuador, Caja de Ahorro y Préstamo Los Andes, Bolivia, Finansol, Colombia and Servicredit, Nicaragua.

*Source: Joanna Ledgerwood, Microfinance Handbook, World Bank, 1998 and [www.accion.org](http://www.accion.org)*

#### **Bonds**

Banco Caja Social (BCS) in Colombia, for example, is an outstanding example of a successful and financially self-sustaining microfinance organization. BCS began issuing negotiable bonds to domestic insurance companies and pension funds in 1995. These bonds account for 5.7% of its total balance sheet today.

#### **Loan Guarantees**

For most other MFIs - even those that appear financially viable - long-term loans from commercial sources depend on guarantees from governments or other organizations sympathetic to the cause of the microfinance sector. The basic idea of a guarantee fund is to leverage the resources of a donor organization for the benefit of the micro-finance institutions. So, rather than using the available funds once for a loan to a MFI, the donor will establish a guarantee fund, which serves as collateral to private sector lenders that provide loans to the MFIs instead. Typically, the fund only guarantees a certain portion of the loan or requires that the lender makes an additional loan that is not guaranteed by the fund. In theory, the guarantee capital can often be used to double or triple the amount of funding that is provided to MFIs. In addition, a guarantee scheme is a way of encouraging direct contacts between MFIs and the formal financial sector. The commercial lender will gain trust in the MFI partners and then, hopefully, be more open to lending directly without third party guarantees in the future.

From the perspective of the MFI, however, a word of caution is in order. A MFI should not take on a loan simply because it is available and it is guaranteed. It is important to remember that such guarantees are not designed to protect you, the microfinance institution, but to protect the commercial lender. If you cannot invest the proceeds advantageously and fail to service the debt, your institution will still go bankrupt, before the guarantee comes in and the lender is reimbursed for the loss. In other words, institutional guarantee systems will not take away the responsibility from microfinance institutions to manage the risks involved in their microlending operations with great care.

**Box 7.5: ACCION International Bridge Fund**

In 1984, ACCION created a guarantee fund, the Latin America Bridge Fund, to meet its affiliates' growing demand for capital to fund their microloan portfolios. The first of its kind, the Bridge Fund is capitalized by donations and private deposits. The Fund issues (stand-by) letters of credit that allow ACCION affiliates to borrow directly from local banks, dramatically increasing their pool of capital for microloans and effectively linking microenterprise with the formal banking sector. The Latin America Bridge Fund is currently capitalized at over \$5 million and pays a range of rates to its investors. Some of the MFIs affiliated with the Bridge Fund have in the meantime been successful in borrowing directly from commercial sources without the use of the guarantee scheme.

*Source: ACCION International Press Kit, [www.accion.org](http://www.accion.org)*

**Retail Deposits**

The third component of strategic funding that we will briefly revisit here are retail deposits. Retail deposits, unlike purchased funds, are not under the immediate control of bank management. We cannot just go out and get more deposits when we need them. Deposits have to be attracted by offering the right conditions, so that individuals will want to bring in their funds on their own initiative. Since retail deposits are such an important determinant of bank liquidity, particular attention should be given to designing savings products that will contribute to increase the deposit base and reduce its volatility.

Compulsory savings and obligatory minimum time commitments could in theory reduce daily deposit fluctuations. The problem is that such rules ignore the interests of the savers, who overwhelmingly request immediate access to their savings for emergencies. If a MFI wants not only to stabilize deposits but to expand its deposit base, then daily availability of savings is critical. Instead of prohibiting immediate withdrawal, the MFI should build interest incentives into the savings products that discourage frequent account movements. One could offer an interest bonus for savings balances that have not been touched for a certain time. A small number of withdrawals may actually be allowed per year without forfeiting the higher interest rate. There are many possible ways to fine-tune the incentives so that the actual cost to the MFI is small but the psychological barrier to withdrawal is high.

**Reputation and Convenience**

Clever savings product design is only one of the three success factors in mobilizing and stabilizing deposits. The other two are reputation and convenience. A MFI must build up customer confidence and dispel any concern that savings might not be safe in the bank. Even if the risks from lending operations are of greater concern, it might be wise to reassure customers by operating from a secure building, with armed guards and visible security equipment. Community involvement and impeccable personal conduct of employees are also important ways to enhance the MFI's credibility and reputation.

Finally, it should be convenient for customers to deposit their money. Opening hours that suit the schedule of the clientele and conveniently located branches, service outposts or mobile bank stations are ways to bring savings services closer to your targeted customers. Convenience not only brings in more deposits, it also keeps deposits that might have otherwise been withdrawn. If it is easy to get to their money quickly, customers will leave it in the bank rather than withdrawing it just because they *might* need the funds and want to avoid a special trip to the bank if the need materializes.

**Box 7.6: Design of Demand-Oriented Savings Products at Bank Rakyat Indonesia (BRI)**

At BRI, market studies and research on savings products began in 1982 and demonstrated that there was extensive rural demand for savings facilities. In addition to bringing in monetary savings that were otherwise kept in the house, it became evident that many villagers would convert some non-financial savings into institutional deposits if appropriate facilities were available.

BRI found that market research must focus on learning what the clients want in order to incorporate this information into both the product design and its advertising. Studies on savings motives and preferences of rural people throughout Indonesia identified four major characteristics a savings facility must combine: security, convenience, liquidity and a positive return.

In regard to the security of deposits, savers emphasized the reputation of the bank. BRI was well known among the villagers, because it had been the only major bank in rural areas for decades. BRI could also build on its advantage as a government bank - a nearly unlimited guarantee for safety and security in the eyes of rural people.

BRI looked for new ways to provide convenience to its depositors. For the customer, convenience is measured in terms of transaction costs. Geographical proximity, easy access and fast service reduce the cost and the time needed for making deposits and withdrawals. The BRI unit network is the most extensive of all banks in Indonesia. BRI units are found in more than 80% of all sub-districts in the country and they are within easy reach of the majority of the rural population. The relocation of units from farm outposts to market places in the sub-district towns has helped to place the units in the center of rural economic activity and nearer to the bulk of the clients.

The third element identified was the liquidity of deposits or the ease of withdrawals. BRI decided to offer a product mix of liquid, semi-liquid and fixed deposits to cater to different saver preferences. The national savings product TABANAS had been offered by the units since 1976. Studies showed the limitation of withdrawals (two per month) was an important psychological barrier to the people in rural areas, even though few customers actually make two withdrawals in a single month. The findings resulted in the design of SIMPEDES, where savers are permitted unlimited withdrawals, a feature that has proven most important for the success of the program. In addition, TABANAS was continued as a semi-liquid product. Fixed deposits previously available from BRI only through its branches were introduced at the units as well.

Depositors expect a positive real return on their savings. With the exception of GIRO and small SIMPEDES/SIMASKOT accounts, the deposit instruments have generally provided positive real interest rates. Over the past ten years, inflation ranged between 5-10% while interest rates on deposits were continuously above 10%.

Furthermore, research findings showed that raffles and lotteries were popular among rural people. Drawing the lot in an Arisan, the popular Indonesian version of Rotating Savings and Credit Associations, is always a notable social event. The SIMPEDES savings product was consequently enhanced with a lottery. Further market research was carried out on such specific matters as what kind of lottery prizes were popular, what kind of bank book was wanted and what kind of publicity was effective.

*Source: Klaus Maurer in: Challenges of Microsavings Mobilization. A. Hannig / S. Wisniwski (eds), 1999.*

## Comprehension Check

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*(Please refer to the text to find the answers)*

- i. Why is equity important in raising debt capital?
- ii. Can equity be abruptly withdrawn from a MFI, creating a liquidity problem?
- iii. Why is equity the most expensive form of funding?
- iv. Why would a donor organization guarantee a commercial loan to a MFI instead of granting the loan itself?
- v. What protection does a loan guarantee offer to the MFI?
- vi. Why are retail deposits not part of active liquidity management?
- vii. How can MFIs influence their reputation for security?
- viii. Describe ways to improve the convenience of microsavings facilities.



## B Purchased Funds

Now, we are back on the home turf of liquidity management. “Purchased funds” is a summary term for short-term borrowings, wholesale deposits and funds obtained from the interbank money market. Purchased funds are different from retail deposits insofar as the institution actively goes out and contracts them in large individual transactions at interest rates that are imposed by the financial market. These funds can be obtained quickly over the telephone and are much cheaper to handle than small retail deposits. In contrast to retail deposits, however, they carry a substantial financial cost. The financial cost consists of the interbank market rate plus a risk premium that depends on the standing of the individual MFI. Purchased funds are also extremely sensitive to interest rate changes and present a considerable risk exposure. They are placed by professional money managers who will move the deposit for a slightly higher interest rate and will withdraw the funds abruptly at the slightest sign of financial difficulty on the part of the MFI. Purchased funds are truly hot money.

Despite these cautions, short-term commercial financing is an area that an ambitious, growing MFI cannot neglect. Wholesale deposits and commercial short-term loans are the essential instruments of liability- side liquidity management.



Ordinary-  
Operations-  
Workbench

### **Strategy**

The most promising strategy for developing short-term finance facilities that do not rely on donor organizations is to approach the established, national commercial banking sector. Businesses and other large individual depositors will prefer holding their balances at traditional banks, where they can also receive additional services such as clearing payments, credit cards, international banking, overdraft facilities, business advice etc. Even with a substantial interest premium, it would be very difficult to entice large business customers to deposit funds with a MFI with a limited scope of services.

As far as deposits from commercial banks go, the logical starting point is to work with the correspondent banks that hold the MFI's own deposits and transaction balances. We already mentioned the importance of building business relationships of trust with the correspondents in the formal banking sector when discussing short-term investment opportunities. It is in the area of short-term borrowing that this relationship-building really pays off. Cultivating these borrowing windows is important, even if initial volumes are small or there is no current need for the funds. Unused borrowing capacity is an essential liquidity cushion.

We should stress again that borrowing capacity tends to evaporate just when you need it most, i.e. at a time of liquidity strain. This is why large commercial banks regularly negotiate money market trading lines and then test and use them even when there is no need for the liquidity. To the bank, this is simply an assurance that a diversified borrowing network is in place for the day that a liquidity need arises. Moreover, if you only use the borrowing facility when you really need it, your counterpart will easily “smell” your desperation and might well refuse the loan.

### **Appropriate Uses of Purchased Funds**

Since purchased funds are such hot money, many banks establish safety rules that do not allow purchased funds to exceed a certain percentage of core retail deposits. The most appropriate use for these volatile and high-cost funds is for short-term, seasonal liquidity needs.

It is dangerous to rely heavily on purchased funds for liquidity requirements that arise from a cyclical boom in the economy. The argument goes as follows: During an economic boom, loan demand tends to expand quickly, while the retail deposit base tends to decline. As the boom continues, the money market is likely to be tight. This leads to rising interest costs on purchased funds. The rising interest costs can only be passed on to the MFI's borrowers with a certain delay as old loans mature and new ones are given out at higher rates. This reduces the interest margin or may actually lead to a net loss. From experience, small banks in developed markets generally hold a high degree of liquid assets in the early stage of a cyclical upswing. They prefer to ride out the boom by making loans from stored liquidity, rather than going into the boom fully loaned-up and having to purchase expensive liquidity to honor loan demands.

### ***Commercial Paper***

Instead of purchasing short-term funds from a commercial bank, some of the larger and better-known MFIs might consider issuing negotiable<sup>1</sup> debt instruments to a broader range of investors. See Box 7.7 for an example of a MFI that succeeded in issuing so-called commercial paper.

#### **Box 7.7: Commercial Paper at BancoSol, Bolivia**

Commercial paper is a negotiable debt instrument with a relatively short maturity and a fixed nominal interest. Investors evaluate the paper in terms of risk versus interest yield, comparing it with other available investment opportunities. In order to succeed in the financial market, a MFI must offer at least the same yield as other investments that are perceived to be in the same risk class. Accordingly, a MFI entering the financial markets for the first time might have to offer a rather high yield to win over investors.

Establishing the correct risk is especially important for a MFI that operates in a sector of the economy that itself is also little known in the international financial markets. For example, when ACCION International was placing paper issued by BancoSol with North American financial institutions in 1994, investors initially expected a level of yield that reflected both the country risk as well as a high venture capital risk premium. Bolivia's country risk was clearly a relevant consideration. In contrast to focusing exclusively on the country risk, ACCION argued successfully that the appropriate business risk, rather than being compared to venture capital, should reflect the proven microlending methodology used by BancoSol's predecessor, PRODEM, since 1987. On the basis of a consistent track record of less than 1% annual portfolio loss, the yield offered on BancoSol paper was in the end highly attractive.

It is not necessary to become a regulated financial institution before issuing financial paper. For example, the ACCION affiliate in Paraguay, Fundacion Paraguaya de Cooperación y Desarrollo, registered as a NGO, issued 350 million Guarani in debt through the Asunción Securities Exchange in 1995.

*Source: Joanna Ledgerwood, Microfinance Handbook, World Bank, 1998.*

<sup>1</sup> A negotiable instrument is a financial claim that can easily be assigned and sold to another party without further consent from the debtor

### **Liquidity Pools**

Another frequently cited option for short-term funding is a liquidity pool created by a group of MFIs that operate in the same region or national market. Such liquidity "self-help groups" are also often discussed in the framework of apex institutions. An apex institution is a legally registered wholesale institution that provides financial management and other services to retail MFIs.

Apex institutions come in two basic variations: bottom-up or top-down. Top-down apex organizations are essentially designed as efficient vehicles for the delivery of donor capital and advice to a number of retail MFIs in the area. An apex institution that is able to provide an inexpensive liquidity facility from donor funds is certainly a welcome addition to the funding sources of any MFI. Since most MFIs lack access to a lender of last resort (typically a central bank), a borrowing window offered by the apex institution is particularly important for providing emergency liquidity.

However, many analysts in the micro-finance field now favor a bottom-up apex model that focuses on attracting funds mobilized by member MFIs for on-lending to other members in need of liquidity. On the one side, networking arrangements between peer organizations facilitate the independence from continuous donor or government support. In this context, creating economies of scale and scope also contributes to more efficient financial intermediation. On the other side, these self-help liquidity pools are often the only source of commercial funds in the absence of a commercial banking sector that is willing and able to cooperate with MFIs.

One might emphasize that MFIs are borrowing at market interest rates from the apex institution. It may be true that the MFI pays the same rate that another commercial bank would pay on the deposit. But is this the appropriate risk-adjusted interest rate, particularly if the borrowing MFI is in a financial emergency? Many U.S. consumers pay 26% interest on credit card balances at a time when home loans are available for 30 years, fixed at 7.5%. Properly- calculated risk premiums can be quite large.

**Box 7.8: Fédération des Caisses d'Epargne et de Crédit Agricole Mutuel du Bénin (FECECAM) - Liquidity Management via a Cooperative Apex Institution**

FECECAM is a large network of rural credit unions with 110 retail outlets and 211,000 members throughout Benin. The local credit unions are independent legal entities owned by the member clients. The individual credit unions hold the capital of the regional unions, which in turn hold that of the federation (FECECAM). FECECAM is an example of a "bottom-up" apex institution, which - in addition to training and other advisory services - carries out certain liquidity management functions on behalf of its affiliates.

The bank supervisory service of the federation defines authorized cash-on-hand for each bank according to its business volume. The cash assets of the individual credit unions that are in excess of the authorized cash-on-hand are invested at the regional union. The regional unions in turn reinvest the funds at the federation as term deposits or ordinary deposits. The federation and the regional unions can provide internal credit lines to an individual credit union, whose customer loan demand exceeds the authorized loan volume, provided it has a proven management record. Authorized loan volume is calculated on the basis of the funding generated by the credit union.

Thus the federation manages the excess liquidity of the entire credit union network and makes sure that regulatory liquidity standards are met. The federation invests the collective resources in the commercial banking system, where it can leverage favorable rates while diversifying counterpart risk.

*Source: Christine Westercamp in: Challenges of Microsavings Mobilization. A. Hannig / S. Wisniwski (eds), 1999*

***Promising Areas of Inter-MFI Cooperation***

There is considerable scope for cooperation between MFIs in the liquidity management area. It is easy to imagine how MFIs might benefit from pooling their resources for vault cash operations, for example. If the participating MFIs are situated in the same geographic area, they could benefit by running a common cash delivery service or even investing in a cooperative central storage vault.

***Trade-off between Funding Options***

This section was intended to give an overview of liquidity management instruments from a liability side perspective. We saw that the different funding options come with a mix of advantages and disadvantages that have to be weighed carefully in order to arrive at an appropriate funding mix for each MFI's particular circumstances. We will use the rest of this lesson to summarize these trade-offs and introduce a graphical representation of the relevant cost and risk dimensions of different types of liquidity sources.

***Direct Financial Cost versus Administrative Cost***

All funding instruments are characterized by a certain direct financial cost consisting of interest and commissions. Direct financial costs usually display an inverse relationship to administrative costs. Small transaction deposits are very expensive to administer on a per dollar basis, but only cost a relatively low interest rate. In contrast, large interbank borrowings command full market interest, but the administration consists of a phone call and an entry into the dealer's trade journal.

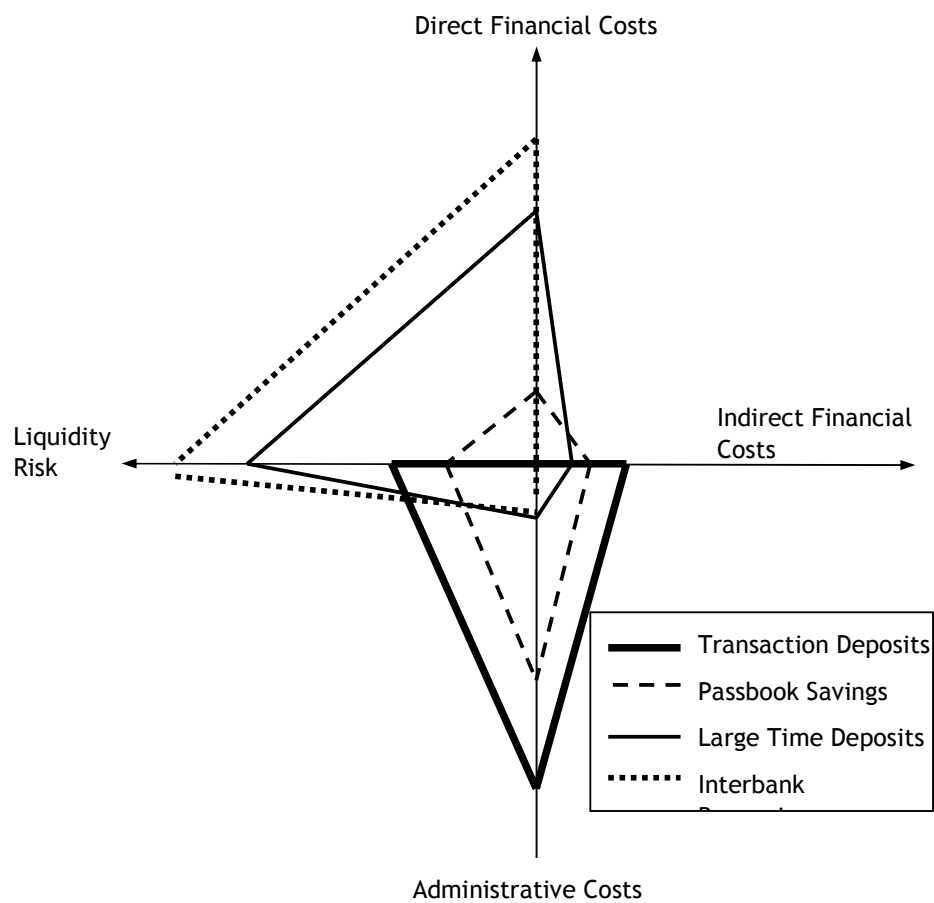
***Indirect Financial Cost***

A typical indirect financial cost is the lost income from holding a required minimum reserve against retail deposits, for example. A money market deposit taken in by the MFI, however, will often be exempt from minimum reserve. Indirect financial costs are also caused by regulatory rules attached to certain sources of funding. Taking deposits from the general public regularly triggers special reporting obligations and may well force the MFI to adopt a different legal form or raise additional equity to meet higher capital requirements.

***Liquidity Risk***

Finally, the liquidity risk dimension captures the volatility of the funding source. Large interbank loans and other purchased funds are interest-rate competitive and will quickly be withdrawn at the slightest appearance of an adverse change in the MFI's credit risk. Retail depositors are much slower to react to a deterioration of the MFI's financial standing and are much less aggressive in their interest rate demands than professional investors.

Figure 7.2 depicts the above relationships for different sources of funding.

**Figure 7.2** Costs and Risks of Different Sources of Funds

Source: Sylvia Wisniwski in: *Challenges of Microsavings Mobilization*.  
A. Hannig / S. Wisniwski (eds), 1999.

## Comprehension Check

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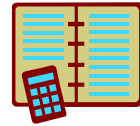


*(Please refer to the text to find the answers)*

- i. How do purchased funds compare to retail deposits in terms of administrative costs and direct financial costs?
- ii. Why will it be difficult for a MFI to attract large businesses as depositors?
- iii. Why would a MFI want to occasionally borrow expensive short-term funds even when there is no immediate need for the liquidity?
- iv. Should purchased funds be used to fund cyclical demand for microcredit?
- v. What is an apex institution?
- vi. How can a top-down apex institution provide assistance in managing the liquidity of a MFI?
- vii. What are the advantages and limitations of a top-down and bottom-up liquidity pool arrangement?
- viii. Give two examples of indirect financial costs.

## Exercises

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*(Solutions are at the end of the lesson)*

### E1 Time Deposits with Overdraft Facility

Your institution places a P1,000,000 time deposit with your commercial correspondent bank on March 1<sup>st</sup> for 15 days. The deposit earns 8% interest p.a. quoted on the basis of linear 360-day computation. You have an overdraft arrangement with the correspondent, which allows you to borrow up to 90% of your time deposits at 14% p.a. (360 days). If you break the time deposit before maturity, you forfeit the total amount of accrued interest and pay an administrative fee of P500. On March 3<sup>rd</sup> you urgently need P700,000 to replenish your demand cash. P200,000 you expect to be able to repay on March 6th, the remaining P500,000 will be freed up again on March 18. Which alternative is less costly, breaking the time deposit or using the overdraft?

### E2 Effective Yield on Fixed Income Securities

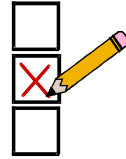
Imagine you hold a \$1,000 face value bond with 10% interest that has one more year until maturity. Suddenly, market interest rates rise from 10% to 15% p.a. You need to sell the bond in order to raise cash. How much will you receive for the bond in the market after the increase in interest rates? Note that this result will be different from figure 7.1 where the bond still had 8 years until maturity.

### E3 Indirect Financial Costs

What is the effective annual cost of funds for a P1,000,000 base of retail deposits that is subject to 15% required reserves. Deposit interest of 0.5% is paid out every month. Required reserves earn 3% p.a. effective interest.

## Multiple Choice Test

(Solutions are at the end of the lesson)



**M1** What is the most expensive form of liquidity?

- A) vault cash ☐
- B) demand deposits with other banks ☐
- C) liquid investments ☐

**M2** Your institution places a \$100,000 time deposit with your correspondent bank on March 1<sup>st</sup> for 15 days. The deposit earns 8% interest p.a. quoted on the basis of linear 360-day computation. You have an overdraft arrangement with the correspondent, which allows you to borrow up to 90% of your time deposits at 14% p.a. (360 days). If you break the time deposit before maturity, you forfeit the total amount of accrued interest and pay an administrative fee of \$200. On March 3<sup>rd</sup> you urgently need \$70,000 to replenish your cash. You expect to be able to repay the \$70,000 on March 10<sup>th</sup>. How much do you gain/lose by breaking the deposit compared to using the overdraft?

- A) You lose \$342. ☐
- B) You gain \$191. ☐
- C) You gain \$333. ☐

**M3** Why might a MFI establish money market relationships with several banks instead of concentrating all its deposits with the main commercial correspondent bank?

- A) Because placing deposits with several correspondents allows shopping for the best rates. ☐
- B) Because the placement volumes are larger if several money market partners are involved at the same time. ☐
- C) Because anti-trust laws require competition among commercial banks. ☐

**M4** Which of the following is not a required property of eligible securities for storing liquidity?

- A) Short time until maturity ☐
- B) Minimal credit risk ☐
- C) Regular dividend payments ☐
- D) Fixed-income security ☐
- E) Active secondary market ☐



- M5** Are actively traded common shares of major corporations suitable liquid investments?
- A) Yes ☐ B) No ☐
- M6** Would a six-month promissory note from a small micro-lending institution qualify as a liquid investment for another MFI?
- A) Yes ☐ B) No ☐
- M7** Do fixed income securities have market price risk?
- A) Yes ☐ B) No ☐
- M8** Imagine you hold a \$1,000 face value bond with 10% interest that has one more year until maturity. Suddenly, market interest rates rise from 10% to 12% p.a. How much will you receive for the bond in the market after the increase in interest rates?
- A) \$1,000 ☐  
B) \$1,120 ☐  
C) \$833 ☐
- M9** What might be a suitable strategy for reducing the opportunity cost of stored liquidity?
- A) increase vault cash, decrease transaction balances ☐  
B) increase short-term borrowing, increase short-term investments ☐  
C) increase short-term investments, decrease demand balances ☐
- M10** Which of the following is not a suitable liquid asset from the perspective of liquidity management?
- A) long-term government bonds ☐  
B) vault cash ☐  
C) money market deposits with other banks ☐  
D) transaction deposits with correspondent banks ☐
- M11** Which of the following is not a suitable instrument for mobilizing cash from fixed assets?
- A) sale-and-lease-back ☐  
B) collateralized loan ☐  
C) emergency auction of company vehicles ☐  
D) capital reduction ☐

**M12** Can equity be abruptly withdrawn from a MFI, creating a liquidity problem?

- A) Yes ☐ B) No ☐

**M13** Equity from commercial investors is an inexpensive source of funding because it does not require regular interest payments.

- A) True ☐ B) False ☐

**M14** Which of the following statements is true?

- A) Loan funding with an institutional guarantee from an international development bank protects the MFI against the default of its micro-borrowers. ☐  
B) A loan guarantee from a donor organization protects the shareholders of the MFI against the loss of their investment. ☐  
C) An institutional loan portfolio guarantee protects the lender against the loan loss in case of a default by the MFI. ☐

**M15** Which of the following factors have an important influence on the deposit mobilization of a MFI?

- a) savings product design  
b) bank reputation  
c) convenience

Choose:

- A) all of the above ☐  
B) a) and c) ☐  
C) b) and c) ☐

**M16** Purchased funds are

- A) core deposits ☐  
B) hot money ☐  
C) reserve funds for unexpected equipment purchases ☐  
D) owned by the institution and therefore permanent ☐

**M17** Should purchased funds be used to fund cyclical demand for microloans?

- A) Yes ☐ B) No ☐

**M18** What is an apex institution?

- A) a strictly decentralized MFI with no corporate head office. ☐
- B) a wholesale financial institution that provides financial services to retail MFIs. ☐
- C) a central bank that is responsible for several countries. ☐

**M19** Which of the following represent indirect financial costs?

- a) collecting retail customer deposits requires a higher capital base
- b) 5% of all savings deposits must be held as minimum reserve
- c) a MFI with more than \$5million in customer deposits must prepare detailed regular reports to the central bank

Choose:

- A) all of the above ☐
- B) a) and b) ☐
- C) b) only ☐

### Solutions to Pre-Test

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P1     A)                      P3     A)

P2     B)

### Solutions to Exercises

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#### E1    Time Deposits with Overdraft Facility

The overdraft solution offers a cost advantage of P1,266.

Overdraft:

Deposit interest earned:    P3,333

Overdraft interest paid:    P700,000 for 3 days  
                                       = P817500,000 for 9 days  
                                       = P1,750

Net interest earned:        P766

The remaining overdraft will be repaid with the maturing time deposit on March 15.

Break the time deposit:    penalty of P500

#### E2    Effective Yield on Fixed Income Securities

$$\frac{100}{\text{Price}} = 0.15; \text{ Price} = \$667$$

#### E3    Indirect Financial Costs

Effective deposit interest:         $1.005^{12} - 1 = 6.17\%$

Interest on required reserve:         $0.15 \times 3\% = 0.45\%$

Effective annual cost of deposits:     $\frac{6.17\% - 0.45\%}{0.85} = 6.72\%$

**Solutions to Multiple Choice**

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<b>0</b>	A)	<b>M11</b>	D)
<b>M2</b>	A)	<b>M12</b>	B)
<b>M3</b>	A)	<b>M13</b>	B)
<b>M4</b>	C)	<b>M14</b>	C)
<b>M5</b>	B)	<b>M15</b>	A)
<b>M6</b>	B)	<b>M16</b>	B)
<b>M7</b>	A)	<b>M17</b>	B)
<b>M8</b>	C) $100/0.12 = 833$	<b>M18</b>	B)
<b>M9</b>	C)	<b>M19</b>	A)
<b>0</b>	A)		